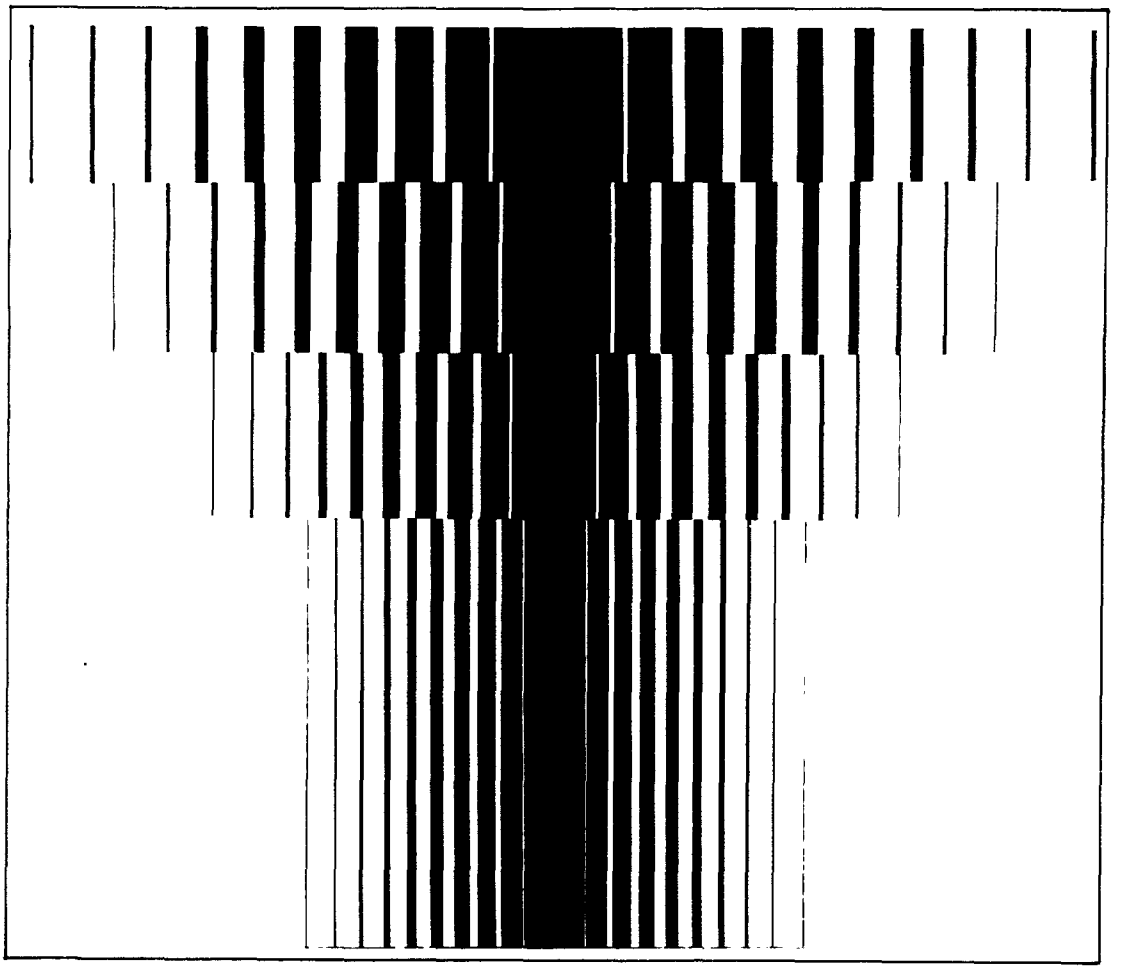
Health Care Visits With Nurses by Place of Visit United States, 1980

Series B, Descriptive Report No. 9



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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 primarily responsible for data processing.

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Symbols

---	Data not available
...	Category not applicable
-	Quantity zero
0.0	Quantity more than zero but less than 0.05
*	Relative standard error is 30 percent or more

Health Care Visits With Nurses by Place of Visit: United States, 1980

By Robert H. Mugge, Ph.D.
National Center for Health Statistics

Executive Summary

In this report, based on the National Medical Care Utilization and Expenditure Survey of 1980, the National Center for Health Statistics presents statistical estimates on health care visits—and on the people who had such visits—with nurses and on places visited by the civilian noninstitutionalized population of the United States. The report does not include telephone visits, emergency room visits, visits in which a physician was also seen, or visits in dental offices and clinics. The report also excludes all services provided to patients in hospitals or nursing homes. In general, the subject of this report may be described as ambulatory services provided independently by nurses in the course of patient visits.

The nurse visits and the visiting patients are reported here according to where the visits took place—in doctors' offices or group practices, doctors' clinics, neighborhood or family health centers, company clinics, school clinics, other clinics, patients' homes, laboratories, hospital outpatient departments, other places, and unknown places. Indications are that nurse visits in these places are greatly outnumbered by nurse visits in institutions and in situations where the doctor is included in the visit; nevertheless, a very extensive set of nurses' services are accounted for in this report, and the data on circumstances of visits and characteristics of clients by place of visit are both meaningful and useful.

Data on nurse visits in each type of place are compared with the total nurse visits in all types of places. Highlights of these findings are as follows:

- Persons having nurse visits in *doctors' offices or group practices* tended to be older than the average nurse patients. Most were white persons; relatively few were black. A large proportion of those 17 years of age and over were married. Family incomes tended to be above average. Charges for the visits were lower than average for nurse visits. The patient or the patient's family paid for about one-half of the charges.
- Persons having nurse visits in *doctors' clinics* shared similar characteristics with persons having nurse visits in doctors' offices. One difference is that payment for services in doctors' clinics is less likely to come from the patient or the patient's family. Nearly 44 percent of the clinic visits were in the North Central Region.
- Persons having nurse visits in *neighborhood and family health centers* tended to be quite young. They had relatively low educational and family income levels. They tended to live in the South and in rural, nonmetropolitan areas. Persons with visits in these centers averaged only 2.7 such visits during the year. More than half of the visits did not involve a health complaint, but rather a visit for immunization, general checkups, or similar services. Also, there was no charge reported for more than half of the visits. When charges were made for the visits, State or local governments or Medicaid frequently paid the bill.
- Persons seeing nurses in *company clinics* were predominantly male, and virtually all were 17 through 64 years of age. They tended to be above average in educational and income levels, and hardly any had activity limitations.
- Persons having nurse visits in *school clinics,* of course, tended to have the characteristics of students in school: They were mostly children, their health status tended to be good, and hardly any had activity limitations. They were most likely to be found in the Northeast. About two-thirds had only one visit during the year.
- Persons seeing nurses in *their own homes* were primarily aged and female, and many were widowed. Their health status tended to be relatively poor, with a high proportion having activity limitations. Their family incomes were generally low. Charges for such visits were relatively high.
- Persons having nurse visits in *laboratories* tended to be older than average and to have higher than average family incomes. Charges were above average but usually included laboratory tests or other special services.
- Persons seeing nurses in *hospital outpatient departments* were somewhat older, on average, than nurses' patients generally. Their average number of visits

during the year was relatively low. Charges for such visits were relatively high. Persons who saw nurses in hospital outpatient clinics also tended to be frequent users of emergency rooms and tended to be patients of internists and obstetrician-gynecologists. Their visits frequently involved x rays, laboratory tests, and other diagnostic procedures, and they frequently also saw physicians in the hospital outpatient departments.

Introduction

Nurses constitute by far the largest group of health care practitioners in the United States. At the end of 1983 there were an estimated 1,404,200 active registered nurses and 539,500 active licensed practical nurses (Division of Nursing, 1985). The next largest group of practitioners consisted of the physicians, estimated to number 437,840 at the end of 1981 (National Center for Health Statistics, 1984, p. 123). The nurses work in a variety of settings and have a wide range of types of responsibility. Places of employment include hospitals, infirmaries, nursing homes, sanitariums, clinics, doctors' offices, industrial plants, schools, patients' homes through a public health department or other service agency, and nursing schools (Croner, 1979). Registered nurses may be certified as adult or family nurse practitioners, pediatric nurse practitioners in ambulatory care, or clinical specialists or generalists in psychiatric and mental health nursing or in community health, gerontological, or medical-surgical nursing.

In recent years various organizations have performed inventories and surveys of the characteristics of registered nurses and of licensed practical nurses (Bureau of Health Professions, 1983; Bureau of Health Professions, 1984; Barbano, Graham, and Checker, 1982). However, there is little systematic knowledge on the nature and circumstances of services provided by nurses in their visits with patients. In this report, based on findings of the 1980 National Medical Care Utilization and Expenditure Survey, data on ambulatory visits to nurses provide one important part of the needed nursing service data.

This report covers, for the noninstitutionalized civilian population in 1980, instances in which nurses met with patients for the purpose of providing health care services, with no physician present. (If a physician was present the visit was counted simply as a physician visit, regardless of a nurse's involvement.) Excluded from this report are all instances in which nurses provided services to hospital inpatients, nursing home residents, and other persons in institutions, or in which nurses provided direct services to patients in conjunction with their visits to physicians. Thus, what surely constitutes the majority of personal health services actually provided by nurses will not be found in this report. It has been reported for 1980 that 74 percent of all employed registered nurses and 73 percent of all employed licensed practical nurses worked in hospitals or nursing homes (Bureau of Health Professions, 1983; Bureau of Labor Statistics, 1985). Nevertheless, this report does cover a very large and important area of nursing care.

It is estimated from the NMCUES survey that 29,095,000 civilian noninstitutionalized persons had 109,539,000 inscope visits with nurses in 1980 (Mugge, 1984, 1985). By comparison, an estimated 157,742,000 civilian noninstitutionalized persons had 714,416,000 visits to physicians in 1980. But the numbers of persons with visits to other types of nonphysician practitioners and the numbers of visits were far lower than the numbers involving nurses.

The survey unfortunately did not yield reliable data on the various types of nurses reported as providing services. From the survey data it is impossible to distinguish reliably among nurse practitioners, other nurse specialists, and other registered nurses, as well as between registered nurses and licensed practical nurses.

The survey, however, provides one particularly meaningful and useful item of information on the nurse visits—the place of visit. The places where nurse visits occurred include: Doctors' offices or group practices, doctors' clinics, neighborhood or family health centers, company clinics, school clinics, other clinics, patients' homes, laboratories, hospital outpatient departments, other places, and unknown places. Except for the "other and unknown" residual categories, each of these places of service represents a separate and unique kind of practice for nurses, whether they be registered or practical nurses. The data from the survey on these visits and on the persons who had such visits during the year tend to describe and characterize the health care practice pursued in each type of place. Such data should contribute substantially to our understanding of these practices and therefore should have considerable value for those who plan, fund, or administer nursing services. The data should also be very useful to nurses and nurse trainees, enhancing their understanding of what conditions may be expected in the various kinds of nurse practices.

The data presented and discussed in this report are of three broad types:

- Data on the characteristics of persons who had one or more visits during the year to nurses at particular types of places (Tables 1 and 2). These characteristics include the patients' demographic characteristics

(sex, age, race, marital status, education, family income, perceived health status, activity limitation, region, and place of residence), the number of visits to nurses at such places during the year, types of physicians they saw during the year, and other types of services received.

- Data on characteristics and circumstances of the visits to nurses (Tables 3–5). These include types of service provided in the visit, related services provided, charges for the visits, and sources of payments of charges.
- Data on the visits by demographic characteristics of the patients (Table 6). These demographic characteristics are the same ones used to characterize persons in Table 1, but in this instance they characterize clients in the nurses' average daily case loads rather than the unduplicated group of clients seen over the year.

For a discussion of the sample design, imputation procedures, estimation methods, and statistical hypothesis testing, see Appendix I. For a further definition of terms, see Appendix II.

In the statements of findings in this report, differences among percents, rates, and amounts are noted only if they are statistically significant at the 0.05 level, unless the text indicates otherwise. Care must be taken in using the estimates, as many of them have relatively high standard errors, which can be readily seen by relating the standard error tables (I–VI), found in Appendix I, with the respective estimates tables (1–6). Those estimates with relative standard errors of 30 percent or more are indicated by asterisks (*) in Tables 1 to 6; an attempt has been made to minimize the number of such estimates. As required, those remaining provided closure in the tables or showed important and significant statistical relationships.

Sources and Limitations of the Data

The National Medical Care Utilization and Expenditures Survey (NMCUES) of 1980 was a survey of the health care received by a representative sample of the U.S. civilian noninstitutionalized population during that year. To make the survey as complete and accurate as possible, interviewers left a diary for respondents to record all instances of medical care they received between the five interviews set at 3-month intervals. Thus, the survey serves as a uniquely valuable source of information on health problems and health services, with attendant costs, of the civilian noninstitutionalized population in a recent year.

The ambulatory care nurse visits reported include all those occurring outside hospitals to noninstitutionalized persons as well as visits in hospital outpatient clinics or departments. The reported visits do not include any occurring in emergency rooms, nor do they include visits involving hospital inpatients or nursing home residents. Telephone visits were also excluded.

If a respondent reported that a physician was seen during a visit, then the respondent was not asked whether any other type of practitioner was also seen in the course of the visit; only if a physician was not seen was the respondent asked what types of nonphysician practitioners were seen. Therefore, the numbers of persons receiving services and the numbers of services received from nurses in 1980 are considerably understated in the numbers of persons and visits given in this report. Nurses frequently provide their services in hospitals or nursing homes or along with visits to physicians; thus, a substantial portion of their actual services and clients are not likely to be included in this and other reports based on NMCUES.

NMCUES was designed to provide estimates on utilization and expenditures for various types of medical care, on health insurance coverage and amounts paid by insurers for health care, and on the health of the U.S. civilian noninstitutionalized population. Interviewers also collected specific data relating to the Medicare and Medicaid programs. NMCUES data were obtained from three sources:

- The national household sample.
- Four State Medicaid household samples.
- Medicare and Medicaid administrative records.

All of the data in the present report were derived from the national household survey sample, which included 17,123 persons. Information for all family members was collected from a single household respondent through a set of five interviews approximately 3 months apart.

Data from the national household sample survey complement data collected in the National Health Interview Survey sponsored by the National Center for Health Statistics (NCHS). The data also update and show time trends from 1977 when largely comparable data were obtained through the National Medical Care Expenditure Survey, which was sponsored jointly by the National Center for Health Services Research and the National Center for Health Statistics.

Understanding the data requires knowledge of the sequence of questions by which the data were obtained. For example, the interviewers elicited data relative to all instances of health care received during the reference period through a series of probe questions on the core questionnaire (see Appendix III). Visits to nurses were counted only when they took place during a "medical visit" or during a visit to a hospital outpatient department or clinic. For each reported medical visit or visit to a hospital outpatient department or clinic the interviewer asked whether the person saw a medical doctor on that visit. If the answer was no, then the interviewer asked, "What type of medical person did (PERSON) see?" On the questionnaire the interviewer circled precodes if the answer was chiropractor, podiatrist, optometrist, psychologist, social worker, nurse, or physical therapist; if some other type of practitioner was mentioned, then the interviewer wrote in that type.

Thus, the classifications of nurses and other nonphysician practitioners and those of the medical specialists in this survey are as reported by the respondents. The accuracy of the information is therefore dependent upon the knowledge and understanding of the respondents. There is no evidence supporting the validity of their responses on these items; this report assumes a reasonable degree of validity.

Regarding the medical provider visit, the respondent was asked the reason for the visit, for which the interviewer was given codes. These codes included diagnosis or treatment, general checkup, eye examination for glasses, immunization, family planning, and other. The interviewer then asked, "Was this for a specific condition?" and, if yes, "For what condition did (PERSON) visit

(PROVIDER) on (DATE)?" and "Any other condition?" The interviewer noted each condition mentioned. The next question was, "Did (PROVIDER) discover any condition?" and, if yes, "What was it?" Other conditions mentioned were also noted.

Subsequent questions pertained to some particular tests made during the visit. Detailed questions on charges for the visit and how the charges were paid for were also included in the interview.

Findings on Nurse Visits

The NMCUES yielded estimates of the numbers of civilian noninstitutionalized persons having visits to nurses at the respective types of places during 1980, and of the numbers of visits (Table A). The characteristics of persons with nurse visits and the conditions involved in such visits, in comparison with persons and visits involving other types of practitioners, have been presented in earlier reports (Mugge, 1984, 1985). Some notable characteristics of persons with nurse visits, regardless of place of visit, as pointed out in the 1984 report, included that these persons were drawn disproportionately from the female rather than from the male population; more were drawn from among the children and elderly than from the young or middle-aged adults; and that the representation of white persons was greater than that of black persons, and of non-Hispanics than that of Hispanics. Proportionately, more persons with nurse visits were drawn from the widowed than from other groups. Among adult recipients of care, college graduates were more likely to receive nurse care than nongraduates, but in general low-income persons were more likely than high-income persons to receive the care. Also, utilization was higher for persons with poor health ratings and for those with activity limitations than for others. Finally, nursing services were used most frequently in the North Central Region and more in nonmetropolitan than in metropolitan areas.

Table A

Persons with nurse visits and number of visits, by place of visit: United States, 1980

Place of visit	Persons with visits	Number of visits
All places	[1]29,095,000	109,539,000
Doctor's office or group practice	9,131,000	32,106,000
Doctor's clinic	1,829,000	5,843,000
Neighborhood or family health center	3,450,000	6,051,000
Company clinic	2,035,000	6,751,000
School clinic	3,914,000	8,302,000
Other clinic	3,221,000	9,013,000
Patient's home	1,794,000	26,595,000
Laboratory	1,047,000	1,856,000
Hospital outpatient department	2,946,000	5,969,000
Other place	2,806,000	5,859,000
Unknown place	732,000	1,193,000

[1]The total exceeds the number of persons with visits in "all places" because some persons had visits in more than one type of place.

The 1985 report pointed out a number of findings about nurse visits, including that the health conditions occasioning them were most often diseases of the respiratory system (24 percent), diseases of the circulatory system (23 percent), and injury and poisoning (10 percent). In 25 percent of the nurse visits no illness conditions were reported. Charges for nurse visits were lower than any other kind in the report, averaging $14 per visit. The average number of nurse visits for persons who had them was 3.7 during the year, but 62 percent of all persons with nurse visits had only one during the year.

The survey data show large differences among the groups of persons with visits and in characteristics of the visits, depending on the location of the visit. For purposes of this analysis, the total distributions of persons with nurse visits and the total set of nurse visits themselves, as presented in the "all places" column of each table, are taken as the norm. The data on nurse visits and persons with such visits in the respective settings are compared with the all places data, and their characteristics are noted in the text only when they are significantly different (at the 0.05 level) from comparable data in the "all places" column.

