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Evaluation of National Health Interview Survey Diagnostic Reporting

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This report presents the results of a study of the reporting of chronic conditions in the National Health Interview Survey. The analysis compares the reporting of certain chronic conditions by household interview respondents against the presence of these conditions in medical records, examining the differences in agreement across conditions and across respondent characteristics.

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Evaluation of National Health Interview Survey Diagnostic Reporting

by W. Sherman Edwards, M.B.A., Westat, Inc.; Deborah M. Winn, Ph.D, National Center for Health Statistics; Vera Kurlantzick, M.A., Project HOPE; Samantha Sheridan, M.A., Westat, Inc.; Marc L. Berk, Ph.D., and Sheldon Retchin, M.D., Project HOPE; and John Gary Collins, M.B.A., National Center for Health Statistics.

Introduction

The National Health Interview Survey (NHIS) is a continuous cross-sectional survey of the civilian noninstitutionalized population of the United States, conducted by the National Center for Health Statistics (NCHS) and the U.S. Bureau of the Census. The NHIS core interview provides national estimates of, for example, the use of physician and hospital services, and of functional limitations and restrictions of everyday activities for health reasons. Annual supplements provide timely information on other topics of health policy interest.

The NHIS has also become a major source of estimates for the prevalence of certain chronic conditions and physical impairments in the United States. Since its inception in 1957, the NHIS has included checklists of chronic conditions and impairments. The procedures for collecting this information have been revised several times, with the current approach (since 1978) of asking questions about more than 100 chronic conditions and impairments in six separate checklists (one checklist per household interviewed). There are several advantages to collecting information on the presence of chronic conditions in a national survey, as opposed to other sources. For example, a survey can capture conditions or health characteristics that may not result in medical care or may not be entered in medical records. A survey also includes persons, such as the poor and minority groups, who may be less likely to get into the health care system than others. However, a survey has drawbacks as well. Survey respondents are not medically trained, so they may not know of the presence of a condition or may misdiagnose symptoms, and they may be unwilling to report the presence of certain embarrassing or stigmatizing conditions.

The Health Interview Evaluation Survey (HIES) was designed to evaluate the reporting of service utilization and chronic conditions in the NHIS (the first such evaluation in nearly 20 years) by comparing interview responses with medical records for the same individuals. In addition, it is the first evaluation since the 1978 introduction of the current NHIS questionnaire and procedures for making prevalence estimates of chronic conditions. Comparing household interview reports with medical records can improve our understanding of data from both sources and may also shed light on people's understanding of their own health and how well the health care system meets their needs for information.

Evaluations using record-check designs are difficult; if one simply interviews persons and checks the sources they mention, it is likely that sources will be missed. Similarly, a design starting with medical records and following up with interviews will miss persons who have not sought professional medical care. Like the previous studies of the reporting of chronic conditions in the NHIS (1–3), HIES drew its subjects from the membership of a health maintenance organization (HMO) to allow as complete a verification of reports of chronic conditions as possible. However, the selection of an HMO as a source of the sample has drawbacks. The evaluation cannot examine differences by provider because there is in essence only one provider, nor can it examine the effects of variations in access to care. Also, persons belonging to an HMO may exhibit different care-seeking behavior from the general population, and they may differ in other ways.

Because of interest in possible reporting differences by race, the study design of the HIES included an oversample of black persons. The sample was also stratified by age and sex, with oversamples of older persons. Because chronic conditions generally are far less prevalent among children than adults, the selection of list-sample persons was limited to persons 18 years of age and over. To accommodate the examination of doctor visits within 2 weeks of the interview and hospitalizations within 13 months, persons identified in the medical record as having recent utilization were oversampled.

HIES methods and procedures followed those of the NHIS as closely as possible. The questionnaire included a slightly modified core NHIS, with a composite condition list that included the most prevalent chronic conditions and impairments. To avoid confounding the examination of data on the list-sample persons by whether a self- or proxy report was obtained, all list-sample persons responded for themselves. Other household members, including children, were included in the interview, as in the

NHIS. To the extent that these persons were members of the HMO and permitted access to their medical records, they are included in some analyses.