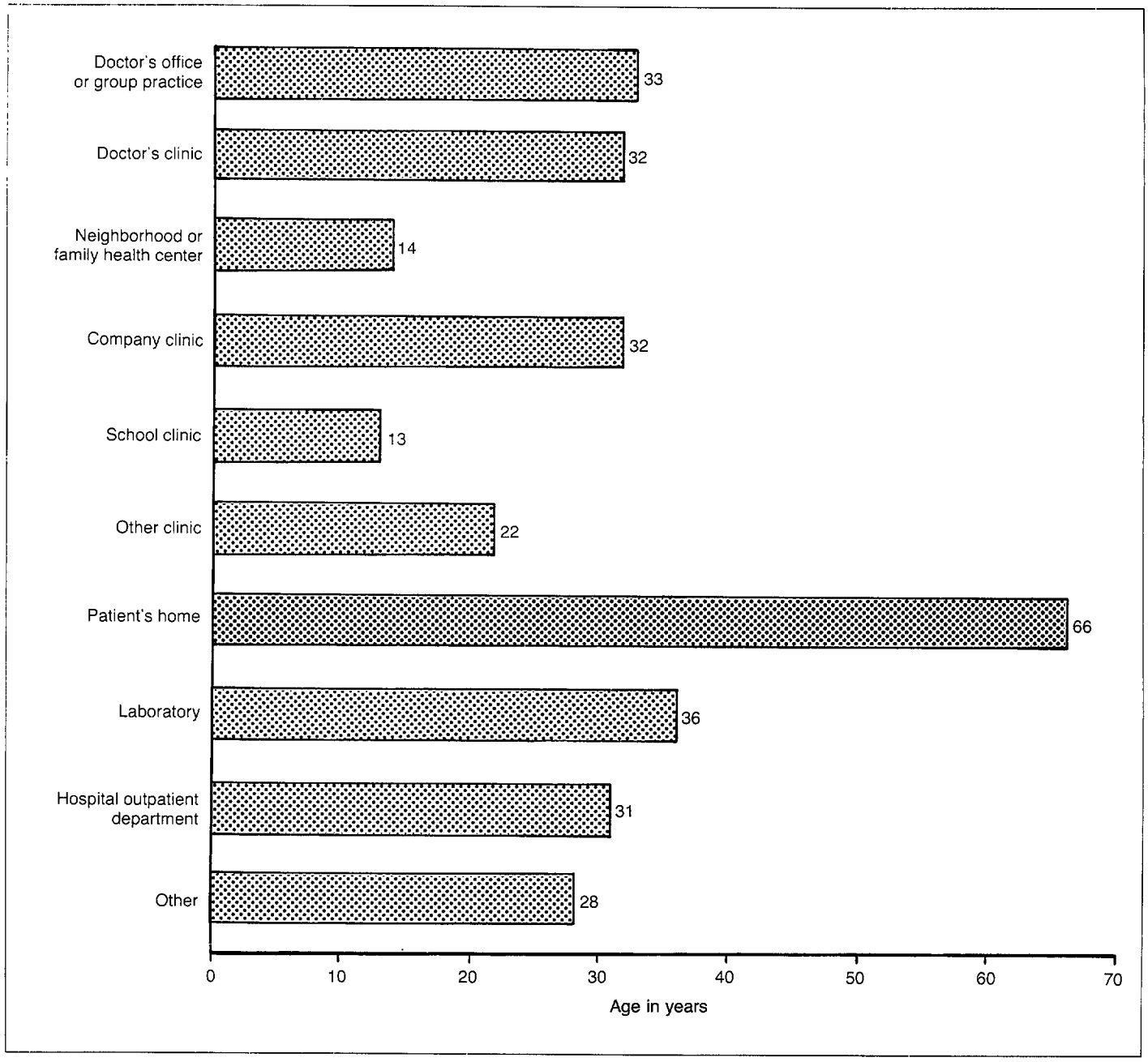
Each of the data Tables 1–6 shows the percent estimates in the respective columns by place of visit. These estimates were marked by asterisks (*) whenever they differed significantly from the corresponding estimates in the all places column. (This was not done for the unknown place column or for the medians.) The method for determining which differences are significant is presented in Appendix I. Comparing the estimates with those for all places is a conservative method for determining when differences are significant; more cases of significance would have been found had the estimates been compared with "all other" cases than with the total (all places) column.

Doctors' Offices or Group Practices

Doctors' offices, including both those for doctors practicing alone and those in group practice, were the places where the largest number of persons—an estimated 9,131,000 in 1980—had visits with nurses (Table 1). These persons tended to be older than average, with a median age of 33 years (Figure 1). Relatively few

Figure 1

Median ages of persons having nurse visits, by place of visit: United States, 1980



were black persons. Considering only persons 17 years of age and over, a relatively large proportion were married, and relatively few had never married. They were close to average in terms of education, health status, and activity limitation, but above average in family income (Table 1).

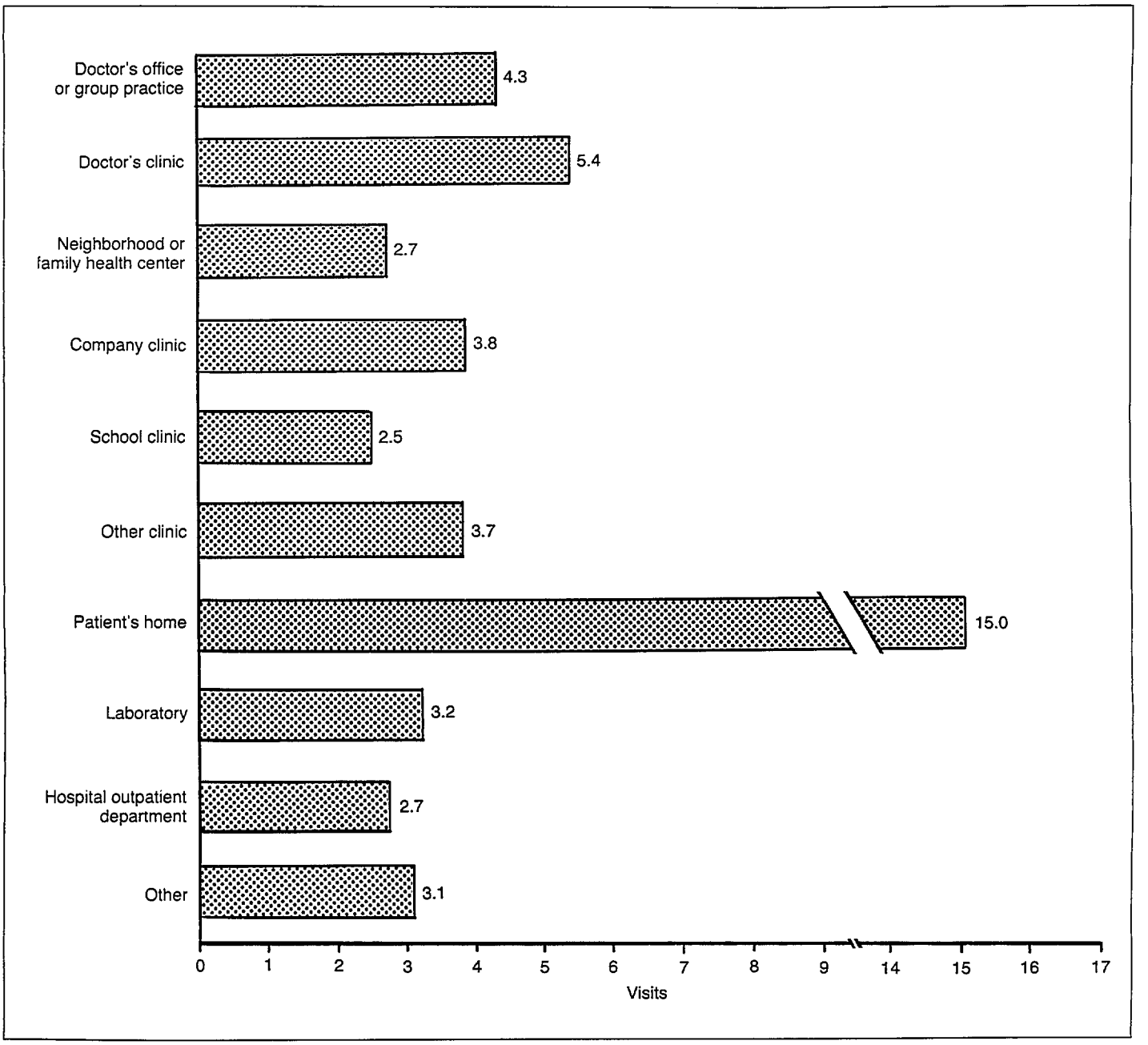
Relatively few of these persons lived in the Northeast (Table 1). They had an average of 4.3 visits in doctors' offices or group practices during the year, which was a little above average for all persons having nurse visits (Figure 2). In addition, 62 percent saw a general practitioner physician at least once during the year, and 91 percent saw some type of physician (Table 2).

An estimated 32,106,000 nurse visits took place in doctors' offices or group practices. Diagnosis or treatment was the reason for 78 percent of the visits, and immunization for the next largest group, 13 percent (Table 3). For 22 percent of the visits no condition was reported. The average charge for the visits was $10.60, below the average of $13.71 for all visits; for 10 percent of the visits there was no charge (Figure 3 and Table 4). Forty-eight percent of the charges were paid by the patient or family, and 21 percent were paid by commercial insurance plans. Relatively little of the charges were paid by Medicare, Medicaid, or State or local governments (Table 5).

Table 6 presents the distributions of visits by the characteristics of clients. These distributions show the average daily clientele, rather than the unduplicated clientele over the year as shown in Tables 1 and 2.

Figure 2

Average number of visits of persons having nurse visits, by place of visit: United States, 1980



On the average the patients each day tended to be young, with a median age of 30 years, compared with the overall median age of 40 years for persons with nurse visits in any place (Table 6). Relatively few were black persons, and relatively few were widowed. They were above average in family income level and had better than average health status and less activity limitation than the average group of patients.

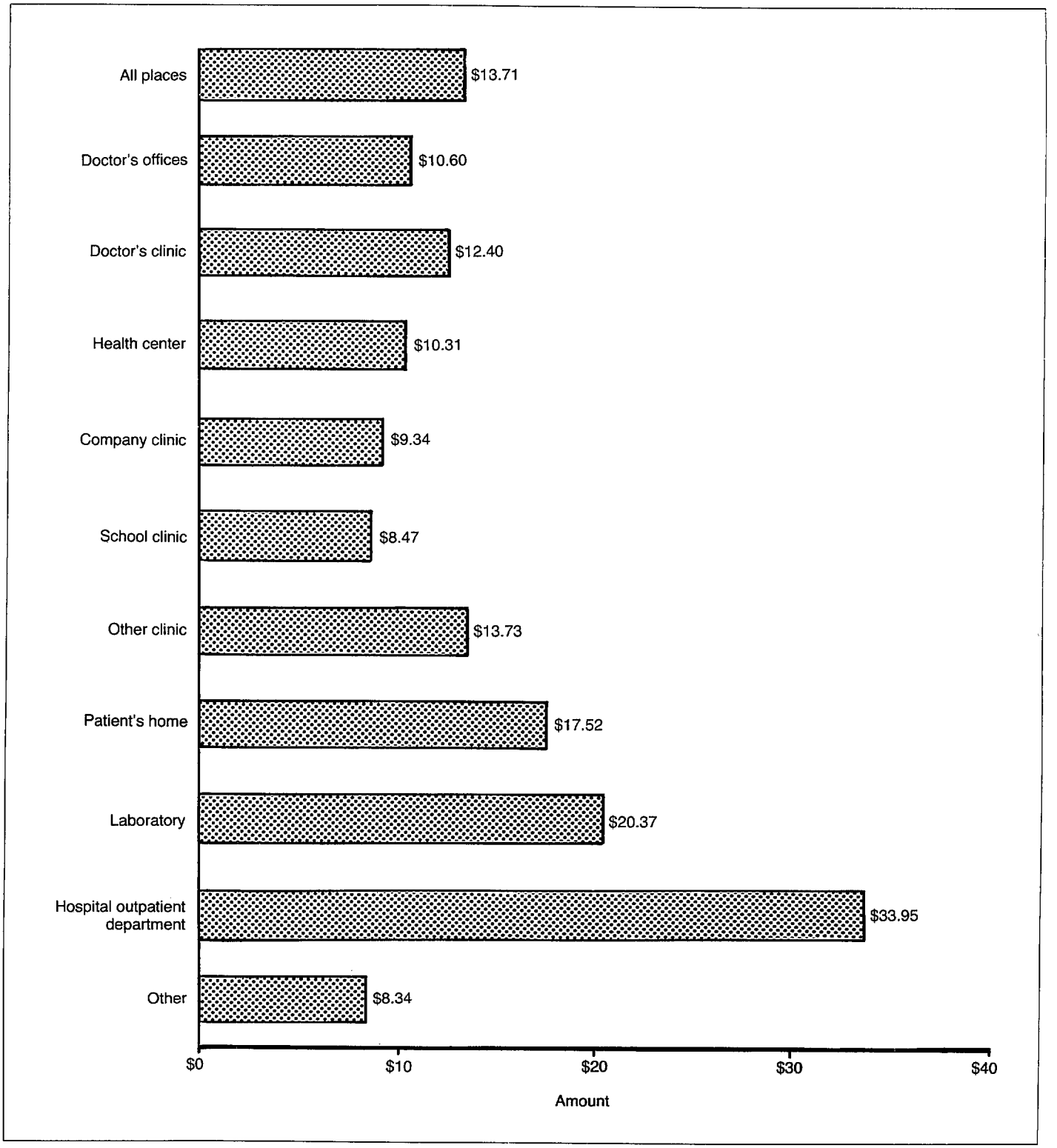
Doctors' Clinics

Persons seeing nurses in doctors' clinics and persons seeing nurses in doctors' offices and group practices shared similar characteristics (Tables 1 and 2). They were similar in age (Figure 1 and Table 1), race, marital status, education, family income, perceived health status, and activity limitation (Table 1). They tended to live in the North Central Region, and relatively few lived in the central cities of standard metropolitan statistical areas (SMSA's). They had a higher than average number of visits to nurses over the year—an average of 5.4 visits, compared with the average of 3.7 visits per person in all places (Figure 2).

As with the persons involved, the distributions of visits by characteristics of clients were very similar to those of visits to nurses in doctors' offices or group practices, i.e., by age, race, marital status, education, family income, health status, and activity limitation

Figure 3

Average charge for nurse visits, by place of visit: United States, 1980



(Table 6). Relatively few such visits took place in the Northeast or the South, or in the central cities of SMSA's.

Patients and their families paid only about one-third of the charges for nurse visits in doctors' clinics, compared with nearly half of the charges they paid for visits in doctors' offices or group practices (Table 5).

Neighborhood and Family Health Centers

Persons with visits to nurses tended to be quite young; their median age was 14 years (Figure 1 and Table 1). They were considerably below average in educa-

tional and income levels (Table 1). They were relatively scarce in the North Central Region; about half of them lived in the South. Relatively few lived in the suburban parts of SMSA's, and a relatively high number lived in rural areas outside SMSA's. Their average number of visits over the year was relatively low (2.7). A relatively large number visited pediatricians during the year, and relatively few visited other specialists (Table 2).

Considerably more than half of the visits to nurses in neighborhood and family health centers were reported not to have involved health complaints, which is consistent with the finding that relatively large percents of the visits involved immunizations and general checkups (Table 3). A lab test was performed in more than one-fifth of the visits.

For more than half of these visits there was no charge, and relatively large proportions of the charges were paid by State or local governments or by Medicaid (Tables 4 and 5).

Considering the visits by the demographic characteristics of the persons involved, similar findings result. The visits tended to involve young clients—the median age was 20 years—and persons with comparably less education and low family incomes (Table 6). Relatively many of the visits were in the South, and relatively few were in SMSA's outside the central cities.

Company Clinics

Persons seeing nurses in company clinics were predominantly male and in the ages of highest employment: virtually all were 17 through 64 years of age (Figures 1 and 4 and Table 1). Their educations and incomes were above average for all persons with nurse visits, and hardly any had activity limitations (Table 1). A relatively high proportion of these persons were in the Northeast, and relatively few were in the West; they were frequently found in central cities of SMSA's and seldom in nonmetropolitan areas.

The average charge for visits in company clinics was relatively low ($9.34), and approximately half of these visits did not involve any reported charges (Figure 3 and Table 4).

The "average daily caseload," as measured by the distributions of visits by the characteristics of the persons involved, was not greatly different from the caseload of persons with any nurse visits in company clinics during the year, as described in Table 1 (Table 6).

School Clinics

Persons with visits to nurses in school clinics reflected, as expected, the characteristics of students in school. They were mostly children, having an average age of 13 years (Table 1). Among those 17 years of age and over, relatively few were married. Educational attainment was rather high for those 17 years of age and over; they had a median of almost 2 years of college. Perceived health status for this group was high, and few had activity limitations. A relatively high proportion of these persons were in the Northeast, and relatively few were in the South or West. Approximately two-thirds of those with nurse visits in school clinics had only one visit during the year. About one-fourth saw a pediatrician during the year, but only about seven-tenths saw any type of physician during the year (Table 2).

For about one-half of the nurse visits in school clinics no charges were reported (Table 4). The average charge for such visits was only $8.47 (Figure 3). The distributions of visits according to patient characteristics were similar to the characteristics of the unduplicated patient load as shown in Table 1 (Table 6).