In analyzing differences between the interview report and medical record, the medical record was viewed as "the truth" for the presence and timing of doctor visits. For the presence of chronic conditions, however, the medical record may not represent a "gold standard," and this issue is examined in this report. An analysis of the reporting of 2-week doctor visits will be published separately.

This report includes a review of previous research on the reporting of chronic conditions by household respondents, describes the methods used in the HIES, and presents results relating to the reporting of chronic conditions. Appendixes present the HIES questionnaire, procedures used for abstracting from medical records, and specifications for a detailed analysis.

The HIES was conceived and mandated by NCHS. It was conducted by Westat, Inc.; the Project HOPE Center for Health Affairs shared the design and analysis responsibilities. The study sample was drawn from the membership of the Group Health Association, whose staff provided essential assistance in identifying the sample and in making available participants' medical records.

Highlights

The findings from the Health Interview Evaluation Survey (HIES) support the observations from previous research on the National Health Interview Survey (NHIS) and from other studies that survey interviews and medical records often provide very different pictures of the prevalence of chronic conditions in a population. The HIES design and analysis did not assume the medical record to be a "gold standard" with regard to the presence of chronic conditions but rather focused on interpreting the differences between the two data sources. Some of these differences are artifacts of the procedural differences in acquiring and interpreting reports from the two sources, but others are inherent in the definitions, manifestations, and need for professional medical care of the conditions studied. Regardless of the reason for the differences, their existence sheds some light on the accuracy of survey-based prevalence estimates of chronic conditions.

Chronic conditions may be classified in several ways. Conditions that require a physician's diagnosis to identify and are very likely to require ongoing medical care showed the highest levels of agreement between the interview and medical record. The conditions studied that fall into this category include diabetes, most heart conditions, high blood pressure, and asthma. The presence of these conditions, once diagnosed, is likely to be noted in the medical record. Each of these conditions (with the exception of heart murmurs, a special case among heart conditions) was underreported in the HIES interview, and most other conditions were apparently overreported. Thus, interview reports of these conditions are likely to be accurate, but their prevalence may be underestimated by survey data. The problem of underestimation may be particularly severe for heart disease, where individuals with more than one heart condition according to the medical record often reported fewer in the interview.

The other conditions apparently underreported by HIES respondents were cataracts and dermatitis. Although the medical record may have overstated the prevalence of cataracts (counting some that were surgically removed before the "past year"), it is likely that cataracts were underreported by survey respondents. Many notations of "beginning cataracts" or "early cataracts" were in the records, but these conditions may not have been serious enough for respondents to remember or may not have even been mentioned by the provider who discovered them. Dermatitis is a condition for which chronicity is difficult to determine from the medical record—the apparent HIES underreport is unlikely to indicate a corresponding underreport from the NHIS.

At the other end of the spectrum from the first group of conditions are those that can only be diagnosed by patient report. In the HIES, constipation and tinnitus meet this criterion. Both were significantly overreported by HIES list-sample persons, and both had very low rates of agreement with the medical record. For these conditions, the medical records shed almost no light on the accuracy of interview-based prevalence estimates. However, the records do suggest that many people do not report these conditions to their physicians, so medical records would almost certainly underestimate prevalence.

Another group of conditions is those that may be quite salient to the persons suffering from them but that may not require ongoing treatment and thus may not be in the medical record. These include orthopedic impairments, visual and hearing impairments, migraine headaches, varicose veins, allergic rhinitis, and chronic sinusitis. These conditions were all substantially overreported in general in HIES interviews, but with the exception of visual and hearing impairments, all had a number of underreports in the medical record as well. The presence of impairment is a somewhat subjective determination, whether by a provider or an individual; other conditions in this group, such as constipation, may tend to be self-diagnosed. Overall, it is clear that medical records alone would provide a very different picture of prevalence for this group of conditions than do interviews and that the rates from medical record data would likely be considerably lower.

Some conditions studied are less well defined than others, from both the household respondents' perspective and the clinical perspective as well. Some interview reports of arthritis, for example, although technically "false positives," appear to match clinically equivalent conditions in the medical record. The extent to which other reports of arthritis may reflect more generalized joint pain could not be determined. Circulatory conditions provide particular definitional problems for respondents. Persons with several heart or other circulatory conditions seem to tend to group them under one heading. The HIES found evidence of this tendency for heart conditions; it may be true for the larger family of circulatory conditions as well. That is, persons with heart disease may report "high blood

pressure" as the overall condition that encompasses all their circulatory problems.

The HIES design, using an HMO membership, studied only persons with good access to health care, including preventive care. Some evidence from the HIES analysis and previous research indicates that people who receive medical care are better able to report the presence of chronic conditions. This is clearly true for the first group of conditions described earlier, because a physician's diagnosis is necessary for patients to know that they have a condition. Among the general population, many of whom have less access to medical care than the study sample, it may be that the conditions underreported in the HIES are even more underreported for the general population. This is because some people may not have received a diagnosis and some may not have sought medical care after receiving a diagnosis. Conversely, it may be that self-diagnosed conditions might be more overreported among the general population than in the HMO study sample because people with limited access to care might have less chance to have their own diagnoses refuted.

Finally, some proxy effects seem to be present in the reporting of chronic conditions. Although the HIES did not include a formal study of proxy reporting, a comparison of probable self-responders and persons with proxy reports among household members indicated that proxy reports included considerably less overreporting, but agreement with the medical record was about the same as for self-responders. The net effect of proxy reports on NHIS prevalence estimates is difficult to determine from the analysis possible in the HIES.

Previous research on interview reliability and validity

For more than 50 years, the accuracy of data reported on household health surveys has been studied by examining medical provider reports and through review of medical records, provider surveys, or physical examinations of study subjects. These methodologies have been applied to large national surveys, including the 1935–36 National Health Survey (4), the Hunterdon County Health Study (5), the National Health Interview Study (NHIS) (1,3,6), the Center for Health Administration Studies 1970 Health Survey (7), and the 1977 National Medical Care Expenditure Survey (NMCES) (8–10), as well as to smaller, more focused studies. Although each study has a different design, all of the studies attempt to describe the error in survey results.

Most of the studies sponsored by NCHS referred to in this report are described in greater depth by Jabine (11), who reviews findings from methodological research on health interview surveys as they relate to chronic condition reporting. He discusses sources of information used, the size of various components of nonsampling error, and relationships of these errors to data requirements, respondent and interviewer characteristics, and survey design features. In addition, Jabine describes current NHIS objectives and historical changes in the survey, as well as NHIS operating procedures. He evaluates the quality of chronic conditions data, discussing which chronic conditions should be reported, as well as alternative evaluation methods.

Interviews compared with provider reports

The NHIS is the principal source of prevalence estimates for many chronic conditions in the noninstitutionalized U.S. population. Prevalence estimates from household reports are subject to various kinds of reporting error. Underreporting may occur for several reasons. Interview respondents may not be aware of the presence of a condition, particularly if they are reporting for others. They may not know the proper name for a condition or they may forget that it was present. They may also choose not to report a condition. Overreporting may also occur as respondents misdiagnose medical problems or confuse or not remember names of conditions.

Because of these limitations of household respondents as sources of clinical information, one might consider another possible method for producing such prevalence estimates, through the review of a nationally representative sample of medical records. However, as Marquis (12) and others have described, medical records have shortcomings as sources of prevalence data. Perhaps the most significant limitation for prevalence estimates is that only people seeking medical care are included.

Limitations of record checks

Marquis identified limitations of particular record-check methodologies. He was concerned with response bias, the systematic overreporting or underreporting of a medical condition or health service use. He described a basic record-check typology in terms of the values obtained for a binary variable (i.e., a variable with two possible values) from two different sources, specifically a household interview and medical records. This typology is reproduced as table A. Cell A may be referred to as "positive match" and cell D as "negative match." Cells B and C represent disagreement between the two sources; if the record is taken as truth, cell B would be considered a false positive or overreport, and cell C would be a false negative or underreport.