Other Clinics

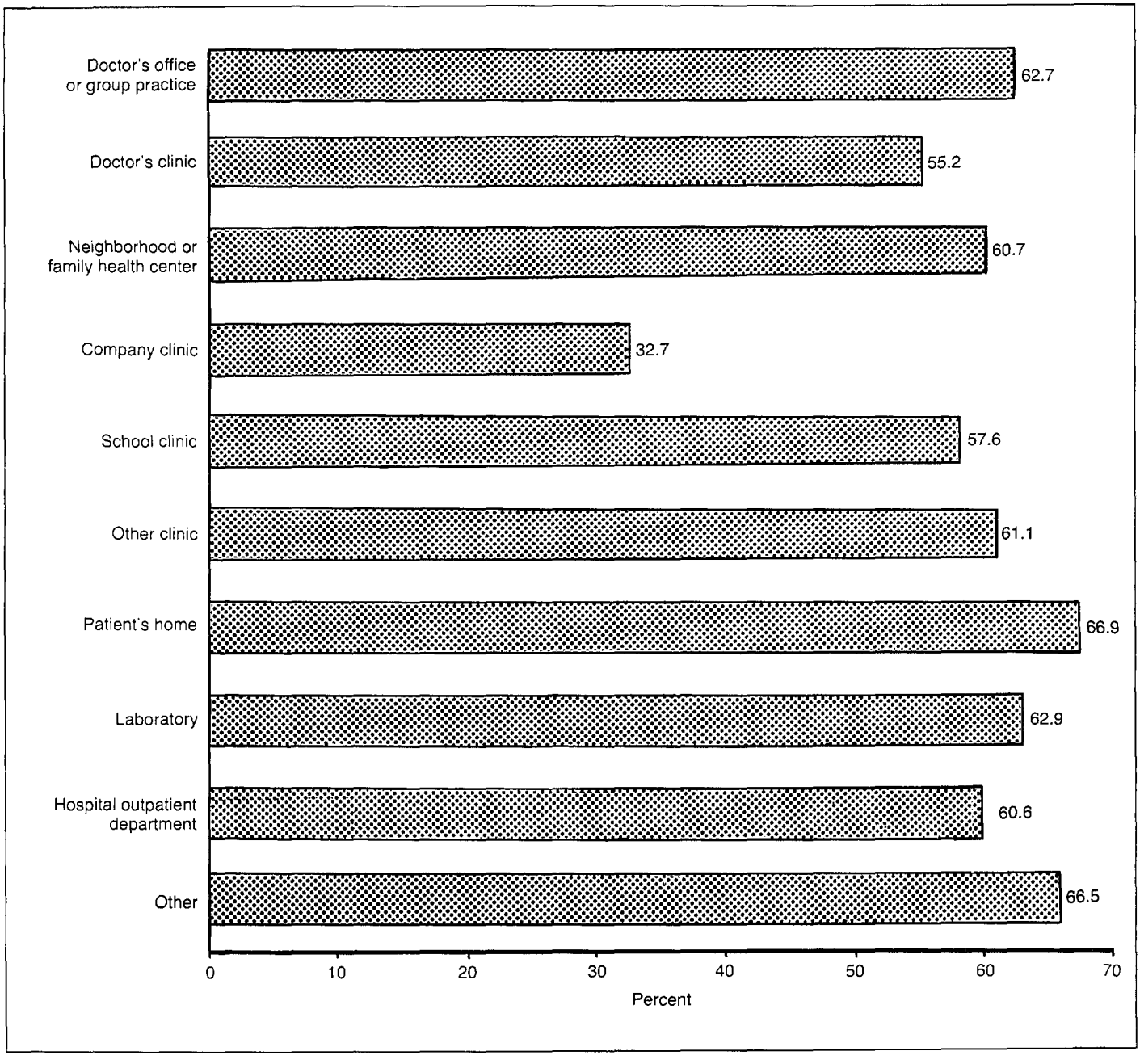
The statistics on visits to nurses in other clinics and on persons with visits there are barely distinguishable from those of the average group of patients with nurse visits. Their median age was lower than that of the total group (22 compared with 26 years of age), and their median family income was lower (an estimated $16,792 compared with $19,711 for all cases), but no other differences appear to be both statistically significant and meaningful (Figure 1 and Table 1).

Patients' Homes

We assume that nurses providing services in patients' homes would largely include those in visiting nurse services and those on private duty assignments. Patients visited in their homes by nurses tended to be quite different from all other persons with nurse visits. Primarily, they tended to be aged; their median age was 66 years; 55 percent were 65 years of age and over, and 33 percent were 75 years of age and over (Figure 1 and Table 1). They were predominantly female (67 percent; see Figure 4), which accords with the fact that women tend to live longer than men, and the fact that aged women greatly outnumber aged men in the society (U.S. Bureau of the Census, 1984). A relatively high proportion of the home patients were widowed. Their educations were relatively low on the average, which is true in general for the aged population (U.S. Bureau of the Census, 1981). Their family incomes were relatively low (an estimated median of $12,550). Their perceived health status was relatively low; when persons with "excellent" health are given a rating of 4, those with "good" health a rating of 3, those with "fair" health a rating of 2, and those with "poor" health a rating of 1, the

Figure 4

Percent female among persons having nurse visits, by place of visit: United States, 1980



persons with home visits had an average score of 2.6, compared with an overall average for nurse patients of 3.3. And about half of the persons with nurse visits in the home were reported to be limited in activity (Table 1).

Persons with home visits from nurses tended to have many such visits. They averaged 15.0 visits over the year, compared with an overall average of 3.7 visits per person for those with any nurse visits (Figure 2 and Table 1).

Persons with nurse visits in the home were most likely to have emergency room visits during the year; an estimated 36 percent had such visits, compared with only 23 percent for all persons with nurse visits (Table 2). About nine-tenths of all nurse visits in the home involved diagnosis or treatment (Table 3).

The home visits were more costly than most other types. Charges for home visits averaged $17.52 even though no charge was reported for about two-fifths of the visits (Figure 3 and Table 4).

Table 6 provides the distributions of visits by characteristics of the persons involved and therefore tends to describe the average daily caseload, as compared with the unduplicated annual caseload described in Table 1. The average daily caseload includes persons whose age is seen to be much older, with a median of 77 years

(Table 6), compared with the median of 66 years of age for persons included in the unduplicated annual caseload (Table 1). The daily caseload was also much more likely to include females—82 percent, compared with the 67 percent of females found in the annual caseload. Similarly, the average daily caseload showed persons with a health status rating of only 1.8, with 84 percent having activity limitations, compared with the annual home care caseload, which showed persons with a health status rating of 2.6, with only 47 percent having reported limitation of activity (Tables 6 and 1). These data demonstrate, not surprisingly, that the nurses tended to spend most of their time with that part of the caseload that included persons who were oldest and poorest in health.

Laboratories

Because of the small size of this part of the sample, little can be stated positively on the statistics on visits to nurses in laboratories or on persons involved in such visits. The data do show that this group tended to be older than average for all persons with nurse visits (Figure 1 and Table 1); their incomes were above average (Table 1); and they were more apt than most to have seen a physician during the year, especially internists and obstetrician-gynecologists (Table 2). These visits were relatively costly, but they usually involved laboratory tests (Figure 3 and Tables 3 and 4).

Hospital Outpatient Departments

Persons with visits to nurses in hospital outpatient departments during 1980 were somewhat older, on average, than nurses' patients in general (Figure 1 and Table 1). In other respects their demographic characteristics were not different from the general group of nurse patients (Figure 4 and Table 1). However, their average number of visits during the year was relatively low—2.7, compared with the overall average of 3.7 visits (Figure 2 and Table 1).

Persons with visits to nurses in hospital outpatient departments were relatively frequent users of emergency rooms and patients of internists and obstetrician-gynecologists. A large proportion of these persons also saw physicians in hospital outpatient departments (Table 2). X rays, laboratory tests, and other diagnostic procedures were relatively frequently involved in their visits (Table 3).

The average charge for nurse visits in hospital outpatient departments was much higher than for nurse visits in any other site—an estimated $34 (Figure 3 and Table 4). Blue Cross and Blue Shield and other prepaid plans were relatively frequent payers for such services (Table 5).

Other and Unknown Places

The data show no special circumstances of these two residual groups that appear worthy of special comment.

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List of Detailed Tables

Table 1

Number of persons with health care visits to nurses and percent distribution by selected characteristics, according to place of visit: United States, 1980

Characteristic	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
					Number of persons in thousands							
All persons	29,095	9,131	1,829	3,450	2,035	3,914	3,221	1,794	1,047	2,946	2,806	732
					Percent distribution							
All persons	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sex												
Male	40.8	37.3	44.8	39.3	[1]67.3	42.4	38.9	[1]33.1	37.1	39.4	[1]33.5	47.5
Female	59.2	62.7	55.2	60.7	[1]32.7	57.6	61.1	[1]66.9	62.9	60.6	[1]66.5	52.5
Age												
Under 6 years	13.7	10.5	12.1	37.6	[1,*]0.6	[1]6.3	[1]23.0	[1]6.3	[1,*]3.6	14.8	12.5	*13.0
6–16 years	19.9	16.2	16.1	17.5	[1]–	[1]60.7	15.9	[1,*]4.4	[1,*]7.0	[1]11.0	19.1	16.1
17–24 years	14.3	[1]11.4	10.7	[1]9.4	[1]22.6	[1]23.0	17.2	[1,*]4.8	15.9	[1]10.4	13.7	*15.2
25–44 years	20.5	22.2	22.4	[1]12.8	[1]47.0	[1]7.7	19.7	14.3	[1]33.1	[1]28.9	17.6	*16.7
45–64 years	16.9	[1]22.4	[1]26.6	[1]9.1	[1]29.3	[1,*]1.9	[1]11.4	15.5	[1]25.5	17.3	19.8	19.3
65–74 years	9.4	11.9	8.7	10.9	[1,*]0.6	[1,*]0.4	10.9	[1]21.6	*11.0	9.4	10.2	*14.5
75 years and over	5.4	5.3	*3.3	[1,*]2.7	[1]–	[1]–	[1,*]1.9	[1]33.1	*3.8	8.2	*7.2	*5.2
Median age[2]	26	33	32	14	32	13	22	66	36	31	28	27
Race												
White	89.2	[1]94.4	93.1	79.3	90.0	91.9	82.4	88.2	92.8	82.3	[1]95.3	93.3
Black	8.6	[1]3.1	[1,*]3.3	19.4	10.0	5.7	*14.6	9.8	*5.8	14.2	[1,*]3.6	*2.1
Other	2.2	*2.5	*3.6	*1.3	–	*2.4	*3.0	*2.0	*1.4	*3.6	*1.1	*4.6
Marital status (for persons 17 years of age and over)												
Married	55.9	[1]65.0	[1]67.1	49.0	54.4	[1]20.4	54.0	[1]43.0	67.3	59.9	57.9	56.3
Widowed	11.9	11.4	12.2	15.8	[1,*]4.1	[1]–	8.3	[1]36.1	*7.3	14.5	13.9	*15.7
Separated or divorced	10.4	8.7	*6.3	17.1	12.6	14.0	*8.6	*9.5	9.0	11.3	[1,*]5.2	*11.6
Never married	21.5	[1]14.9	14.4	17.0	29.0	[1]65.6	27.4	[1,*]11.4	*16.5	[1]14.3	22.3	*16.4
Unknown	*0.3	–	–	*1.0	–	–	*1.7	–	–	–	*0.7	–
Years of school completed (for persons 17 years of age and over)												
None or 1–8	15.8	15.8	16.9	19.5	[1,*]3.8	[1,*]2.1	10.6	[1]40.5	*13.0	20.9	13.0	*14.2
9–11	15.8	14.2	*9.8	[1]26.7	11.6	22.2	20.6	14.1	*10.8	13.6	16.9	*13.5
12	34.0	36.5	42.2	38.1	41.2	[1]14.7	29.9	[1]20.3	37.8	32.3	34.1	41.4
13–15	19.4	18.6	19.2	[1,*]9.2	19.8	[1]35.7	19.6	13.0	*11.7	24.7	20.8	*18.3
16 or more	14.9	14.8	11.9	[1,*]6.5	23.7	[1]25.3	19.3	12.1	[1]26.7	[1,*]8.6	15.3	*12.6
Median years completed[3]	12.5	12.5	12.6	12.1	12.8	13.9	12.6	11.0	12.7	12.5	12.6	12.5
Family income in 1980												
Less than $5,000	8.3	[1]5.5	*5.3	12.9	[1,*]0.6	8.9	10.3	[1]19.8	[1,*]2.7	11.6	10.5	*12.6
$5,000–$14,999	28.4	24.8	[1]20.4	[1]42.1	[1,*]12.8	22.8	34.6	35.5	27.2	30.7	32.0	24.3
$15,000–$24,999	28.2	28.1	36.4	28.4	37.8	26.6	28.0	[1]17.1	25.6	30.4	27.7	33.8
$25,000–$34,999	17.0	18.3	17.1	[1]11.5	22.4	22.3	14.1	11.6	15.6	17.1	[1]11.1	14.4
$35,000 or more	18.2	[1]23.2	20.8	[1]5.0	[1]26.4	19.5	[1]13.1	16.0	[1]28.9	[1]10.2	18.7	*14.9
Median family income[3]	$19,711	$22,740	$22,907	$13,296	$24,730	$22,943	$16,792	$12,550	$22,720	$17,000	$16,981	$17,021

See footnotes at end of table.

Table 1—Continued

Number of persons with health care visits to nurses and percent distribution by selected characteristics, according to place of visit: United States, 1980

Characteristic	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
						Percent distribution						
Perceived health status												
Excellent	46.4	45.4	40.6	48.1	45.6	[1]59.1	47.8	[1]31.1	47.9	39.9	45.2	42.1
Good	37.5	36.7	41.0	36.9	44.1	34.1	38.7	[1]24.1	35.9	41.3	39.9	38.9
Fair	11.3	13.1	13.4	11.4	8.7	[1]6.5	11.2	[1]20.7	12.4	13.1	11.3	15.1
Poor	4.8	4.8	*5.1	*3.6	[1,*]1.7	[1,*]0.4	[1,*]2.3	[1]24.0	*3.8	5.6	*3.7	*3.8
Average rating	3.3	3.2	3.2	3.3	3.3	3.5	3.3	[1]2.6	3.3	3.2	3.3	3.2
Limitation of activity												
Yes	12.4	11.8	13.6	11.7	[1,*]2.8	[1]6.3	*8.9	[1]47.4	*13.1	14.8	11.0	*11.0
No or unknown	87.6	88.2	86.4	88.3	[1]97.2	[1]93.7	91.1	[1]52.6	86.9	85.2	89.0	89.0
Region of residence												
Northeast	16.8	[1]9.0	[1,*]3.5	11.0	[1]37.1	[1]37.7	11.3	25.7	*11.1	18.6	14.9	*12.6
North Central	29.9	34.7	[1]51.8	[1]14.8	24.5	28.1	[1]16.4	35.3	31.0	29.8	32.5	48.3
South	32.3	32.7	20.7	[1]55.6	30.4	[1]20.4	44.9	22.6	39.2	27.8	25.3	22.7
West	21.0	23.7	24.0	18.6	[1]8.0	[1]13.8	27.4	16.4	18.6	23.8	27.3	*16.5
Place of residence												
In SMSA												
In central city	25.2	25.0	[1]14.7	21.6	[1]39.7	24.2	24.6	20.7	39.4	28.6	24.4	19.7
Not in central city	38.4	38.3	31.8	[1]26.1	44.1	48.7	36.9	42.0	38.8	37.5	34.3	50.6
Not in SMSA												
Urban	16.4	16.3	23.7	20.2	[1,*]5.7	*9.8	19.9	24.6	*14.0	16.4	22.4	*6.0
Rural	20.0	20.5	29.8	[1]32.1	[1]10.5	17.3	18.5	[1]12.8	[1,*]7.8	17.5	18.9	23.7
Number of visits with nurses in such place in 1980												
1	61.6	[1]54.2	[1]48.4	61.2	51.3	[1]67.8	[1]52.8	[1]29.4	56.9	55.1	57.9	30.7
2	15.5	14.2	16.4	20.1	18.1	20.2	[1]21.9	12.5	14.7	20.0	17.7	*16.0
3 or 4	9.3	11.0	*6.3	10.6	12.5	8.4	12.7	8.0	*12.8	[1]15.5	13.2	*7.4
5–9	5.8	7.9	*9.2	4.5	9.6	[1,*]1.6	6.8	[1]14.6	*7.1	5.8	5.5	*12.0
10–19	4.2	[1]8.2	[1]10.7	[1,*]1.1	*4.8	[1,*]0.7	*2.0	[1]15.6	*6.2	[1,*]1.8	*2.0	20.9
20 or more	3.7	4.6	*9.0	*2.5	*3.8	[1,*]1.2	*3.8	[1]20.0	*2.4	*1.8	*3.7	*13.0
Average	3.7	4.3	5.4	[1]2.7	3.8	2.5	3.7	[1]15.0	3.2	[1]2.7	3.1	8.5

[1]Figure is significantly different from the corresponding figure in the "All places" column.
[2]Tests of significance of differences were not made with respect to median age.
[3]Tests of significance of differences were not made with respect to median school years and median family income.

NOTE: For the standard errors of estimates in this table, see Table I.

SOURCE: National Medical Care Utilization and Expenditure Survey.

Table 2

Number of persons with health care visits to nurses and percent distribution by physician characteristics, according to place of visit: United States, 1980

Physician characteristic	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
					Number of persons in thousands							
All persons	29,095	9,131	1,829	3,450	2,035	3,914	3,221	1,794	1,047	2,946	2,806	732
					Percent distribution[1]							
All persons	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Types of physician seen												
General practitioner	55.6	[2]61.8	63.6	57.0	55.5	[2]43.5	49.9	58.4	64.5	56.5	54.7	50.8
Specialist in:												
Internal medicine	14.3	17.1	19.8	[2]7.9	16.1	[2]5.2	13.0	[2]24.7	[2]25.0	[2]23.0	10.7	*11.7
Pediatrics	12.9	12.8	10.5	[2]18.8	[2]–	[2]24.1	10.9	[2,*]6.7	*7.6	11.1	13.0	15.0
Obstetrics and gynecology	11.8	13.8	13.8	[2]6.4	10.6	[2]6.8	14.0	[2,*]5.2	[2]29.1	[2]18.9	[2]6.1	*15.2
Opthalmology	12.5	14.5	11.8	9.5	12.4	9.3	10.6	[2]20.7	18.3	15.2	9.3	*9.3
Orthopedic surgery	6.8	7.3	*6.9	[2,*]3.8	11.1	6.9	8.5	10.1	*6.3	5.2	5.2	*12.1
All other specialties	22.7	[2]30.4	26.4	[2]13.0	23.5	18.2	[2]16.5	[2]32.3	[2]34.5	24.2	20.1	38.8
Unknown type of specialty	6.1	7.3	[2]13.0	4.5	*7.6	4.2	*5.9	*6.7	*12.6	6.3	*4.5	*5.6
Unknown whether general practitioner or specialist	8.7	7.3	*5.2	10.5	10.3	5.0	9.5	[2]16.5	*8.5	[2]16.2	9.1	*4.2
Other types of service received												
Emergency room	23.3	19.3	[2]14.8	23.9	20.8	19.8	24.3	[2]35.7	29.3	[2]35.0	23.2	*15.7
Hospital outpatient department (physician seen)	15.0	[2]10.3	11.2	[2]9.0	[2]8.4	12.8	14.7	17.0	*14.5	[2]47.7	13.0	*12.3
Physician visit (physician seen)	80.1	[2]90.5	[2]92.5	75.5	78.4	[2]69.5	[2]70.7	84.2	[2]90.8	73.1	79.8	82.6

[1]Percents total more than 100.0 in each column because many persons visited more than one kind of physical during the year.
[2]Figure is significantly different from the corresponding figure in the "All places" column.

NOTE: For the standard errors of estimates in this table, see Table II.

SOURCE: National Medical Care Utilization and Expenditure Survey.