Marquis extended this model to describe the design of record checks. A design in which a sample of persons with a particular characteristic (such as the presence of a certain chronic condition) is drawn from records and the characteristic is then tested for in a survey he labeled "AC," noting that such a design would not capture overreports, i.e., responses in cell B. On the other hand, a design in which a survey is conducted first and record checks performed on persons reporting a characteristic of interest ("AB" design) would fail to capture underreports, i.e., responses in cell C. Record checks of either AB or AC

Table A. Marquis' basic record-check matrix for binary variable with no missing data, by survey response and notation of condition in medical records

Condition noted in medical record	Survey response		
	Yes	No	Both responses
Yes	A	C	A+C
No.	B	D	
All conditions . .	A+B		A+B+C+D

NOTES: A is positive match, B is false positive, C is false negative, and D is negative match.

design would thus not measure response bias accurately; estimates of bias would be skewed by the limitations of the design. Fully designed record checks identify a population and sample from it independently of records, obtain survey and record information for each sampled element, and compare the two data sources.

Thus, Marquis believes that cognitive research on health surveys should contain external validation features such as fully designed record checks or other careful strategies to measure the correlation of survey responses with true values. Furthermore, because of the problems inherent in certain types of record checking, it cannot be assumed that respondent forgetfulness is the dominant response problem in health surveys. In addition, record checking has inherent limitations; for example, it does not explain why respondents give incorrect answers.

Looking more generally at the use of records in survey research, Edwards and Cantor (13) expanded Tourangeau's (14) cognitive model of survey response processes to include responses based on a review of records. They pointed out idiosyncratic sources of error in using records, including error that may arise during the creation of records and error resulting from using records developed for a purpose other than research. Records thus have a different "error structure" than do interviews, where one is concerned, for example, with how well respondents understand questions, how well they recall relevant information, and how willing they are to report potentially embarrassing facts. Thus, even for a population for which the operational difficulties of selecting a representative sample of medical records are overcome (such as the membership of an HMO), one would expect that the inherent differences in the data would almost certainly result in different prevalence estimates.

Physical examinations and other data sources

Physical examinations appear to yield yet a different set of prevalence estimates from interviews or medical records. A comparison of clinical examination and medical history in the National Health Survey (15) found that only about half of adults 25–74 years of age classified as "definite hypertensive" in the examination reported being told by a doctor that they had high blood pressure. Gordon (16) described a three-way record check comparing self-administered medical history reports, physical examinations, and private physicians' reports, for heart conditions and hypertension. In the full sample, the prevalence of heart disease was slightly higher using physical examination as the source than using medical history and slightly lower for hypertension. Table B compares prevalence estimates from all three sources for the subsample subjected to the medical records verification. For both heart disease and hypertension, the medical record showed the lowest prevalence among the three sources. Heart disease had the highest rate using examination as the source, and hypertension had the highest rate using self-administered medical history.

Table B. Condition prevalence per 1,000 persons, by source of information and type of condition

Condition	Source of information		
	Medical history	Physical examination	Medical records
	Rate per 1,000 persons		
Heart disease	161.9	192.6	118.9
Hypertension	204.9	172.1	133.2

SOURCE: Gordon (16).

Methodology of previous studies

The two previous studies of diagnostic data in the NHIS, one reported by Balamuth (1) with a sample drawn from the Health Insurance Plan (HIP) of New York City, and the other reported by Madow (2,3) with Kaiser Permanente (KP) members in California, both used reverse record-check designs, or "AC" designs, using Marquis' typology from table A. Interview responses were compared with diagnostic information from medical records; the HIP study used an existing form routinely completed for medical encounters, and the KP study used a specially designed form completed by KP physicians for 1 year. Both studies acknowledged the limitations of medical records as validation. Balamuth largely limited analysis of the HIP study to conditions reported in the medical record, merely pointing out differences between household-reported conditions that were and were not in the record. Madow's study was limited to conditions entered in the medical records or about which respondents said they had spoken with a physician during the year. Thus, a condition a respondent reported, but for which no physician had been seen during that year, would appear as an overreport, even though a physician may have been seen in the previous year.

Harlow and Linet (17) reviewed studies comparing questionnaire responses of chronic conditions to medical records. Accuracy of recall was measured by agreement between the two data sources, although not all studies quantified the agreement. The authors noted that accuracy of recall includes correct reporting of medical conditions and absence of medical conditions in both data sources. Thus, if medical records are reviewed only for subjects reporting disease, the measure of agreement does not assess false negatives. The converse is also true; if interviews are conducted only for subjects whose medical records contain notation of disease, false positives cannot be calculated.

Harlow and Linet noted that in these studies, because the condition data were derived from two different sources rather than being a repeat measurement, the term "reliability" is not appropriate to describe the accuracy of reporting. They concluded that the Kappa statistic (see "Kappa statistic as a measure of agreement") and overall proportion of agreement remain the most useful summary measures.

Subsequently, Harlow and Linet (18) and Hertz-Picciotto (19) refined these views, stating that the use of medical records for assessment of accuracy is inappropriate for conditions in which medical service use depends upon self-identification of medical problems and subsequent care-seeking behavior. Harlow and Linet believe that medical records are appropriate for the assessment of conditions that have clear and unambiguous diagnostic criteria, are relatively severe, and require frequent physician contact. They conclude that agreement between medical records and self-reports cannot be generalized across conditions or across severities of conditions.

Kappa statistic as a measure of agreement

The Kappa statistic is widely used as a measure of interrater agreement, a method for analyzing the variation in different observer responses to the same phenomenon (Landis and Koch (20)). The Kappa statistic is a weighted proportion that summarizes the extent of agreement, adjusted for the rate of agreement expected by chance. Landis and Koch suggested value labels corresponding to the range of possible values for the statistic, with the labels providing benchmarks for interpreting the statistic.

In a critique of the Kappa statistic, Maclure and Willett (21) noted that it was originally conceived as a measure of agreement between two observers who sought to classify subjects into two nominal categories. The Kappa statistic has also been interpreted as a measure of validity. According to Maclure and Willett, this is not an appropriate use of the Kappa statistic. The authors cited as the Kappa statistic's major weakness the fact that it is a measure of the frequency of exact agreement, not a measure of the degree of agreement. The same weakness applies to simpler measures of agreement such as percent agreement and percent over- or underreporting. Several studies of the reporting of medical conditions (1,3,10) have addressed this problem by examining "loose matches" of interview and medical record data in which categorical definitions were expanded.

Another criticism of the Kappa statistic is that it measures agreement, which may or may not be equivalent to accuracy. Thus, if two raters agree on an incorrect judgment, resulting statistics may be biased (22). It is difficult to imagine a resolution of this weakness for the current application because a third source of information may itself be subject to idiosyncratic error, as noted earlier in an examination of interview, medical records, and physical examinations (16).

Results of studies of reporting medical conditions

This section describes some results from previous studies examining the reporting of medical conditions by survey respondents. Table C lists sources that describe characteristics of persons and correspondence with higher levels of agreement between interview and medical record reports. Details are provided in the sections that follow.

Early studies

The first use of a physician report to verify household-reported data occurred more than 50 years ago, in the