Table 3

Number of health care visits to nurses and percent distribution by services, according to place of visit: United States, 1980

[Data are based on household interviews of the civilian noninstitutionalized population.]

Service	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
						Number of visits in thousands						
All visits	109,539	32,106	5,843	6,051	6,751	8,302	9,013	26,595	1,856	5,969	5,859	1,193
						Percent distribution						
All visits	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
First type of service												
Diagnosis or treatment	76.7	77.8	79.6	[1]38.3	82.6	80.6	62.6	[1]91.3	69.1	75.2	[1]55.5	73.0
General checkup	3.9	2.4	[1,*]1.7	[1]9.5	*6.0	*3.1	*5.9	*2.6	*2.9	*7.3	*7.2	*2.1
Immunization	9.4	12.6	*7.9	[1]35.5	[1,*]3.0	*5.4	16.8	[1,*]0.7	*7.7	*7.1	11.1	*8.2
Other types	9.8	7.1	*10.8	[1]16.7	8.2	10.8	14.6	*5.3	20.3	9.9	[1]26.2	14.1
Visits with no health condition reported	24.7	21.5	*19.8	[1]59.2	18.4	20.4	33.8	*17.8	26.2	22.2	[1]43.3	27.0
X ray taken in visit	1.3	1.0	*1.1	*0.7	*1.7	*0.5	*1.8	[1,*]0.1	[1,*]9.4	[1]7.3	*1.0	–
Laboratory test made	13.5	13.0	*16.8	[1]22.8	9.8	[1,*]7.0	15.6	[1,*]4.6	[1]61.8	[1]34.4	17.9	*11.1
EKG, EEG, or other diagnostic procedure done	2.9	2.3	*2.1	*5.5	*2.6	*1.9	5.2	[1,*]0.2	*2.9	[1]12.4	*5.0	–
Nurse worked for a doctor?												
Yes	57.0	[1]94.1	[1]94.5	47.1	56.1	[1,*]18.6	48.7	[1]38.8	69.1	–	[1]29.8	68.9
No	37.5	[1]5.9	[1,*]5.5	52.9	43.9	[1]81.4	51.3	[1]61.2	30.9	–	[1]70.2	*31.1
Inapplicable	5.4	–	–	–	–	–	–	–	–	100.0	–	–

[1]Figure is significantly different from the corresponding figure in the "All places" column.

NOTES: For the standard errors of estimates in this table, see Table III. Figures may not add to 100.0 because of rounding.

SOURCE: National Medical Care Utilization and Expenditure Survey.

Table 4

Number of health care visits to nurses and percent distribution by characteristics, according to place of visit: United States, 1980

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix I. Definitions of terms are given in Appendix II.]

Characteristic	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
						Number of visits in thousands						
All visits	109,539	32,106	5,843	6,051	6,751	8,302	9,013	26,595	1,856	5,969	5,859	1,193
						Percent distribution						
All visits	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Charge for visit												
No charge	30.7	[1]10.2	[1,*]9.9	[1]54.1	[1]50.1	[1]52.7	33.5	42.0	[1]5.4	[1]14.9	[1]55.4	27.4
$3.00 or less	7.1	13.0	*4.3	*5.5	*3.9	3.6	*10.1	*3.5	[1]–	*3.3	*7.6	*1.0
$3.01–$4.99	5.7	10.4	*20.5	[1,*]1.4	[1,*]1.7	*4.6	*5.1	[1,*]1.5	[1,*]0.6	[1,*]0.2	[1,*]1.3	*12.9
$5.00–$9.99	20.4	[1]36.1	*21.4	[1]8.3	14.3	[1]11.8	*27.9	[1]7.4	37.5	17.2	*12.4	*14.4
$10.00–$14.99	11.4	14.2	[1]20.8	[1]6.8	7.8	[1]7.4	[1]5.8	9.8	*12.0	*20.0	[1,*]5.4	*24.7
$15.00–$19.99	6.0	5.3	*8.4	5.1	7.0	4.9	4.1	7.9	*9.0	5.5	*3.7	*3.9
$20.00–$24.99	3.2	2.9	*5.4	5.2	*2.1	[1]1.7	*2.0	2.3	*5.1	*7.8	*3.7	*3.8
$25.00–$29.99	3.8	2.2	*1.4	*3.0	1.8	2.2	[1,*]1.4	*8.1	*7.1	*3.3	*3.9	*1.8
$30.00–$39.99	3.1	2.0	*1.8	4.1	*3.9	*6.7	2.5	*2.6	[1]9.1	[1]6.6	2.0	*1.1
$40.00–$49.99	2.8	[1]0.6	*1.9	*1.3	4.5	*1.4	*2.7	*5.6	*5.5	4.1	*1.3	*4.6
$50.00–$99.99	4.3	2.4	*3.3	3.8	*2.5	2.8	2.8	*7.7	*7.8	8.9	[1]1.7	*3.3
$100.00 or more	1.5	[1]0.8	*0.8	*1.3	[1,*]0.3	[1,*]0.1	*2.0	*1.5	*0.8	[1]8.0	*1.6	*1.0
						Amount in millions						
Total charges	$1,502	$340	$72	$62	$63	$70	$124	$466	$38	$203	$49	$14
						Charge in dollars						
Average charge per visit	$13.71	[1]$10.60	$12.40	$10.31	[1]$9.34	[1]$8.47	$13.73	$17.52	[1]$20.37	[1]$33.95	[1]$8.34	$11.94
Median charge per visit[2]	6	7	8	0	0	0	6	7	10	13	0	8
Median charge for visits with any charges	10	7	9	15	12	11	6	18	12	15	10	10

[1]Figure is significantly different from the corresponding figure in the "All places" column.
[2]Tests of significance of differences were not made for the median charges.

NOTE: For the standard errors of estimates in this table, see Table IV.

SOURCE: National Medical Care Utilization and Expenditure Survey.

Table 5

Total charges for health care visits to nurses and percent distribution by sources of payments, according to place of visit: United States, 1980

[Data are based on household interviews of the civilian noninstitutionalized population. The survey design, general qualifications, and information on the reliability of the estimates are given in Appendix I. Definitions of terms are given in Appendix II.]

Source of payment	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
						Amounts in millions of dollars						
Total charges	$1,502	$340	$72	$62	*$63	*$70	$124	$466	$38	$203	$49	*$14
						Percent distribution						
Total charges	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Medicare	12.7	[1]4.3	[1,*]3.5	[1,*]1.2	[1]–	[1]–	[1,*]3.7	*32.4	[1,*]4.1	[1,*]5.2	*8.4	*8.4
Medicaid	9.1	[1,*]3.8	[1,*]3.2	[1]25.0	[1]–	[1]–	*6.7	*15.8	[1,*]1.2	*9.1	*9.7	–
State or local government	7.5	[1,*]0.4	[1,*]0.4	[1]29.4	*3.8	*11.0	*24.9	*6.5	[1,*]1.5	[1,*]1.4	*34.4	*7.1
Commercial insurance plans	*17.7	20.9	23.9	[1,*]1.5	*24.2	[1,*]0.6	[1,*]2.4	*25.2	22.8	*14.1	[1,*]2.3	*18.3
Blue Cross and Blue Shield	6.1	9.3	*13.4	[1,*]0.5	[1]–	[1,*]0.4	[1,*]1.8	[1,*]1.3	*11.2	[1]18.2	[1,*]0.2	*4.3
Other prepaid plans	7.3	7.9	*12.0	*23.6	*5.4	*5.7	*10.0	[1,*]0.3	*11.7	[1]15.0	*4.7	*12.1
Patient or family	25.5	[1]48.0	33.5	[1]12.5	[1,*]2.1	[1,*]5.3	*40.7	*14.5	38.9	19.4	[1,*]13.2	*22.8
All other sources	13.1	[1,*]5.0	*10.1	[1,*]2.7	[1]61.9	[1]75.4	*9.6	[1,*]3.2	*8.7	16.8	*23.6	*27.0
Unknown source or unpaid	*0.9	0.3	–	*3.6	*2.6	*1.6	*0.2	*0.8	*0.1	*0.9	*3.4	–

[1]Figure is significantly different from the corresponding figure in the "All places" column.

NOTE: For the standard errors of estimates in this table, see Table V.

SOURCE: National Medical Care Utilization and Expenditure Survey.

Table 6

Number of health care visits to nurses and percent distribution by selected characteristics, according to place of visit: United States, 1980

[Data are based on household interviews of the civilian noninstitutionalized population.]

Characteristic	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
						Number of visits in thousands						
All visits	109,539	32,106	5,843	6,051	6,751	8,302	9,013	26,595	1,856	5,969	5,859	1,193
						Percent distribution						
All visits	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sex												
Male	38.7	41.8	54.9	34.4	[1]77.4	54.9	29.8	[1]18.0	40.8	48.9	35.7	59.1
Female	61.3	58.2	45.1	65.6	[1]22.6	45.1	70.2	[1]82.0	59.2	51.1	64.3	40.9
Age												
Under 6 years	7.1	7.9	*4.5	[1]33.9	[1,*]0.2	*4.1	10.7	[1,*]0.6	[1,*]2.0	*11.6	7.6	*19.9
6–16 years	19.3	[1]27.0	37.5	14.7	[1]–	[1]65.2	*11.8	[1,*]1.6	[1,*]4.8	*23.6	13.0	*15.4
17–24 years	9.1	9.9	[1,*]4.1	7.1	[1]17.8	16.0	8.8	*5.7	*14.2	6.7	8.0	*9.3
25–44 years	16.8	18.8	22.3	12.5	27.0	[1,*]4.2	*34.1	[1,*]5.4	26.2	26.9	22.1	*23.3
45–64 years	20.6	22.1	*20.9	[1]7.3	[1]54.8	*10.3	*21.5	*15.2	31.6	16.1	24.8	*17.7
65–74 years	11.4	11.1	*9.5	*17.4	[1,*]0.2	[1,*]0.2	*11.9	17.8	*18.3	*7.2	*9.3	*11.2
75 years and over	15.9	[1,*]3.2	[1,*]1.2	*7.0	[1]–	[1]–	[1,*]1.1	[1]53.7	[1,*]2.8	*7.9	*15.2	*3.2
Median age[2]	40	30	27	20	45	11	31	77	46	29	43	25
Race												
White	91.1	[1]96.7	96.1	78.4	81.6	94.2	88.1	88.7	96.0	82.5	[1]97.0	95.9
Black	7.4	[1]1.3	[1,*]1.3	*20.1	*18.4	*4.3	*9.3	*10.8	*3.3	15.1	[1,*]2.4	*1.3
Other	*1.5	*2.0	*2.6	*1.5	–	*1.5	*2.5	*0.6	*0.8	*2.4	*0.6	*2.8
Marital status (for persons 17 years of age and over)												
Married	54.0	65.8	70.4	52.7	65.7	*44.5	[1]78.8	[1]31.9	[1]74.6	62.4	51.0	48.6
Widowed	22.0	[1]8.3	[1,*]7.8	*22.0	[1,*]2.5	[1]–	[1,*]5.1	[1]49.3	*10.8	10.7	*22.3	*12.4
Separated or divorced	9.2	8.3	*4.8	*13.8	*8.9	*8.5	[1,*]2.9	*11.3	*5.6	10.0	*9.6	*28.0
Never married	14.6	17.5	*17.0	10.9	23.0	[1,*]47.0	*12.5	*7.5	*8.9	*16.9	*16.7	*11.0
Unknown	*0.1	–	–	*0.5	–	–	*0.7	–	–	–	*0.3	–
Years of school completed (for persons 17 years of age and over)												
None or 1–8	25.6	[1]13.4	*25.5	*22.8	[1,*]2.2	[1,*]2.0	[1,*]8.3	[1]52.3	[1,*]9.4	15.2	*22.0	*12.8
9–11	12.2	11.4	*6.9	[1]34.7	*15.1	*15.3	*13.5	*10.0	*6.5	10.7	12.9	*10.9
12	30.4	39.5	26.8	28.8	42.0	[1,*]10.3	*44.6	*18.9	29.2	34.3	27.2	*35.4
13–15	15.8	18.1	*20.7	*8.8	13.7	*26.1	*19.8	*10.3	*24.5	25.8	13.7	*32.4
16 or more	16.0	17.6	*20.0	[1,*]4.9	*26.9	*46.4	*13.8	*8.5	*30.4	*14.0	*24.3	*8.5
Median years completed[3]	12.4	12.6	12.7	11.4	12.8	15.6	12.6	Under 9	13.6	12.7	12.6	12.7
Family income in 1980												
Less than $5,000	8.4	[1]3.3	*4.0	*22.2	[1,*]0.2	*5.6	*5.6	*15.8	[1,*]1.5	8.1	*13.3	*8.8
$5,000–$14,999	24.6	21.1	*15.3	[1]38.7	[1,*]4.5	15.6	25.7	32.7	*31.1	26.1	33.3	*17.8
$15,000–$24,999	24.7	26.2	32.2	24.6	25.5	15.1	45.1	*16.0	19.5	24.7	26.8	50.5
$25,000–$34,999	17.0	24.5	*14.6	11.6	27.6	*17.1	*10.6	*8.0	*10.3	*30.3	*12.3	*8.8
$35,000 or more	25.3	24.8	*33.8	[1,*]2.9	42.2	*46.6	*13.1	*27.6	37.5	[1,*]10.7	[1]14.3	*14.0
						Number of visits in thousands						
Median family income[3]	$23,075	$24,590	$24,800	$11,239	$33,719	$32,868	$23,994	$14,752	$22,989	$22,424	$16,020	$18,500

See footnotes at end of table.

Table 6—Continued

Number of health care visits to nurses and percent distribution by selected characteristics, according to place of visit: United States, 1980

[Data are based on household interviews of the civilian noninstitutionalized population.]

Characteristic	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
						Percent distribution						
Perceived health status												
Excellent (Rating = 4)	33.9	[1]44.2	49.2	41.1	33.6	46.0	36.1	[1]8.6	[1]53.8	32.9	41.9	46.8
Good (Rating = 3)	31.6	34.2	31.6	40.5	[1]55.6	50.2	34.3	[1,*]9.9	31.7	47.5	30.1	39.5
Fair (Rating = 2)	19.8	17.7	*12.5	11.0	*10.0	[1,*]3.6	*28.0	*32.5	*10.6	*12.5	*23.0	*11.4
Poor (Rating = 1)	14.7	[1,*]3.9	*6.7	*7.4	[1,*]0.8	[1,*]0.2	[1,*]1.6	[1]49.0	[1,*]4.0	[1,*]7.1	[1,*]5.0	*2.4
Average rating	2.9	3.2	3.2	3.1	3.2	3.4	3.0	1.8	3.4	3.1	3.1	3.3
Limitation of activity?												
Yes	30.4	[1]12.7	[1,*]9.6	[1]13.4	[1,*]1.7	*30.0	[1,*]9.4	[1]83.7	[1,*]14.5	[1]16.0	[1,*]14.1	*7.8
No or unknown	69.6	[1]87.3	[1]90.4	[1]86.6	[1]98.3	70.0	[1]90.6	[1]16.3	[1]85.5	[1]84.0	[1]85.9	92.2
Region of residence												
Northeast	18.1	*11.0	[1,*]1.3	[1]9.7	22.4	26.4	*31.8	25.6	*9.1	*20.5	12.6	*12.4
North Central	28.0	37.5	43.9	[1]16.1	*27.8	*17.5	[1,*]10.1	*22.8	*36.6	22.8	34.8	61.4
South	30.1	26.5	[1,*]15.3	[1]57.6	45.2	*48.4	43.1	*19.9	36.4	22.0	29.0	*13.9
West	23.8	25.1	*39.5	16.6	[1,*]4.6	[1,*]7.8	*15.0	*31.7	*17.8	34.8	23.6	*12.3
Type of place of residence												
In SMSA												
In central city	22.1	26.1	[1,*]10.2	23.3	[1]42.3	16.3	[1]11.8	*16.4	34.9	23.3	31.7	*25.1
Not in central city	38.2	39.3	*27.6	[1]20.2	48.1	57.8	33.0	35.5	48.3	48.2	26.1	54.9
Outside SMSA												
Urban	17.9	12.3	22.5	26.6	[1,*]4.1	*15.6	*41.5	*17.5	*10.7	*14.9	26.7	*3.7
Rural	21.8	22.2	39.8	30.0	[1,*]5.6	[1,*]10.2	*13.6	*30.6	[1,*]6.1	13.6	15.4	*16.3

[1]Figure is significantly different from the corresponding figure in the "All places" column.
[2]Test of significance of differences were not made with respect to median age.
[3]Test of significance of differences were not made with respect to median school years or median income.

NOTE: For the standard errors of estimates in this table, see Table VI.

SOURCE: National Medical Care Utilization and Expenditure Survey.

Appendixes

List of Appendix Tables

Appendix I. Technical Notes on Methods

Survey Background

The National Medical Care Utilization and Expenditure Survey was a panel survey designed to collect data about the U.S. civilian noninstitutionalized population in 1980. During the course of the survey, information was obtained on health, access to and use of medical services, associated charges and sources of payment, and health insurance coverage. The survey was cosponsored by the National Center for Health Statistics (NCHS) and the Health Care Financing Administration (HCFA). Data collection was provided under contract by the Research Triangle Institute and its subcontractors, National Opinion Research Center and SysteMetrics, Inc.

The basic survey plan for NMCUES drew heavily on two surveys, the National Health Interview Survey (NHIS), conducted by the National Center for Health Statistics, and the National Medical Care Expenditure Survey (NMCES), cosponsored by the National Center for Health Services Research and the National Center for Health Statistics.

NHIS is a continuing, multipurpose, cross-sectional survey first conducted in 1957. The main purpose of NHIS is to collect information on illness, disability, and the use of medical care. Although some information on medical expenditures and insurance payments have been collected in NHIS, the cross-sectional nature of the survey design is not well suited for providing annual data on expenditures and payments.

NMCES was a panel survey in which a sample of households was interviewed six times over an 18-month period in 1977 and 1978. NMCES was specifically designed to provide comprehensive data on how health services were used and paid for in the United States in 1977.

NMCUES is similar to NMCES in survey design and questionnaire wording, so that analysis of some of the change during the 3 years between 1977 and 1980 is possible. Both NMCUES and NMCES used question wording that was similar to NHIS in areas common to the three surveys. Together they provide extensive information on illness, disability, use of medical care, costs of medical care, sources of payment for medical care, and health insurance coverage at two points in time.

Sample Design of NMCUES

The NMCUES sample of housing units and group quarters, hereafter jointly referred to as dwelling units, is a concatenation of two independently selected national samples, one provided by the Research Triangle Institute and the other by the National Opinion Research Center. The sample designs used by these two organizations are similar with respect to principal design features; both can be characterized as stratified, four-stage area probability designs. The principal differences between the two designs are the type of stratification variables and the specific definitions of sampling units at each stage. The salient design features of the two sample surveys are summarized in the following sections.