Table C. Determinants of higher agreement between interview and record data

Factor	*Reference*
Male sex	Daugherty[1] (7); Linet et al. (23)
Male sex, nonelderly	Madow (3)
Female sex	Balamuth (1)
Female sex, elderly	Madow (3)
Nonelderly age	Daugherty[1] (7)
Age over 44 years	Balamuth (1)
White race	Daugherty[1] (7); Linet et al. (23)
Self-report versus proxy	Balamuth (1); Linet et al. (23)
Proxy for spouse versus child	Balamuth (1)
Proxy reporting stigmatizing condition	Berk et al.[2] (8)
Less threatening condition[3]	Daugherty[1] (7); Cox and Iachan[4] (10); Trussell and Elinson (5)
More salient condition[5]	Daugherty[1] (7)
More numerous conditions	Daugherty1 (7)
More numerous physician visits	Daugherty[1] (7); Madow (3); Balamuth (1)
Recent physician visit	Balamuth (1)
Higher levels of expenditure	Daugherty[1] (7)
Medication for condition	Madow (3)
Fewer household members	Balamuth (1)
Urban location	Daugherty[1] (7)

[1]Daugherty analyzed "physician visit conditions," that is, any condition for which a respondent had a physician visit during the survey year.

[2]Respondents reported "physician visit conditions."

[3]A classification of threatening versus nonthreatening diseases was developed by Cannell and Fowler (6) to identify conditions most likely to be misreported because they are threatening or embarrassing. These conditions are called stigmatizing by other authors (8).

[4]The condition for this study was "physician visit condition."

[5]Salience is used to mean severity of the condition or importance of the condition to the patient.

1935–36 National Health Survey (4). Trussell and Elinson (5) also verified each major condition classification in their Hunterdon County study. Trussell and Elinson found that 30 percent of medically-attended conditions mentioned by the attending physicians were not reported in the family interview. For some conditions such as obesity, Trussell and Elinson noted that about 80 percent of the time a condition was listed in the medical record but not reported in the household interview.

Studies using health maintenance organization members

The HIP and KP studies described earlier examined the quality of NHIS diagnostic data in HMO settings, where it is relatively easy to collect medical provider record data from all providers (without missing those not reported by the respondent). The HIP study surveyed members who sought care during a specific 12-month period (1). The diagnoses from their medical records were summarized, and the summary records were compared with interview reports of chronic illnesses taken at the end of the study period. Conditions noted during physician visits that were not diagnoses were not included on the summary records. Families in which at least one person had received a medical service related to a selected list of conditions were sampled three times as intensively as other families.

Two recode classifications were used for matching health conditions in the HIP study: recode number 1, which had 278 detailed titles, and recode number 3, which had 43 more general categories. Three types of matches were recorded: two that matched according to each recode type, and one that did not fit a recode, but had characteristics recorded in the interview that allowed a match to be made to the summary record.

Fewer than half of the conditions gleaned from medical record summaries were reported in interviews, with underreporting ranging from 4 to 76 percent. The authors suggested the following factors not related to accuracy that may have contributed to low match rates: Conditions from the summary records may have been errors, some conditions judged from the medical record to be chronic may have been acute and thus not appropriate for mention in the interview, and lack of training or experience of the interviewers.

Self-reports were more often matched to summary records than were proxy reports in 21 of 32 class or diagnosis categories. The study also concluded that the proportion of all conditions inferred from the summary records that are correspondingly reported in interviews remains constant no matter how many summary record diagnoses are sustained by the given individual. In addition, the HIP survey found some underreporting of physician contacts in both the 2-week preinterview period and the previous year. This study did not examine whether medical care reported as occurring in a given time interval did, in fact, occur within that interval.

In the second HMO study, Stanford Research Institute compared interviews of a sample of members of the Kaiser Foundation Health Plan's Southern California Permanente Medical Group with medical encounter forms developed specifically for the study. The study was limited to conditions that were entered in the medical records or about which respondents said they had spoken with a physician during the year. The results can be applied only to conditions for which a physician had been seen in the past year. The study sample was designed to be able to measure the effect the number of visits had on accuracy of recall.