The target population for NMCUES consisted of all persons who were members of the U.S. civilian noninstitutionalized population at any time between January 1, 1980 and December 31, 1980. All persons living in a sample dwelling unit at the time of the first interview contact became part of the national sample. Unmarried students 17–22 years of age who lived away from home were included in the sample when a parent or guardian was included in the sample. In addition, persons who died or were institutionalized between January 1 and the date of first interview were included in the sample if they were related to persons living in the sample dwelling units. All of these persons were considered "key" persons, and data were collected for them for the full 12 months of 1980 or for the proportion of time they were part of the U.S. civilian noninstitutionalized population. In addition, babies born to key persons were considered key persons, and data were collected for them from the time of birth. Relatives from outside the original population (that is, institutionalized, in the Armed Forces, or outside the United States between January 1 and the first interview) who moved in with key persons after the first interview were also considered key persons, and data were collected for them from the time they joined the key person. Relatives who moved in with key persons after the first interview but were part of the civilian noninstitutionalized population on January 1, 1980, were classified as "nonkey" persons. Data were collected for nonkey persons for the time that they lived with a key person but,

because they had a chance of selection in the initial sample, their data are not used for general person-level analysis. However, data for nonkey persons are used in family analysis because they do contribute to the family's utilization of and expenditures for health care during the time they are part of the family.

Persons included in the sample were grouped into "reporting units" for data collection purposes. Reporting units were defined as all persons related to each other by blood, marriage, adoption, or foster care status and living in the same dwelling unit. The combined NMCUES sample consisted of 7,244 eligible reporting units, of which 6,599 agreed to participate in the survey. In total, data were obtained on 17,123 key persons. The Research Triangle Institute sample yielded 8,326 key persons and the National Opinion Research Center sample yielded 8,797.

Research Triangle Institute Sample Design

A primary sampling unit (PSU) is defined as a county, a group of contiguous counties, or parts of counties with a combined minimum 1970 population size of 20,000. A total of 1,686 disjointed PSU's exhaust the land area of the 50 states and Washington, D.C. The PSU's are classified as one of two types. The 16 largest standard metropolitan statistical areas (SMSA's) are designated as self-representing PSU's, and the remaining 1,670 PSU's in the primary sampling frame are designated as nonself-representing PSU's.

PSU's are grouped into strata whose members tend to be relatively alike within strata and relatively unlike between strata. PSU's derived from the 16 largest SMSA's had sufficient population in 1970 to be treated as primary strata. The 1,659 nonself-representing PSU's from the continental United States were stratified into 42 primary strata with approximately equal populations. Each of these primary strata had a 1970 population of about 3⅓ million. One supplementary primary stratum of 11 PSU's, with a 1970 population of about 1 million, was added to the Research Triangle Institute primary frame to include Alaska and Hawaii.

The total first stage sample for Research Triangle Institute consisted of 59 PSU's, of which 16 were self-representing PSU's. The nonself-representing PSU's were obtained by selecting one PSU from each of the 43 nonself-representing primary strata. These PSU's were selected with probability proportional to 1970 population size.

In each of the 59 sample PSU's the entire PSU was divided into smaller disjoint area units called secondary sampling units (SSU's). Each SSU consisted of one or more 1970 Census-defined enumeration districts or block groups. Within each PSU the SSU's were ordered and then partitioned to form secondary strata of approximately equal size. Two secondary strata were formed in the nonself-representing PSU drawn from Alaska and Hawaii, and four secondary strata were formed in each of the remaining 42 nonself-representing PSU's. Thus, the nonself-representing PSU's were partitioned into a total of 170 secondary strata. In a similar manner the 16 self-representing PSU's were partitioned into 144 secondary strata.

In the second stage of selection one SSU was selected from each of the 144 secondary strata covering the self-representing PSU's, and two SSU's were selected from each of the remaining secondary strata. All second-stage sampling was with replacement and with probability proportional to the SSU's total noninstitutionalized population. The total number of sample SSU's was $2 \times 170 + 144 = 484$.

For the third stage of selection each SSU was first divided into smaller disjointed geographic areas, and one disjointed area within the SSU was selected with probability proportional to the total number of housing units in 1970. Next, one or more disjointed segments of at least 60 housing units were formed in the selected area. One segment was selected from each SSU with probability proportional to the segment housing unit count. In response to the sponsoring agencies' request that the expected household-sample size be reduced, a systematic sample of one-sixth of the segments was deleted from the sample. Thus, the total third-stage sample was reduced to 404 segments.

For the fourth stage of selection all of the dwelling units within the segment were listed, and a systematic sample of dwelling units was selected. The procedures used to determine the sampling rate for segments were designed to guarantee that all dwelling units had an approximately equal overall probability of selection. All of the reporting units within the selected dwelling units were included in the sample.

National Opinion Research Center Sample Design

The land area of the 50 States and Washington, D.C., was also divided into disjointed PSU's for the National Opinion Research Center sample design. A PSU consisted of SMSA's, parts of SMSA's, counties, parts of counties, or independent cities. Grouping of counties into a single PSU occurred when individual counties had a 1970 population of less than 10,000.

The PSU's were classified into two groups according to metropolitan status—SMSA or not SMSA. These two groups were individually ordered and then partitioned into zones with a 1970 census population size of approximately 1 million.

A single PSU was selected within each zone with a probability proportional to its 1970 population. It should be noted that this procedure allowed a PSU to be selected more than once. For instance, an SMSA primary sampling unit with a population of 3 million could be selected at least twice and possibly as many as 4 times. The full general-purpose sample contained

204 PSU's. These 204 PSU's were systematically allocated for four subsamples of 51 PSU's. The final set of 76 sample PSU's was chosen by randomly selecting two complete subsamples of 51 PSU's; one subsample was included in its entirety, and 25 of the PSU's in the other subsample were selected systematically for inclusion in NMCUES.

For the second stage each of the PSU's selected in the first stage was partitioned into a disjointed set of SSU's defined by block groups, enumeration districts, or a combination of the two types of Census units. Within each sample PSU the SSU's were ordered and then partitioned into 18 zones such that each zone contained approximately the same number of households. One SSU had the opportunity to be selected more than once, as was the case in the PSU selection. If a PSU had been hit more than once in the first stage, the second-stage selection process was repeated as many times as there were first-stage hits. The 405 SSU's were identified by selecting 5 SSU's from each of the 51 PSU's in the subsample that was included in its entirety, and 6 SSU's from each of the 25 PSU's in the group for which only one-half of the PSU's were included.

The SSU's selected in the second stage were then subdivided into area segments with a minimum size of 100 housing units each. One segment was then selected with probability porportional to the estimated number of housing units.

The fourth stage sample selection of housing units for the National Opinion Research Center was essentially the same as that used by the Research Triangle Institute.

Collection of Data

Field operations for NMCUES were performed by the Research Triangle Institute and the National Opinion Research Center under specifications established by the sponsoring agencies. Persons in the sample dwelling units were interviewed at approximately 3-month intervals beginning in February 1980 and ending in March 1981. The core questionnaire was administered during each of the five rounds of interviews to collect data on health, health care, health care charges, sources of payment, and health insurance coverage. A summary of responses was used to update information reported in previous rounds. Supplements to the core questionnaire were used during the first, third, and fifth rounds of interviews to collect data that were not expected to change during the year or that were needed only once. Approximately 80 percent of the third and fourth rounds of interviews were conducted by telephone; all remaining interviews were conducted in person. The respondent for the interview was required to be a household member 17 years of age or older. A proxy respondent not residing in the household was permitted only if all eligible household members were unable to respond because of health, language, or mental condition.

Imputation

Nonresponse in panel surveys such as NMCUES occurs when sample individuals refuse to participate in the survey (total nonresponse), when initially participating individuals drop out of the survey (attrition nonresponse), or when data for specific items on the questionnaire are not collected (item nonresponse). In general, response rates for NMCUES were excellent: Approximately 90 percent of the sample reporting units agreed to participate in the survey, and approximately 94 percent of the individuals in the participating reporting units supplied complete annual information. Even though the overall response rates are quite high for NMCUES, the estimates of means and proportions may be biased if nonrespondents have different health care experiences than respondents, or if there is a substantial response rate differential across subgroups of the target population. Furthermore, totals will tend to be underestimated unless allowance is made for the loss of data due to nonresponse.

Two methods commonly used to compensate for survey nonresponse are data imputation and the adjustment of sampling weights. For NMCUES, imputation was used to compensate for attrition and item nonresponse, and weight adjustment was used to compensate for total nonresponse. The calculations of the weight adjustment factors are discussed in the section on sampling weights.

A specialized form of the sequential hot-deck imputation methods was used for attrition imputation. First, each sample person with incomplete annual data (hereafter referred to as a "recipient") was linked to a sample person with similar demographic and socioeconomic characteristics who had complete annual data (herafter referred to as a "donor"). Second, the time periods for which the recipient had missing data were divided into two categories: imputed eligible days and imputed ineligible days. The imputed eligible days were those days for which the donor was eligible (that is, in scope) and the imputed ineligible days were those days for which the donor was ineligible (that is, out of scope). For the recipient's imputed eligible days, the donor's medical care experiences (such as medical provider visits, dental visits, or hospital stays) were imputed into the recipient's record. Finally, the results of the attrition imputation were used to make the final determination of a person's respondent status. If more than two-thirds of the person's total eligible days (both reported and imputed) were imputed, then the person was considered to be a total nonrespondent, and all data for the person were removed from the analytic data file.

The data collection methodology and field quality control procedures for NMCUES were designed so that the data would be accurate and complete as possible subject to budget considerations. However, individuals cannot report data that are unknown to them, or they may choose not to report the data even if known. This latter situation is especially true for data relating to expen-

ditures, income, and other sensitive topics. Because of the size and complexity of the NMUCES data base it was not feasible, from the standpoint of cost, to replace all missing data for all data items. The 12-month data files, for example, contain approximately 1,400 data items per person. With this in mind, the NMCUES approach was to designate a subset of the total items on the data base for imputation of the missing data. Thus, for 5 percent of the NMCUES data items the responses were edited and missing data imputed by a combination of logic and hot-deck procedures to produce revised variables for use in analysis. Items for which imputations were made cover the following data areas:

- Visit charges.
- Source of payment codes and amounts.
- Annual disability days.
- Health insurance premium amount.
- Length of hospital stay.
- Total weeks worked in 1980.
- Average hours worked per week.
- Educational level.
- Hispanic ethnicity.
- Income.
- Age and birthdate.
- Race.
- Sex.
- Health insurance coverage.
- Visit dates.

These items were selected as the most important variables for statistical analyses.

Weighting and Estimation

For the analysis of NMCUES data, sample weights are required to reflect the complex sample design and to adjust for the potential biasing effects of systematic nonsampling errors related to total nonresponse and sampling frame undercoverage. Data imputation procedures, discussed in the preceding section, were used to compensate for attrition and item nonresponse.

Development of weights reflecting the sample design of NMCUES was the first step in the computation of person-level analytical weights. The basic sample-design weight for a dwelling unit is the product of four weight components that correspond to the four stages of sample selection. Each of the four weight components is either the inverse of the probability of selection at the stage when sampling was without replacement, or it is the inverse of the expected number of selections when sampling was with replacement and multiple selection of the sample unit was possible.

As previously discussed, the NMCUES sample is composed of two independently selected samples. Each sample, together with its basic sampling weights, yields independent unbiased estimates of population parameters. Because the two NMCUES samples were of approximately equal size, a simple average of the two independent estimators was used for the combined sample estimator. This is equivalent to defining an adjusted basic weight by dividing each basic sample weight by 2. Hereafter only the combined sample and the adjusted basic weights are considered.

The total nonresponse-undercoverage adjustment factor is computed at the reporting unit (RU) level. Because every RU within a dwelling unit is included in the sample, the adjusted basic weight assigned to an RU is simply the adjusted basic weight for the dwelling unit in which the RU is located. As noted above, an RU was classified as responding if the RU initially agreed to participate in NMCUES and as nonresponding otherwise.

Initially 96 RU weight adjustment cells were formed by cross-classifying the following RU variables: race of RU head of household (white or all other), type of RU head of household (female, male, or husband-wife), age of RU head of household (four levels), and size of RU (four levels). These cells were then collapsed to 63 cells so that each cell contained at least 20 responding RU's.

The formula for computing the total nonresponse-undercoverage adjustment factor for RU's in cell C was

$$A_1(C) = \frac{\mathrm{CPS}(C)}{\sum_{k \in C} \phi(k) W_1(k)}$$

where CPS (C) = March 1980 Current Population Survey estimate of the number of RU's in cell C

$$\phi(k) = \begin{cases} 1 & \text{if } k\text{th RU was classified as responding} \\ 0 & \text{otherwise} \end{cases}$$

$W_1(k)$ = the adjusted basic weight for the kth RU

The nonresponse undercoverage adjusted weight for the kth RU, denoted by $W_2(k)$, was then computed as the product of the adjusted basic weight for the kth RU and the nonresponse-undercoverage adjustment factor for the cell containing the RU.

The poststratification adjustment factor is computed at the person level. As each person within an RU is included in the sample, the nonresponse-undercoverage adjusted weight for a sample person is the nonresponse-undercoverage adjusted weight for the RU in which the person resides. Each person was classified as responding or nonresponding as discussed in the section on attrition imputation.

Initially, 60 poststrata were formed by cross-classifying the following three variables: Age (15 levels), race (black or all other), and sex (male or female). One poststratum (black males over 75 years of age) had fewer than 20 respondents, so it was combined with an adjacent poststratum (black males 65–74 years of age), resulting in 59 poststrata.

Estimates based on the 1980 census of the U.S. civilian noninstitutionalized population by age, race, and sex for February 1, May 1, August 1, and November 1, 1980, were obtained from the U.S. Bureau of the Census. The mean of the mid-quarter population estimates for each of the poststrata was computed and used as the 1980 average target population in calculating the poststrata adjustment factors. Similarly, survey based estimates of the average poststrata population were developed using the nonresponse-undercoverage adjusted weights. First a survey-based estimate of the target population of poststratum p at mid-quarter q was computed as follows:

$$S(p,q) = \sum_{j \in p} \delta(q,j) W_2(j)$$

where $\delta(q,j) = \begin{cases} 1 & \text{if survey respondent } j \text{ was in scope at mid-quarter } q \\ 0 & \text{otherwise} \end{cases}$

$W_2(j)$ = nonresponse-undercoverage adjusted weight of respondent j.

The survey based estimate of the 1980 average population for poststratum p was computed as the mean of the four mid-quarter estimates, or

$$S(p) = \frac{1}{4} \times \sum_{q=1}^{4} S(p,q)$$

The poststratification adjustment factor for the pth poststratum was then computed as

$$A_2(p) = \frac{C(p)}{S(p)}$$

where $C(p)$ = mean 1980 population for poststratum p based on U.S. Bureau of the Census data. The poststratified weight for the jth respondent, denoted by $W_3(j)$, was then computed as the product of the nonresponse-undercoverage adjusted weight for the jth respondent and poststratification adjustment factor for the poststrata containing the respondent.

For many analyses estimates of the average 1980 population are required. Since some respondents were eligible for only a portion of the year, the aggregation of the W_3 weights for all respondents is an estimate of the total number of persons who were in the civilian noninstitutionalized population of the United States in 1980 and is an overestimate of the average 1980 population size. Therefore an adjustment factor was calculated for each respondent to reflect the proportion of time during 1980 the respondent was eligible to report NMCUES data. This adjustment factor for respondent j is

$$A_3(j) = \frac{E(j)}{366}$$

where $E(j)$ = number of days during 1980 respondent j was in scope.

Estimators

Weighted linear estimators are used for estimating population and population subdomain aggregates. Suppose, for example, an estimate of the parameter "total doctor visit charges for persons 65 years and over" is desired. The estimator of this parameter, denoted by $\hat{\theta}$, is given by

$$\hat{\theta} = \sum_{j \in A} W_3(j) X_j$$

where A is the collection of all NMCUES respondents 65 years and over and X_j is the total doctor visit charges reported by the jth respondent during the eligible period.

Ratio estimators are used for estimating population and population subdomain parameters such as means, proportions, and rates. As will be illustrated in the following examples, care must be taken in determining the appropriate weights to be used in the denominator of the ratio estimator.

Example 1—The NMCUES estimator for the proportion of doctor visits attributable to persons 65 years of age and over is given by

$$\hat{\theta} = \frac{\sum_{j \in A} W_3(j) Y_j}{\sum_{All\, j} W_3(j) Y_j}$$

where Y_j is the number of doctor visits reported by the jth respondent.

Example 2—The NMCUES estimator for mean annual doctor visit charges for persons 65 years of age and over is given by

$$\hat{\theta} = \frac{\sum_{j \in A} W_3(j) X_j}{\sum_{j \in A} W_3(j) A_3(j)}$$

where X_j is the total doctor visit charges reported by the jth respondent during his or her eligible period, and $A_3(j)$ is in the time adjustment factor for the jth respondent. The time adjustment factor is used in this situation to adjust for the fact that the jth respondent contributed doctor visit charges to the numerator only during the period of eligibility.

Reliability of Estimates

The estimates presented in this report are based on a sample of the target population rather than on the entire population. Thus the values of the estimates may be different from values that would be obtained from a complete census. The difference between a sample estimate and the population value is referred to as the sampling error, and the expected magnitude of the sampling error is measured by a statistic called the standard error. Estimated standard errors for the estimates presented in Table 1 are shown in Table I, estimated standard errors for estimates presented in Table 2 are shown in Table II, and so on, to Tables 6 and VI.

Table I

Sample sizes and standard errors of estimates relating to persons in Table 1

Characteristic	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
					Number of persons in the sample							
All persons	2,259	692	141	285	144	312	249	149	80	232	218	55
					Standard errors of total persons in thousands							
All persons	848	552	241	381	166	282	323	180	137	297	282	105
Sex					Standard errors of percents in percentage points							
Male	1.01	1.77	4.57	2.99	3.44	3.03	2.81	3.56	5.12	3.05	2.67	6.32
Female	1.01	1.77	4.57	2.99	3.44	3.03	2.81	3.56	5.12	3.05	2.67	6.32
Age												
Under 6 years	0.89	1.36	2.47	3.14	0.55	1.50	3.31	1.86	2.02	2.80	2.93	4.33
6–16 years	1.13	1.78	3.94	2.04	–	3.38	3.47	1.63	3.02	2.20	2.98	4.21
17–24 years	0.80	1.12	2.47	2.07	3.91	2.62	2.16	2.22	3.58	1.70	2.57	6.07
25–44 years	1.09	1.72	3.60	1.84	4.72	1.76	3.48	3.07	5.21	3.17	2.96	5.02
45–64 years	0.86	1.75	3.68	1.95	3.45	0.80	2.11	3.26	3.53	3.19	3.35	5.21
65–74 years	0.64	1.52	2.35	2.00	0.58	0.37	2.76	3.47	3.52	2.24	2.39	4.55
75 years and over	0.62	0.89	1.71	0.98	–	–	0.87	4.56	2.71	2.10	2.16	2.78
Race												
White	1.31	0.99	3.17	5.61	2.64	2.05	4.87	2.82	3.20	3.18	1.47	3.72
Black	1.29	0.73	1.65	5.62	2.64	1.55	4.91	2.54	2.92	2.66	1.33	2.09
Other	0.40	0.76	2.85	0.77	–	1.24	1.01	1.15	1.39	1.49	0.68	3.12
Marital status (for persons 17 years of age and over)												
Married	1.24	2.19	5.15	5.16	4.70	4.30	5.17	4.75	5.86	5.00	5.25	9.32
Widowed	1.05	1.55	3.38	3.05	1.73	–	2.46	4.33	3.19	2.94	3.18	6.06
Separated or divorced	0.76	1.43	2.55	4.00	3.24	4.13	2.59	3.03	2.58	2.78	2.19	5.63
Never married	1.34	1.67	3.40	3.81	4.81	5.59	4.74	3.44	5.07	3.08	4.52	7.88
Unknown	0.16	–	–	1.03	–	–	1.17	–	–	–	0.75	–
Years of school completed (for persons 17 years of age and over)												
None or 1–8	1.34	1.84	4.57	3.99	1.74	1.47	2.91	5.21	3.91	3.38	2.84	6.06
9–11	1.01	1.61	3.26	4.88	2.92	4.32	3.15	3.00	3.64	3.19	3.68	6.06
12	1.52	2.63	4.51	4.35	4.74	3.66	4.36	4.11	5.67	3.46	3.71	8.92
13–15	1.10	1.48	4.30	2.90	3.07	5.42	3.82	3.53	3.99	3.21	3.70	6.16
16 or more	1.16	1.81	2.99	1.97	4.39	5.07	3.41	2.83	5.55	2.64	3.06	5.56
Family income in 1980												
Less than $5,000	0.84	0.98	2.16	2.89	0.58	2.48	2.63	3.95	1.96	2.46	2.17	4.77
$5,000–$14,999	1.28	2.05	3.27	3.10	4.09	2.69	3.36	4.30	6.29	4.54	3.30	6.00
$15,000–$24,999	1.25	2.05	4.54	3.16	4.76	3.04	2.86	3.38	4.98	3.67	3.93	6.72
$25,000–$34,999	0.98	1.75	3.67	1.62	3.35	3.08	2.77	3.31	4.11	3.05	2.59	3.62
$35,000 or more	1.07	1.98	3.98	1.29	3.57	2.68	1.98	4.39	4.77	2.14	3.12	4.85

Table I—Continued

Sample sizes and standard errors of estimates relating to persons in Table 1

Characteristic	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
Perceived health status					Standard errors of percents in percentage points							
Excellent	1.17	2.10	3.99	3.53	3.80	3.51	3.55	3.95	5.62	3.82	4.43	6.89
Good	1.06	2.07	3.04	3.71	3.93	3.27	3.43	3.20	5.53	3.21	3.66	6.57
Fair	0.73	1.29	2.29	1.93	2.38	1.43	2.19	3.52	3.57	2.54	2.49	4.34
Poor	0.47	1.05	1.91	1.31	1.02	0.35	1.08	3.43	1.98	1.37	1.45	2.53
Limitation of activity												
Yes	0.69	1.74	2.93	2.18	1.32	1.34	2.78	4.44	4.09	2.33	2.31	4.12
No or unknown	0.69	1.74	2.93	2.18	1.32	1.34	2.78	4.44	4.09	2.33	2.31	4.12
Average health status rating	0.02	0.04	0.08	0.05	Standard errors of averages 0.05	0.04	0.05	0.10	0.10	0.07	0.06	0.11
Region of residence					Standard errors of percents in percentage points							
Northeast	1.53	1.26	1.83	2.50	3.37	3.83	3.13	4.66	3.92	3.30	3.87	5.78
North Central	2.36	3.55	6.86	2.50	4.00	3.57	3.38	5.75	6.52	6.27	6.36	7.57
South	2.77	3.64	5.17	5.42	4.61	3.42	6.20	4.39	6.65	4.92	4.10	6.54
West	2.09	4.41	4.98	3.90	2.06	2.01	4.83	3.70	4.33	4.78	4.64	5.86
Place of residence												
In SMSA												
In central city	2.13	3.01	3.46	4.17	5.26	3.58	4.00	3.61	7.08	4.46	3.35	5.56
Not in central city	2.61	3.69	6.50	4.56	5.33	4.48	5.21	5.26	6.00	6.03	4.51	7.07
Not in SMSA												
Urban	1.63	2.96	5.61	3.40	1.72	3.00	5.64	4.42	4.85	4.14	4.68	3.38
Rural	1.90	4.55	5.33	4.57	2.49	3.83	4.34	2.90	3.33	3.64	3.50	6.49
Number of visits with nurses in such place in 1980												
1	0.98	1.78	4.12	2.93	5.22	2.56	3.85	3.37	5.86	3.40	3.48	5.31
2	0.85	1.27	3.00	2.32	3.38	2.52	2.65	3.14	4.02	2.68	2.62	5.08
3 or 4	0.58	0.96	2.08	1.71	2.90	1.57	2.21	1.88	4.20	2.87	2.36	2.74
5–9	0.58	1.12	2.82	1.21	2.48	0.77	1.82	2.96	3.20	1.66	1.47	4.42
10–19	0.44	1.25	2.65	0.81	2.24	0.51	0.92	3.12	2.58	0.89	1.08	6.24
20 or more	0.37	0.81	3.09	0.82	1.67	0.63	1.16	2.93	1.66	0.92	1.27	4.23
Average number of visits	0.23	0.31	0.81	0.31	Standard errors of averages 0.72	0.58	0.66	2.57	0.44	0.30	0.37	1.46

The SESUDAAN (Shah, 1981) standard error estimation software package was used to produce the estimates of standard errors. SESUDAAN is a Taylor Series procedure, developed and released by the Research Triangle Institute. It runs within the Statistical Analysis System (SAS Institute, Inc. 1982).

It should also be noted that in addition to sampling error, the estimates presented in this report are subject to nonsampling errors such as biased interviewing and reporting, undercoverage, and nonresponse. The standard error does not provide an estimate of these types of errors. However, as discussed in preceding sections, every effort was made to minimize these errors.

Suppose that $\hat{\theta}$ is an unbiased estimator for the parameter θ, and $S_{\hat{\theta}}$ is a consistent estimator for the standard error of $\hat{\theta}$. Under appropriate central limit theorem assumptions regarding $\hat{\theta}$, the statistic $Z = (\hat{\theta} - \theta)/S_{\hat{\theta}}$ has an approximate standard normal distribution for large samples. Thus, an approximate $(1 - \alpha) \times 100$ percent confidence interval for θ is given by

$$(\hat{\theta} + z_{\alpha/2}S_{\hat{\theta}}, \hat{\theta} + z_{1-\alpha/2}S_{\hat{\theta}})$$

where $z_{\alpha/2}$ and $z_{1-\alpha/2}$ are the appropriate values from a standard normal table.

Table II

Sample sizes and standard errors of estimates relating to persons in Table 2

Characteristic	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
					Number of persons in the sample							
All persons	2,259	692	141	285	144	312	249	149	80	232	218	55
					Standard errors of total persons in thousands							
All persons	848	552	241	381	166	282	323	180	137	297	282	105
Types of physician seen					Standard errors of percents in percentage points							
General practitioner	1.34	2.33	4.15	3.73	4.24	2.68	3.25	5.30	5.79	3.65	3.70	7.11
Specialist in:												
Internal medicine	0.83	1.51	3.34	1.62	3.47	1.23	2.12	2.97	5.00	2.58	2.16	4.28
Pediatrics	0.84	1.74	2.69	2.59	–	3.11	2.07	2.30	3.12	2.42	2.38	4.41
Obstetrics and gynecology	0.74	1.57	3.01	1.52	2.66	1.60	2.85	2.10	5.36	2.92	1.64	6.06
Ophthalmology	0.90	1.66	2.92	1.96	2.90	1.94	2.51	3.45	4.54	2.50	1.61	4.33
Orthopedic surgery	0.70	1.09	2.33	1.27	3.17	1.64	1.93	2.35	2.65	1.48	1.40	4.47
All other specialties	0.96	1.53	4.52	2.32	3.16	2.30	1.99	3.77	5.32	3.05	2.66	6.86
Unknown type of specialty	0.56	1.03	3.01	1.31	2.61	1.25	1.49	2.21	4.10	1.58	1.50	2.95
Unknown whether general practitioner or specialist	0.79	0.93	2.01	2.00	2.42	1.35	1.83	2.68	3.37	3.02	2.06	2.50
Other type of service received												
Emergency room	1.11	1.79	3.08	2.70	3.68	1.93	2.75	4.30	4.94	2.99	3.02	4.89
Hospital outpatient department (physician seen)	1.21	1.26	2.80	1.87	2.27	2.29	2.44	2.82	4.71	3.94	2.72	4.55
Physician visit (physician seen)	1.17	1.38	2.01	3.38	3.70	3.21	3.50	3.81	3.25	3.83	2.69	5.46

As an example, Table 1 shows the estimate that 37.3 percent of all persons in the civilian noninstitutionalized population of the United States who had nurse visits in doctors' offices or group practices in 1980 were male. Table I shows a standard error estimate of 1.77 percentage points for this particular estimate. Since 68 percent of the area under the normal curve is within 1 standard error of the midpoint, 95 percent of the area within 2 standard errors, and 99 percent of the area within 2.5 standard errors, we infer the following: Chances are 68 out of 100 that the true value is 37.3 ± 1.77 or between 35.53 and 39.07 percent; chances are 95 out of 100 that the true value is 37.3 ± 2(1.77), or between 33.76 and 40.84 percent; and chances are 99 out of 100 that the true value is 37.3 ± 2.5(1.77), or between 32.875 and 41.725 percent.

Confidence intervals for the difference of two parameters can be constructed in a similar manner. Suppose θ_1 and θ_2 are the values of the parameter of interest in two mutually exclusive population subgroups. If $\hat{\theta}_1$ and $\hat{\theta}_2$ are unbiased estimators of θ_1 and θ_2 respectively, then $\hat{d} = \hat{\theta}_1 - \hat{\theta}_2$ is unbiased for $d = \theta_1 - \theta_2$ and

$$\mathrm{Var}(\hat{d}) = \mathrm{Var}(\hat{\theta}_1) + \mathrm{Var}(\hat{\theta}_2) - 2\,\mathrm{Cov}(\hat{\theta}_1,\hat{\theta}_2)$$

Unfortunately the estimation of $\mathrm{Var}(\hat{d})$ presents a problem because it is not possible for NCHS to provide the reader with covariance estimates for all possible pairs of subdomains of potential interest. However, if it is reasonable to assume that $\mathrm{Cov}(\hat{\theta}_1,\hat{\theta}_2) = 0$, the standard error of d can be estimated by

$$S_{\hat{d}} = \sqrt{S^2_{\hat{\theta}_1} + S^2_{\hat{\theta}_2}}$$

Table III

Sample sizes and standard errors of estimates relating to visits in Table 3

Visit characteristic	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
					Number of visits in the sample							
All visits	8,314	2,389	438	483	454	648	714	2,061	146	448	446	87
					Standard errors of total visits in thousands							
All visits	6,282	4,033	1,491	921	1,666	2,289	1,993	4,580	373	1,018	821	274
First type of service					Standard errors of percents of visits in percentage points							
Diagnosis or treatment	1.84	2.38	6.62	3.90	4.53	5.75	9.00	3.09	6.70	4.02	6.48	7.19
General checkup	0.52	0.68	0.78	2.01	2.38	1.30	2.10	0.86	1.52	2.32	2.18	1.58
Immunization	0.93	2.05	2.84	3.15	1.08	2.12	4.97	0.46	5.56	2.32	2.04	2.61
Other types	1.10	0.91	5.59	2.69	2.09	3.19	3.99	2.48	5.49	2.41	5.75	5.11
Visits with no health condition reported	1.65	2.46	6.40	3.63	4.73	6.01	8.29	6.25	6.88	4.17	6.63	7.19
X ray taken	0.18	0.28	0.57	0.37	0.79	0.41	0.68	0.06	4.00	1.86	0.51	–
Laboratory test made	1.46	1.29	5.87	3.29	2.38	2.11	3.76	2.66	10.24	5.70	3.56	4.13
EKG, EEG, or other diagnostic procedure done	0.36	0.50	1.01	2.25	1.03	0.60	1.39	0.16	1.91	2.41	2.01	–
Nurse worked for a doctor?												
Yes	2.86	1.01	2.44	5.96	5.88	6.02	9.01	6.71	8.87	–	5.86	11.40
No	2.82	1.01	2.44	5.96	5.88	6.02	9.01	6.71	8.87	–	5.86	11.40
Inapplicable	0.93	–	–	–	–	–	–	–	–	–	–	–

Then, under appropriate central limit theorem assumptions regarding d, the statistic $Z_d = (\hat{d} - d)/S_{\hat{d}}$ has an approximate standard normal distribution for large samples, and the interval

$$(\hat{d} + z_{\alpha/2}S_{\hat{d}}, \hat{d} + z_{1-\alpha/2}S_{\hat{d}})$$

is an approximate $(1 - \alpha) \times 100$ percent confidence interval for the difference d.

By way of example, suppose we wanted to construct a 95-percent confidence interval for the difference between the percent of persons under 6 years of age having nurse visits in neighborhood and family health centers (θ_1) and the percent of persons under 6 years of age having nurse visits in all places (θ_2). From Table 1 we have $\hat{\theta}_1 = 37.6$ and $\hat{\theta}_2 = 13.7$ so that

$$\begin{aligned}\hat{d} &= \hat{\theta}_1 - \hat{\theta}_2 \\ &= 37.6 - 13.7 \\ &= 23.9\end{aligned}$$

Also, from Table I we have $S_{\hat{\theta}_1} = 3.14$ and $S_{\hat{\theta}_2} = 0.89$ so that

$$\begin{aligned}S_{\hat{d}} &= \sqrt{S^2_{\hat{\theta}_1} + S^2_{\hat{\theta}_2}} \\ &= \sqrt{9.8596 + 0.7921} \\ &= \sqrt{10.6517} \\ &= 3.26\end{aligned}$$

Then as $\alpha = .05$, it follows that $z_{\alpha/2} = -1.96$ and $z_{1-\alpha/2} = 1.96$, so that the 95-percent confidence interval for the difference of interest is (17.51, 30.29).

The reader should be aware that the assumption that $\text{Cov}(\hat{\theta}_1, \hat{\theta}_2) = 0$ is frequently not true for complex sample surveys. This warning is especially germane for sample designs, such as the NMCUES design, which rely on cluster sampling at one or more stages of sample selection. If $\text{Cov}(\hat{\theta}_1, \hat{\theta}_2)$ is positive, the confidence interval will tend to be too large, and hence the confidence level will be understated. More seriously, if $\text{Cov}(\hat{\theta}_1, \hat{\theta}_2)$ is negative, the confidence interval will tend to be too small, and the confidence level will be overstated.

Table IV

Sample sizes and standard errors of estimates relating to visits in Table 4

Visit characteristic	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
					Number of visits in the sample							
All visits	8,314	2,389	438	483	454	648	714	2,061	146	448	446	87
					Standard errors of total visits in thousands							
All visits	6,282	4,033	1,491	921	1,666	2,289	1,993	4,580	373	1,018	821	274
Charge for visit					Standard errors of percents of visits in percentage points							
No charge	3.48	1.54	3.81	4.61	7.82	10.42	7.81	10.76	2.32	3.36	5.85	6.77
$3.00 or less	1.60	2.85	1.68	2.02	2.16	0.76	7.74	1.58	–	2.52	2.41	0.98
$3.01–$4.99	1.18	2.47	15.07	0.87	1.14	1.99	2.00	0.48	0.56	0.22	0.53	6.06
$5.00–$9.99	2.21	3.89	6.84	1.38	3.93	3.45	11.41	1.66	9.92	3.00	5.07	4.64
$10.00–$14.99	1.03	2.15	3.53	1.49	1.79	1.51	1.67	2.15	3.98	6.81	1.70	11.40
$15.00–$19.99	0.55	0.78	3.88	1.16	1.51	1.15	1.19	1.78	3.29	1.59	1.39	2.59
$20.00–$24.99	0.37	0.58	3.12	1.00	0.59	0.46	0.74	0.52	1.93	2.54	1.57	1.96
$25.00–$29.99	0.97	0.64	0.80	0.99	0.49	0.50	0.56	4.00	2.67	1.31	1.27	1.28
$30.00–$39.99	0.42	0.42	0.55	0.83	1.49	2.73	0.70	0.96	2.70	1.56	0.47	1.09
$40.00–$49.99	0.71	0.14	0.77	0.58	0.90	0.52	1.07	2.98	2.01	1.08	0.76	2.83
$50.00–$99.99	1.14	0.49	1.70	0.87	0.92	0.77	0.83	4.46	2.54	2.04	0.49	1.77
$100.00 or more	0.21	0.19	0.51	0.58	0.28	0.14	0.75	0.62	0.81	1.44	0.76	0.97
					Standard errors of totals in millions of dollars							
Total charges	141.9	39.8	16.5	12.3	24.4	31.5	30.0	93.8	7.7	29.0	12.2	5.0
Average charge per visit	1.24	0.55	2.16	1.31	Standard errors of averages in dollars 1.76	1.82	3.50	4.74	2.85	3.76	1.63	2.28

Table V

Sample sizes and standard errors of estimates relating to charges in Table 5

Source of payment	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
					Amounts of charges in the sample, in dollars							
Total charges	113,717	25,291	5,344	4,762	4,011	5,424	8,619	36,889	2,940	15,591	3,812	1,034
					Standard errors of total amounts in millions of dollars							
Total charges	141.9	39.8	16.5	12.3	24.4	31.5	30.0	93.8	7.7	29.0	12.2	5.0
					Standard errors of percents in percentage points							
Medicare	2.65	0.95	1.75	0.83	–	–	2.72	10.41	1.99	1.79	7.15	5.54
Medicaid	1.71	1.44	1.91	7.26	–	–	2.36	5.59	0.87	3.02	6.16	–
State or local government	1.62	0.27	0.39	7.19	2.66	5.89	9.31	3.16	1.20	1.00	15.53	6.89
Commercial insurance plans	5.43	2.84	6.55	1.16	11.51	0.45	1.39	15.27	6.15	5.34	1.69	10.27
Blue Cross and Blue Shield	1.17	2.38	4.22	0.47	–	0.42	1.21	1.16	4.63	5.35	0.23	2.56
Other prepaid plans	1.36	2.06	5.71	8.68	3.61	3.91	4.10	0.21	7.87	3.54	2.67	8.54
Patient or family	2.32	3.60	5.26	2.86	1.11	2.82	12.49	5.03	7.66	3.60	4.16	9.03
All other sources	2.24	2.32	5.44	1.35	8.58	11.38	4.42	1.64	4.07	4.47	9.75	18.29
Unknown source or unpaid	0.28	0.11	–	2.78	2.06	1.64	0.16	0.58	0.07	0.58	3.39	–