The survey found 15,417 chronic conditions reported in interviews or records, but only 7,182 after exclusions noted in the previous paragraph were made. Many conditions that were under- or overreported were those for which only a single physician visit was made during the study year. The matching of respondent and record reports of conditions improved markedly as the number of physician visits increased and also when medication for the condition was taken on a regular basis. The most accurate reporting was found for diabetes, vascular lesions of the central nervous system, heart conditions, diseases of the gallbladder, and absence of fingers and toes. Many more medical records than interviews noted benign and unspecified neoplasms, mental illness, menstrual disorders, and skin diseases, and there were few household reports that were unconfirmed by medical records. The opposite pattern was observed for allergic rhinitis, asthma, tuberculosis, headache and migraine, hypertension, hemorrhoids, rheumatic fever, sinusitis, bronchitis, visual and hearing impairments, and speech defects. These had many unconfirmed household reports and few medical record notations not matched by interview responses. The authors suggested that overreporting of these conditions could be the result of their long duration, as they may have begun well before the period covered by reviewed medical records.

Center for Health Administration Studies research

In the 1970 Center for Health Administration Studies of the University of Chicago survey, Daugherty (7) noted a strong inverse relationship between underreporting and the condition's effect on the individual. The greater the effect, the less often it was underreported. Daugherty explained that the type of illness affects patient reporting. She also described error estimates for reporting of three types of illnesses. In her study, 99 physician visit conditions were matched on a per person rather than a per visit basis.

Daugherty found that 40–50 percent of conditions reported by one source were not reported by the other. Overall, 35 percent of physician-mentioned conditions matched patient reporting. The author noted that reporting accuracy did not vary widely by age. She found that males were slightly better reporters than females and that the largest differences in reporting were by race and

by urban versus rural location. White people had somewhat higher agreement with medical records than people of other races, and urban more than rural residents. The study found that self-reporting was not more accurate than proxy reporting. People with more conditions had a higher accuracy score, probably because of the greater effect on their lives, called the "salience effect." Those reporting six or more conditions had an overall accuracy score of 73 percent, which was well above the overall mean. The most serious conditions have an overall accuracy score of 62 percent, also above the overall mean. Underreporting by respondents was found to be greater than overreporting. This study differs from others in that it found a greater effect of demographic factors on reporting error.

Record checks of special populations

Linet et al. (23) studied people diagnosed with chronic lymphocytic leukemia, comparing medical records with questionnaire responses about a wide range of health conditions. The overall proportion of agreement for each condition, Kappa statistic, and confidence interval for the Kappa statistic were calculated. The Kappa statistic was calculated because it incorporates an adjustment for chance agreement. Agreement for self-respondents and proxies was compared.

Based on their results, the authors concluded that some specific diseases are more accurately identified in medical records, but other conditions (such as allergic rhinitis) are more accurately ascertained from interviews. They suggest that other conditions such as asthma, may be best determined from a combination of medical records and interviews. The authors also concluded that recall is consistently better for self-respondents than for surrogates.

Studies using the National Medical Care Expenditure Survey

Cox and Cohen (9) explored whether a household interview survey could be used to predict provider response to a survey. The basic research question reflected the authors' supposition that the medical record is the most reliable data source for conditions of the population. The authors compared reason-for-visit reports from the Medical Provider Survey component of the NMCES with reports from the household component, which obtained data on the use of and costs for health services from a national probability sample of the civilian, noninstitutionalized population. The Medical Provider Survey oversampled providers of survey respondents believed to be poor reporters, based on social demographics. The authors found that only 30 percent of conditions reported by physicians were reported by households, and only 40 percent of the conditions reported by households were reported by providers. Subsequently, the authors collapsed conditions into 16 categories to determine whether this poor match was caused by inability to match at a greater level of detail. This change substantially improved agreement between the two sources. Thus, the authors suggested that the coding system should be modified to reflect the less precise nomenclature more familiar to nonprofessionals. True agreement could be detected at a less detailed level. They also recommended relying on medical provider surveys rather than household interviews for resolution of differences between sources. Cox and Cohen concluded that the relationship between these two data sources is too weak to allow prediction of the provider's report of reason for visit from a household survey report.