Table VI

Sample sizes and standard errors of estimates relating to visits in Table 6

Characteristic	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
					Number of visits in the sample							
All visits	8,314	2,389	438	483	454	648	714	2,061	146	448	446	87
					Standard errors of total visits in thousands							
All visits	6,282	4,033	1,491	921	1,666	2,289	1,993	4,580	373	1,018	821	274
Sex					Standard errors of percents of visits in percentage points							
Male	2.28	3.27	8.90	5.72	6.30	13.08	6.56	5.79	9.02	7.51	6.34	9.24
Female	2.28	3.27	8.90	5.72	6.30	13.08	6.56	5.79	9.02	7.51	6.34	9.24
Age												
Under 6 years	0.93	2.11	1.49	3.65	0.17	1.53	3.04	0.19	1.07	3.61	2.10	10.70
6–16 years	2.17	2.97	13.23	2.39	–	10.63	4.18	0.88	2.24	9.85	2.75	5.95
17–24 years	1.50	2.25	1.46	1.59	3.66	4.68	2.43	4.51	5.90	1.62	2.08	4.30
25–44 years	2.02	2.89	4.48	2.64	7.07	1.35	13.34	4.07	6.78	4.93	5.62	11.42
45–64 years	2.27	2.50	6.47	1.73	7.24	8.56	8.65	5.10	9.06	3.74	6.48	6.77
65–74 years	1.70	2.35	4.89	5.70	0.18	0.18	4.21	5.50	7.63	2.53	3.00	4.40
75 years and over	4.26	0.79	0.76	5.31	–	–	0.68	11.34	2.17	3.00	6.05	1.86
Race												
White	1.64	1.24	2.64	6.37	10.56	2.11	4.11	4.31	1.96	4.56	1.10	2.42
Black	1.49	0.38	0.77	6.42	10.56	1.66	3.58	4.22	1.76	4.23	1.05	1.30
Other	0.54	1.21	2.46	1.11	–	0.87	1.48	0.40	0.80	1.20	0.37	2.00
Marital status (for persons 17 years of age and over)												
Married	4.70	4.05	7.80	9.84	6.47	16.86	6.77	9.08	8.06	6.58	8.97	13.22
Widowed	5.54	1.66	3.09	9.82	1.52	–	2.72	11.85	7.05	2.64	7.47	5.84
Separated or divorced	2.06	2.20	2.30	4.22	4.13	3.62	1.36	5.79	1.70	2.59	6.48	15.74
Never married	2.12	3.78	7.30	3.17	5.00	14.62	4.24	5.57	3.16	5.50	5.88	5.98
Unknown	0.05	–	–	0.52	–	–	0.51	–	–	–	0.31	–
Years of school completed (for persons 17 years of age and over)												
None or 1–8	5.33	1.96	8.81	7.98	1.46	1.66	3.82	11.47	3.46	3.05	7.58	6.41
9–11	1.94	2.78	3.19	6.21	8.79	5.27	4.56	4.66	2.54	2.76	3.76	5.66
12	4.12	4.56	5.41	4.57	9.06	4.04	14.69	8.21	6.70	4.17	7.32	11.35
13–15	2.43	3.41	6.61	2.98	3.14	8.86	10.19	5.11	9.72	5.01	3.38	15.36
16 or more	2.20	3.36	7.76	1.79	8.87	16.27	4.91	4.53	11.14	6.05	7.87	4.20
Family income in 1980												
Less than $5,000	1.61	0.77	2.98	8.43	0.18	2.34	2.00	5.86	1.15	2.12	4.57	4.10
$5,000–$14,999	2.75	3.02	6.52	6.33	1.83	4.40	6.48	9.24	9.59	5.65	6.69	5.82
$15,000–$24,999	2.55	3.59	5.43	4.00	6.46	4.38	12.36	5.85	4.39	4.56	5.97	11.05
$25,000–$34,999	1.88	4.06	5.67	2.17	7.95	5.26	3.87	4.69	3.51	9.61	5.44	2.88
$35,000 or more	4.12	3.71	11.44	0.80	9.42	14.12	5.79	14.85	9.60	3.82	3.23	6.36
Perceived health status												
Excellent	2.59	3.66	8.54	5.57	6.96	13.29	9.75	2.42	7.94	5.68	6.45	11.19
Good	2.36	3.90	4.15	6.21	6.68	14.03	9.62	2.97	6.57	7.64	4.39	11.04
Fair	3.79	3.15	5.01	2.32	3.27	1.33	13.91	12.50	3.83	3.61	7.26	4.16
Poor	2.25	1.50	3.66	4.44	0.56	0.17	0.89	10.33	2.12	3.04	2.84	1.66
Limitation of activity?												
Yes	4.06	2.53	4.52	3.81	0.92	18.24	3.76	4.74	5.51	4.35	4.82	3.44
No or unknown	4.06	2.53	4.52	3.81	0.92	18.24	3.76	4.74	5.51	4.35	4.82	3.44

Table VI—Continued

Sample sizes and standard errors of estimates relating to visits in Table 6

Characteristic	All places	Doctor's office, group practice	Doctor's clinic	Neighborhood or family health center	Company clinic	School clinic	Other clinic	Patient's home	Laboratory	Hospital outpatient department	Other	Unknown place
						Standard errors of averages						
Average health status rating	0.07	0.06	0.18	0.12	0.08	0.13	0.22	0.10	0.13	0.09	0.13	0.14
						Standard errors of percents of visits in percentage points						
Region of residence												
Northeast	2.47	3.50	0.79	2.70	5.66	7.83	14.42	6.78	4.55	4.68	3.76	6.19
North Central	2.64	5.22	13.26	3.22	9.79	5.37	3.38	6.94	11.01	6.22	7.83	9.63
South	3.22	4.14	5.93	6.91	12.50	14.55	11.14	7.41	8.34	5.78	6.06	5.01
West	3.73	5.30	16.21	5.23	2.25	2.45	4.50	13.45	6.23	9.93	5.51	4.42
Type of place of residence												
In SMSA												
In central city	2.99	4.99	4.22	5.99	8.81	4.82	3.32	6.97	9.02	5.33	7.51	11.34
Not in central city	3.65	5.24	9.38	4.26	8.80	12.35	9.81	9.69	10.41	9.20	5.48	11.16
Outside SMSA												
Urban	2.06	2.72	4.66	5.91	2.01	8.86	13.10	5.70	4.59	4.79	5.55	2.20
Rural	3.48	6.18	10.49	5.30	2.27	3.62	4.55	13.60	3.37	3.86	3.22	5.53

The statistics Z and Z_d can be used to test hypotheses. For example, the size α critical region for the composite hypothesis

$$H_0 : d \geq d_0$$

versus

$$H_A : d < d_0$$

is given by

$$Z_{d_0} = \frac{\hat{d} - d_0}{S_{\hat{d}}} \leq z_\alpha$$

As an example, suppose that we had an a priori reason to believe that the percent of payments for charges for nurse visits in all places paid by Medicaid (θ_1) is less than the percent of payments for nurse visits in neighborhood and family health centers paid by Medicaid (θ_2). Letting $d = \theta_1 - \theta_2$, this can be restated as a formal hypothesis as

$$H_0 : d \geq 0$$

versus

$$H_A : d < 0$$

Note that what we believe to be the true state of nature is reflected by the one-sided alternative.

From Table 5 and Table V we see that

$$\hat{d} = 9.1 - 25.0 = -15.9$$

and

$$S_{\hat{d}} = \sqrt{2.9241 + 52.7076}$$

$$= 7.46$$

so that $Z_{d_0} = -2.13$. Then, assuming that the level of significance had been set at $\alpha = .025$ (which implies the one-tailed critical value as $z_\alpha = -1.96$), we would reject H_0 in favor of H_A as $Z_{d_0} \leq z_\alpha$.

As discussed in connection with the construction of confidence intervals, the assumption that $\text{Cov}(\hat{\theta}_1, \hat{\theta}_2) = 0$ must be carefully evaluated. If in fact the covariance is positive, the size of the test will be smaller than α; and if the covariance is negative, the size of the test will be larger than α. The reader desiring to conduct more sophisticated analysis of the NMCUES data is advised to consult with a statistician knowledgeable in the analysis of data from complex sample surveys.

Appendix II. Definition of Terms

Activity limitation—In the first interview a series of questions was asked to ascertain whether each person "(1) cannot perform usual activity, (2) can perform usual activity but limited in kind or amount, (3) can perform usual activity but limited in kind or amount of other activity, and (4) not limited." All persons classified as 1, 2, or 3 were reported as having a limitation of activity in Table 2; those with classification 4 were reported as not limited.

Average charge per visit—The arithmetic mean calculated from charges reported by the household respondent without consideration for the amount actually paid or the source of payment. Zero charges were assigned to visits the household reported as free from the provider in response to three separate questions.

Average number of visits—The arithmetic mean calculated by dividing the number of visits to particular type of practitioner by the number of persons having such visits during the year.

Condition—Any entry on the questionnaire that describes a departure from a state of physical or mental well-being. A condition 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.

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.

Emergency department—A hospital facility organized to provide medical services to people needing immediate medical or surgical intervention. The emergency department is staffed 24 hours a day. People receiving care in the emergency department may be admitted into a hospital.

Emergency department visit—A face-to-face encounter between a patient (not necessarily ambulatory) and a medical person. Emergency department visits include encounters by patients transported to the emergency department by police or the emergency medical service. The visit may result in a hospital admission.

Family—A group of people living together 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.

Flat fee—A single charge for a service, a variety of services, or a series of visits. The single charge may have been paid in one lump sum or by installments, but in a way that could not be related to individual events of health care. 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. Visits during and prior to 1980 were considered in the proration of the flat fee, but visits after December 31, 1980 could not be considered.

Group quarters—A structure occupied by five or more unrelated people who lived or ate together, or for whom there was neither direct access from the outside or through a common hall nor complete kitchen facilities. Only noninstitutional group quarters were included in the NMCUES sample frame.

HHS—National Household sample.

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

Hospital outpatient department—A hospital-based ambulatory care facility organized to provide nonemergency medical services. Persons receiving services do not receive inpatient nursing care. Examples of outpa-

tient 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 a housing unit or group quarters that was included in the sample. This could have been 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; that is, 1) the occupants did not live and eat with any other persons in the structure, and 2) 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.

Institution—A place providing room, board, and certain other services for the residents or patients. Correctional institutions, military barracks, and orphanages were always considered institutions for NMCUES. Places that provided health care were also identified if they provided either nursing or personal care services. Certain other facilities licensed, registered, or certified by a State agency or affiliated with a Federal, State, or local government agency were also defined as institutions. People residing in institutions were not included in the household samples.

Key person—A key person was (1) an occupant of a National Household sample housing unit or group quarter at the time of the first interview; (2) related to and living with a State Medicaid Household sample case member at the time of the first interview; (3) an unmarried student 17–22 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) 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.

MV—Medical visit or medical provider visit other than stays in a hospital or visits to a hospital emergency or outpatient departments. It was used as an identifier of the space on the control card for the interviewer to record the number of medical visits, as an interviewer instruction to record in the space, and as a prefix to page numbers in the hospital stay section of the core questionnaire.

Median charge per visit—The amount at which half the visits had lower charges and half had higher charges.

NP—Next person. It was an interviewer instruction to ask the set of questions for the next person in the reporting unit, or to go to the next section of the questionnaire if there were no additional people.

NV—Next visit. It was an interviewer instruction to ask the set of questions for the next reported visit, or to go to the next section of the questionnaire if there were no additional visits.

National household component—One component of the NMCUES, consisting of multiple household interviews with an area probability sample of people in the 1980 U.S. civilian noninstitutionalized population.

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

OPD—Hospital outpatient department visit. It was used as an identifier of the space on the control card for the interviewer to record the number of hospital outpatient department visits, as an interviewer instruction to record in that space, and as a prefix to page numbers in the hospital stay section of the core questionnaire.

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

PSU#—The primary sample unit number used to identify the first stage of the sample selection process.

Place of visit—Type of place coded according to the respondent's reply when asked where the person saw the medical person. (See Appendix III.)

Practitioners—All persons engaged in the prevention, diagnosis, and treatment of physical or mental health problems regardless of whether they had medical degrees. Included were persons such as chiropractors, speech therapists, faith healers, psychologists, and nurses, as well as medical and osteopathic doctors. The types of practitioners and the specialties of physicians visited by household members were categorized as reported by the household respondent. If a physician or osteopath was seen in a medical visit, no other practitioner who may have been seen in the same visit was recorded. If no physician was seen but a nonphysician practitioner was seen, that type of nonphysician practitioner was recorded as having been visited. If two or more types of nonphysician practitioners and no physician were seen, then a visit was recorded for each type of nonphysician practitioner seen.

Principal RU respondent—The member of the reporting unit who provided the majority of the information for the people in the reporting unit.

Proxy respondent—As used in this survey, a proxy respondent was a person who provided information for the 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.

RU—Reporting unit.

RV—Repeat visit. This portion of the questionnaire

was used if a number of visits were made by the same person to the same provider of health care for the same services and with the same charges.

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.

REF. DATE—Reference date. The reference date was the date of the previous interview in most cases. For the first interview, however, it was January 1, 1980. For a new person, it was the date they joined the reporting unit.

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

SMHS—State Medicaid Household sample.

Sample type—National Household sample or State Medicaid Household sample.

Segment #—A number used to identify the sample unit at a stage in the sample selection.

Sources of payment—The source of payment for the total charge was ascertained for each visit. First, total payments from the family were determined, followed by payments from other sources. No distinction was made between whether the payment had been made or was expected to be made in the future. Both the summary of responses review and updating allowed sources to be added or deleted. Three separate sources could be recorded; if more than three sources of payment were involved (excluding the family), the three paying the highest amounts were recorded.

State Medicaid Household component—One component of NMCUES, consisting of interviews with households containing case members selected from the November 1979 Medicaid eligibility files of California, Michigan, New York, and Texas.

Summary of responses—A computer-generated report sent to the interviewer and reporting unit just prior to a followup interview. It contained summary information of previously reported health care, charges for the care, sources of payment, and health insurance coverage. It was designed for updating information, especially charges and sources of payment which may not have been available to the respondent at the time the health care was originally reported.

Total charge for visits—Information was collected on the total charge for the service or supply provided in each visit. The total charge included everything that was done or provided during the visit. This total charge was the amount billed, not necessarily the actual amount paid or accepted as payment by the provider of the care. Ideally, a dollar-and-cent amount was available at the time of the interview. When a dollar-and-cent amount was not available at the time of the interview, the reasons were separated into several categories.

An unknown charge was recorded as such and could be obtained in the next interview during the review of the summary of responses. If the respondent reported that there was a very small or no charge for the visit, a probe question was asked. When Medicaid or welfare paid the bill, the respondent would probably have no idea how much it actually cost, and the instruction for "Medicaid or welfare" was to skip the rest of the charge and source of payment series.

There may have been no charge reported because another source or sources would pay. This source could have been an organization that provided services and was funded or reimbursed by members' fees or public or private funds, such as a health maintenance organization, a prepaid health plan, private insurance, a public clinic, or a student health clinic. The code "free from provider" was used only when the provider gave a service for which he or she was not reimbursed; for example, a professional courtesy or volunteer service. A small charge—$3.00 or less for a medical visit—sometimes is associated with a prepaid health plan or health maintenance organization. A small charge also may reflect the actual charge for the visit, however, so additional questions were asked.

A person may receive a single charge for a service, a variety of services, or a series of visits. This single charge may be paid in a way that cannot be related to the individual events of health care. Such a charge was termed a *flat fee* (see definition).

Types of service (medical visits)—The type of service the respondent reported receiving was assigned by the interviewer to a precoded category. Each applicable service was coded into one of the following categories: Diagnosis or treatment, general checkup, eye exam (for glasses), immunization, family planning, or other. Services coded as other were recorded by the interviewer and coded before entry into the computer. To have one service associated with each visit for the purposes of this report, a hierarchy for selecting one service was developed. Visits for services not known or visits for services not reported were excluded. The seven service categories, in order of priority, follow.

1. *Prenatal or postnatal care* includes visits related to care of the mother during pregnancy (prenatal care) and visits during the period just after delivery (postnatal care).
2. *Diagnosis or treatment* includes visits with an associated condition. The visit was for an examination or test to detect the presence of a disease or for a procedure to counter or manage the effects of a disease or injury. Excluded from this category are visits for a general checkup during which a condition was discovered.
3. *Family planning* includes visits for consultations relating to methods of birth control, sex education, genetic counseling, and so forth. If the respondent reported a tubal ligation or vasectomy, it was coded as family planning.
4. *Eye exam (for glasses)* includes visits for examination of the eyes either to establish a need for eyeglasses

or contact lenses or to modify the type of eyeglasses or contact lenses.

5. *Immunization* includes visits to receive shots or injections to prevent one or more particular diseases. Visits for allergy shots are included in the diagnosis or treatment category.
6. *General checkup* includes visits to determine the general state of a person's health. This category includes physical examinations required for employment, entrance to school, and insurance; routine annual physical examinations; visits to the well-baby clinic, and so forth.
7. *Other* includes visits for medical services not mentioned in the previously described categories.

Visits—Medical provider visits other than stays in a hospital or visits to hospital emergency departments. Visits to hospital outpatient departments were included. A visit was counted whenever a medical provider was seen for the purpose of receiving some health-related service or supply, except for visits to pharmacies or to dentists, which were counted elsewhere.

Appendix III. Survey Instrument

For all instruments used in the National Medical Care Utilization and Expenditure Survey, see Bonham (1983).

In each of the five rounds of interviewing, the interviewer asked a series of probe questions to determine whether any member of the family had received medical services during the reference period. For the first round of interviewing, which took place in February and April 1980, the reference period was from January 1, 1980, until the time of the interview. In each subsequent round the reference period began with the date of the previous interview and ended with the current interview, except that the reference period for the fifth round ended December 31, 1980.

The first question relevant to this report among the provider probe questions was number 4: "Since (REF. DATE), did (you/anyone in the family) go to a hospital clinic or hospital outpatient department for medical care?" If the answer was yes, the respondent was asked, "Who was this?" and "Anyone else?" For each person so indicated, the interviewer asked, "Since (REF. DATE), how many times did (PERSON) visit a hospital clinic or outpatient department?" For each such visit the questions on page OPD–24 of the questionnaire were asked, including number 4: "Did (PERSON) see a medical doctor on that visit?" If the answer was no, then the respondent was asked question 4.C., "What type of medical person did (PERSON) see at (CLINIC NAME)?" and the interviewer had the following precoded types to circle: "Chiropractor, Podiatrist, Optometrist, Psychologist, Social Worker, Nurse, Physical Therapist, Lab Technician," and "Other (SPECIFY)." The "others" were subsequently given special codes.

The next relevant probe questions followed the question as to whether family members had seen a medical doctor. Question number 10 then was asked: "(Not counting the visits you already told me about), since (REF. DATE), did (you/anyone in the family) see any medical practitioners such as optometrists, foot doctors, chiropractors, or physical therapists?" If yes, respondent was asked "Who was this?" and "Anyone else?" and, for each such person, "Since (REF. DATE), how many tirnes did (PERSON) see such a medical practitioner?" Question 11 probed further: "(Not counting the visits you've already told me about) since (REF. DATE), did (you/anyone in the family) receive treatment from any other medical person such as a nurse, nurse practitioner, paramedic, health aide, physician assistant, or other such medical person?" If so, respondent was asked who such persons were, and how many times they saw such medical persons. The interviewer then asked question 12, "(Not counting what you have already told me about) since (REF. DATE), did (you/anyone in the family) see a psychiatrist, a psychologist, a psychiatric social worker or any other mental health person?" and, if so, who such persons were and how many times they saw such mental health persons. The interviewer next asked provider probe question number 13, "(Not counting the visits you've told me about) since (REF. DATE), did (you/anyone in the family) go to a doctor's office, clinic, or laboratory *just* for (an) examination(s), tests, shots, x rays, or treatments?" and, if so, who such persons were and how many times they went for such services. Then the final relevant probe question was number 14: "(Besides the visits we've talked about) since (REF. DATE), did (you/anyone in the family) go to a health clinic, company clinic, school clinic, infirmary, neighborhood health center, family planning clinic, mental health clinic, or any other medical place?" If so, respondent was asked who such persons were and how many times they went to one of these places.

For all instances in which the inteviewer had elicited positive responses to any of questions 10–14, the questions on "medical provider visit" (pages MV–38 and following on the core questionnaire) were asked. These include questions on the date of the visit, type of place, provider's name, and location. The next question was, "Did (PERSON) see a medical doctor on that visit?" If the answer was no, then the interviewer asked, "What type of medical person did (PERSON) see?" and had the following items to circle: "Chiropractor, Podiatrist, Optometrist, Psychologist, Social Worker, Nurse, Physical Therapist," and "Other (SPECIFY)." Special codes were subsequently given to types of medical persons entered under "Other."

Regarding the medical provider visit, the interviewer asked the respondent the reason for the visit and the interviewer was given codes for the following options: Diagnosis or treatment, general checkup, eye examination for glasses, immunization, family planning, and other (SPECIFY). The interviewer then asked, "Was this for a specific condition?" and, if yes, "For what

condition did (PERSON) visit (PROVIDER) on (DATE)?" and "Any other condition?" Each condition mentioned was noted. Then the interviewer asked, "Did (PROVIDER) discover any condition?" and, if yes, "What was it?" and other conditions mentioned were also noted. Thus, the nature of the complaint or condition occasioning the visit, as presented in this report, was as perceived and understood by the survey respondent.

Next, questions were asked on some particular tests made during the visit, and detailed questions were asked on charges for the visit and how the charges were paid. For an in-depth discussion of the coding of charges, see Bonham (1983), pages 15–16.

The following nine pages reproduce the pages of the core questionnaire, containing the questions that served to elicit information on services from nonphysician health care practitioners.

PROVIDER PROBES

The next questions deal with visits you (and members of your family) have made to dentists, doctors and other types of medical specialists since (REF. DATE). First, we will talk about dental visits.

			PERSON 1
1.	Since (REF. DATE) did [you/anyone in the family, that is you, (EACH PERSON IN FAMILY)] go to a dentist? Yes . . . . . 01(A) No. . . . . 02(2)		
	A. Who was this? CODE "DENTIST" IN PERSON'S COLUMN. Did anyone else go to a dentist since (REF. DATE)?	1A	Dentist 01
	B. Since (REF. DATE), how many times did (PERSON) go to a dentist? RECORD IN PERSON'S COLUMN.	B	☐ Times
2.	(Not counting the visits you just told me about), since (REF. DATE) did [you/anyone in the family] go to a dental surgeon, oral surgeon, orthodontist, dental assistant or any other person for dental care? Yes . . . . . 01(A) No. . . . . 02(DV)		
	A. Who was this? CODE "OTHER DENTAL" IN PERSON'S COLUMN. Anyone else?	2A	Other Dental. 01
	B. Since (REF. DATE), how many times did (PERSON) go to such a person for dental care? RECORD IN PERSON'S COLUMN.	B	☐ Times
DV	ENTER TOTAL OF EACH PERSON'S DENTAL VISITS (Q's 1B & 2B) IN "DV" BOX ON CONTROL CARD.	DV	
3.	Since (REF. DATE) did [you/anyone in the family] go to a hospital emergency room for medical care? Yes . . . . . 01(A) No. . . . . 02(ER)		
	A. Who was this? CODE "EMERGENCY ROOM" IN PERSON'S COLUMN. Anyone else?	3A	Emergency Room. 01
	B. Since (REF. DATE) how many times did (PERSON) receive treatment in a hospital emergency room? RECORD IN PERSON'S COLUMN.	B	☐ Times
ER	ENTER TOTAL OF EACH PERSON'S EMERGENCY ROOM VISITS IN "ER" BOX ON CONTROL CARD.	ER	
4.	Since (REF. DATE), did [you/anyone in the family] go to a hospital clinic or hospital outpatient department for medical care? Yes . . . . . 01(A) No. . . . . 02(OPD)		
	A. Who was this? CODE "CLINIC OR OPD" IN PERSON'S COLUMN. Anyone else?	4A	Clinic or OPD 01
	B. Since (REF. DATE), how many times did (PERSON) visit a hospital clinic or outpatient department? RECORD IN PERSON'S COLUMN. IF PERSON WENT TO MORE THAN ONE CLINIC OR OUTPATIENT DEPARTMENT ON A SINGLE TRIP TO THE HOSPITAL, COUNT EACH CLINIC OR DEPARTMENT AS A DIFFERENT VISIT.	B	☐ Times
OPD	ENTER TOTAL OF EACH PERSON'S CLINIC OR OPD VISITS IN "OPD" BOX ON CONTROL CARD.	OPD	

PROVIDER PROBES

		PERSON 1
5. Since (REF. DATE), [were you/was anyone in the family] a patient in a hospital overnight? (Be sure to include newborn babies.) Yes . . . . . 01(A) No. . . . . 02(6)		
A. Who was this? CODE "IN HOSPITAL" IN PERSON'S COLUMN. Anyone else?	5A	In hospital 01
B. Since (REF. DATE), how many different times was (PERSON) a patient in a hospital? RECORD IN PERSON'S COLUMN.	B	☐ Times
6. Since (REF. DATE), [were you/was anyone in the family] admitted as a patient to a hospital and discharged on the same day? Yes . . . . . 01(A) No. . . . . 02(7)		
A. Who was this? CODE "IN AND OUT" IN PERSON'S COLUMN. Anyone else?	6A	In and out. 01
B. Since (REF. DATE), how many different times was (PERSON) admitted to and discharged from a hospital on the same day? RECORD IN PERSON'S COLUMN.	B	☐ Times
7. [Were you/was anyone in the family] a patient in a nursing home, convalescent home or similar place since (REF. DATE)? Yes . . . . . 01(A) No. . . . . 02(HS)		
A. Who was this? CODE "NURSING HOME" IN PERSON'S COLUMN. Anyone else?	7A	Nursing home. 01
B. Since (REF. DATE), how many different times was (PERSON) a patient in a nursing home or similar place? RECORD IN PERSON'S COLUMN.	B	☐ Times
HS ENTER TOTAL OF EACH PERSON'S HOSPITAL STAYS (Q's. 5B, 6B & 7B) IN "HS" BOX ON CONTROL CARD.	HS	
8. During this period did [you/anyone in the family] get any medical advice from a doctor over the telephone? Yes . . . . . 01(A) No. . . . . 02(9)		
A. Who was the phone call about? CODE "TELEPHONE" IN PERSON'S COLUMN. Anyone else?	8A	Telephone 01
B. How many telephone calls were made to get medical advice about (PERSON)? RECORD IN PERSON'S COLUMN.	B	____# of calls
		DO NOT INCLUDE TELEPHONE CALLS IN V BOX.

PROVIDER PROBES

PERSON 1

9. Since (REF. DATE), how many times did (PERSON) see a medical doctor? (Do not count doctors seen during visits to [an emergency room/hospital clinic or outpatient department/or while a patient in a hospital.]) RECORD IN PERSON'S COLUMN.

9 — None seen. . . . . 00; Medical Doctor . . . . 01; ☐ Times

10. (Not counting the visits you already told me about) since (REF. DATE), did [you/anyone in the family] see any medical practitioners such as optometrists, foot doctors, chiropractors, or physical therapists?

A. Who was this? CODE "MEDICAL PRACTITIONER" IN PERSON'S COLUMN. Anyone else? — Yes . . . . . 01(A); No. . . . . 02(11) — 10A — Medical Practitioner . 01

B. Since (REF. DATE), how many times did (PERSON) see such a medical practitioner? RECORD IN PERSON'S COLUMN. — B — ☐ Times

11. (Not counting the visits you've already told me about) since (REF. DATE), did [you/anyone in the family] receive treatment from any other medical person such as a nurse, nurse practitioner, paramedic, health aide, physician assistant, or other such medical person?

A. Who was this? CODE "MEDICAL PERSON" IN PERSON'S COLUMN. Anyone else? — Yes . . . . . 01(A); No. . . . . 02(12) — 11A — Medical Person 01

B. Since (REF. DATE), how many times did (PERSON) see such a medical person? RECORD IN PERSON'S COLUMN. — B — ☐ Times

12. (Not counting what you have already told me about) since (REF. DATE), did [you/anyone in the family] see a psychiatrist, a psychologist, a psychiatric social worker or any other mental health person?

A. Who was this? CODE "MENTAL HEALTH PERSON" IN PERSON'S COLUMN. Anyone else? — Yes . . . . . 01(A); No. . . . . 02(13) — 12A — Mental Health Person . 01

B. Since (REF. DATE), how many times did (PERSON) see such a mental health person? RECORD IN PERSON'S COLUMN. — B — ☐ Times

13. (Not counting the visits you've told me about) since (REF. DATE), did [you/anyone in the family] go to a doctor's office, clinic, or laboratory just for an examination, tests, shots, X-rays, or treatments?

A. Who was this? CODE "TESTS, SHOTS" IN PERSON'S COLUMN. Anyone else? — Yes . . . . . 01(A); No. . . . . 02(14) — 13A — Tests, Shots 01

B. Since (REF. DATE), how many times did (PERSON) go just for examinations, tests, shots, X-rays, or treatments? RECORD IN PERSON'S COLUMN. — B — ☐ Times

14. (Besides the visits we've talked about) since (REF. DATE), did [you/anyone in the family] go to a health clinic, company clinic, school clinic, infirmary, neighborhood health center, family planning clinic, mental health clinic or any other medical place?

A. Who was this? CODE "CLINIC, HEALTH CENTER" IN PERSON'S COLUMN. Anyone else? — Yes . . . . . 01(A); No. . . . . 02(MV) — 14A — Clinic, Health Center. 01

B. How many times since (REF. DATE) did (PERSON) go to one of these places? RECORD IN PERSON'S COLUMN. — B — ☐ Times

MV — ENTER TOTAL OF EACH PERSON'S VISITS (Q's. 9, 10B, 11B, 12B, 13B AND 14B) IN MV BOX ON CONTROL CARD. — MV

HOSPITAL OUTPATIENT DEPARTMENT VISIT

(You told me that (PERSON) visited a hospital clinic or hospital outpatient department (NUMBER) times since (REF. DATE).)

VISIT A

PERSON _____ # _____

1. On what date did (PERSON) [first/next] visit a hospital clinic or outpatient department? — 1 — _____ / _____ Month / Date

2. What is the complete name of the hospital and in what city and state is it located? — 2 — Name: _____ _____ / _____ City / State

3. What is the name of the clinic or department (PERSON) went to during the visit on (DATE)? Any other clinic? ENTER NAME IN FIRST AVAILABLE COL. IF DK NAME, ASK: What type of clinic is it? — 3 — _____ Clinic/Dept. Name or Type

FOR EACH CLINIC, ASK Q's. 4 - 21

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

Yes . . . . . 01(A)
No. . . . . 02(C)
Don't know. . . . . 94(5)

A. Is that doctor a general practitioner or a specialist? — A

General Practitioner. . . 01(5)
Specialist. . . . . 02(B)
Don't know. . . . . 94(5)

B. What is the doctor's specialty? — B

Cardiologist. . . . . 01(5)
Internist . . . . . 02(5)
OB/GYN. . . . . 03(5)
Ophthalmologist . . . . . 04(5)
Orthopedist . . . . . 05(5)
Pediatrician. . . . . 06(5)
Psychiatrist. . . . . 07(5)
Other (SPECIFY) . . . . . 08(5)
_____ ☐☐

C. What type of medical person did (PERSON) see at (CLINIC NAME)? — C

Chiropractor. 01
Podiatrist. 02
Optometrist 03
Psychologist. 04
Social Worker 05
Nurse 06
Physical Therapist. . . . 07
Lab Technician. 08
Other (SPECIFY) 09
_____ ☐☐

HOSPITAL OUTPATIENT DEPARTMENT VISIT

VISIT A

PERSON _____ # ____

5. Why did (PERSON) visit the (CLINIC NAME) on (DATE)? CODE ALL THAT APPLY — 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. Was this for any specific condition? — A

- Yes . . . . . 01(B)
- No. . . . . 02(C)

B. What was the condition? Any other condition? — B & D

Condition		Cond. #
	CC	(6)
	CC	(6)
	CC	(6)
	CC	(6)

C. Did (PROVIDER) discover any condition? — C

- Yes . . . . . 01(D)
- No. . . . . 02(6)

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

		Yes	No
6. Were any X-rays taken during this visit to (NAME OF CLINIC) on (DATE)?	6	01	02
7. Were any laboratory tests taken such as a blood test, urinalysis, culture, or other kind of test done?	7	01	02
8. Was an EKG, EEG, (a pap smear) or any other diagnostic procedure done?	8	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 charges for [X-rays/laboratory tests/diagnostic procedures].) — 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. Why was there [no/such a small] charge for this visit? — 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)

HOSPITAL OUTPATIENT DEPARTMENT VISIT

VISIT A

PERSON _____ # _____

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

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

11. Do you expect any source to reimburse or pay you back? — 11

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

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

B. How much will (EACH SOURCE) reimburse or pay you back? — &, B

SOURCE	AMOUNT
	$ %
	$ %
	$ %

C BOX — CODE ONE:

TOTAL CHARGE PAID IN Q. 10
PARTIAL OR NONE PAID IN Q. 10

C BOX

Total Charge Paid . . . .01 (RV)
Partial or None Paid. . .02 (12)

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

Yes . . . . . .01 (A)
No. . . . . .02 (RV)

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

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

SOURCE	AMOUNT
	$ %
	$ %
	$ %

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

Yes . . . . . .01 (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

[ ] Visits (14)
None. . . . . .00 (S BOX)

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

[ ] Visits (15)
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)____/____ Month / Date
2)____/____ Month / Date
3)____/____ Month / Date
4)____/____ Month / Date
5)____/____ Month / Date
6)____/____ Month / Date
7)____/____ Month / Date
8)____/____ Month / Date
9)____/____ Month / Date
10)____/____ 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:_____

NEXT VISIT

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?

IF CLINIC, ASK: Was it a hospital outpatient clinic, a company clinic, or some other kind of clinic?

IF SOME OTHER PLACE, ASK: Where was this?

- Doctor's office or group practice.01
- Doctor's clinic. 02
- Neighborhood/Family Health Center.03
- Company clinic 04
- School clinic. 05
- Other clinic 06
- 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)
- No . . . . . .02(C)
- Don't know . . . . . .94(5)

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

- General practitioner . . . . . .01(5)
- Specialist . . . . . .02(B)
- Don't know . . . . . .94(5)

B. What is the doctor's specialty?

- Cardiologist. . . .01(5)
- Internist . . . . .02(5)
- OB/GYN. . . . . .03(5)
- Ophthalmologist . .04(5)
- Orthopedist. . .05(5)
- Pediatrician . .06(5)
- Psychiatrist . .07(5)
- Other (SPECIFY).08(5)

_____ [ ][ ]

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

- Chiropractor. . . .01(5)
- Podiatrist. . . . .02(5)
- Optometrist . . . .03(5)
- Psychologist. . . .04(5)
- Social Worker. .05(5)
- Nurse. . . . . .06(D)
- Phy. Therapist .07(D)
- Other (SPECIFY).08(D)

_____ [ ][ ]

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

- Yes. 01
- No 02
- Don't know 94

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 for glasses . . . .03(6)	Other (SPECIFY).06(A) _____

A. Was this for any specific condition?

Yes . . . . . .01(B)
No. . . . . .02(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?

Yes . . . . . .01(D)
No. . . . . .02(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. Anyone else?	B. How much will (EACH SOURCE) reimburse or pay you back?
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. Who else paid or will pay any part of the charge? ENTER BELOW. Anyone else?	B. 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 SAMPLE . . . . . .02(19)

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

Place:_____

Street:_____

City:_____

State:_____ Zip:_____

NEXT VISIT

Department of Health and Human Services
Otis R. Bowen, M.D., Secretary

Health Care Financing Administration
William L. Roper, M.D., Administrator

Office of Research and Demonstrations
Judith B. Willis, Director

Office of Research
Allen Dobson, Ph.D., Director

Division of Program Studies
Carl Josephson, Director

Surveys Studies Branch
Herbert A. Silverman, Ph.D., Chief

Public Health Service
Donald Ian Macdonald, M.D.,
Acting Assistant Secretary for Health

National Center for Health Statistics
Manning Feinleib, M.D., Dr.P.H., Director

Office of Interview and Examination Statistics Program
Peter L. Hurley, Acting Associate Director

Division of Health Interview Statistics
Owen T. Thornberry, Jr., Ph.D., Director

Utilization and Expenditure Statistics Branch
Robert A. Wright, Chief