Cox and Iachan (10) investigated the effectiveness of household reports of conditions in describing providers' corresponding diagnoses. The authors compared responses to the NMCES with those included in the Medical Provider Survey component. Respondents were asked for conditions and providers were asked for diagnoses. The principal measures used were the percent of household reports matching provider reports and the percent of provider reports matching respondent reports. In addition, to examine overall agreement by demographic category, the (overall) probability of agreement was calculated. This was the sum across 63 conditions of the weighted percent of visits for which the two reports matched. Because of the large number of conditions, no correction for chance agreement was made (Kappa statistics were not used). Agreement for specific conditions was generally weak, but it improved when conditions were grouped together to be less specific. Questionnaire revisions also would have improved agreement because different questions were used for household respondents and providers.

Berk, Horgan, and Meyers (8) challenged the notion that self-respondents were better reporters than were proxies on health interview surveys. Using a survey of all the health providers for respondents to the NMCES for comparison, the authors were able to evaluate whether proxies or self-respondents had more accurate reports. This study focused specifically on "stigmatizing conditions" that can be very serious or that may be embarrassing to the patient. It was found that for these conditions, although the number of conditions reported was higher for self-respondents than for persons with proxy responses, the proxies reported as well as or better than actual patients when compared with medical records. Previous examinations of proxies versus self-reporters in the NHIS (24,25,26) had found self-reports generally superior to proxy reports for a variety of health indicators. Berk et al. (8) suggested that fewer conditions were reported by proxy respondents because persons not present during a household interview have fewer medical conditions than those who are present. This factor had not been controlled for in other studies. This report concluded that the use of a household proxy does not result in increased reporting bias for the conditions examined.

Studies of interview design influence

Questionnaire types

The Michigan Survey Research Center Study (27) was conducted in 1968 to compare differences in reporting of

health conditions (both chronic and acute) obtained through three different questionnaire types and data collection procedures. In a survey of nonelderly white adult females of low-to-middle socioeconomic status in Detroit, Michigan, three questionnaire versions were tested: (1) an extensive interview using multiple cognitive frames of reference, multiple cues, additional probes, and recognition of items through numerous questions; (2) a respondent diary completed daily for 1 week, followed by an interview visit; (3) a control procedure with one interview and a shorter questionnaire with the same major items and questions as the 1968 NHIS. Although there was little difference in reporting levels from the diary and control procedures, the extensive procedure resulted in a 58-percent higher mean number of conditions reported per person than the control group; most of the increase came from conditions not on the checklist. Furthermore, the majority of newly reported conditions were shown to have significant public health implications.

Comparison of condition and person approaches

From July 1967 through June 1968, a multistage national probability sample of 43,600 households was interviewed to compare the results of a "condition" approach and a "person" approach in the NHIS (28,29). The condition-approach survey, in the same format as the previous NHIS, included a series of direct questions on accidents, injuries, and illnesses of short and long duration, followed by a checklist of selected chronic conditions and impairments. The person approach also collected reports of health conditions from questions at the beginning of the interview on bed days, activity limitations, and physician contacts. It differed from the condition approach by starting the collection of health condition data through the effects of conditions. In addition, the person approach limited collection of prevalence data on chronic conditions to one of six specific body systems during a given interview. During the test period, information was collected on chronic conditions affecting the digestive system.

The person-approach survey resulted in significantly higher overall prevalence for the conditions studied (those affecting the digestive system) than the condition-approach survey. The increase was considered an improvement and was attributed to the greater detail in the checklist used in the person approach. This finding led to the present system of using more detailed checklists covering only a single body system in each interview. Furthermore, beginning in January 1969, the NHIS replaced its condition approach with a person approach.

Discussion

Using provider reports to assess the accuracy of diagnostic data reported in household interviews has provided useful information in a number of studies. However, this methodology cannot be said to provide precise measures of reporting error; it is limited by flaws in medical records as a data source, by the statistics available to interpret comparative data, and by lack of knowledge of the true prevalence of medical conditions.

The basic assumption of most investigations using record-check designs is that the provider record is "the truth." However, this may hold only for those conditions that have clear diagnostic criteria, are perceived as relatively severe by the patient, and require frequent physician contact (17–19). Chronic conditions that do not require ongoing physician contact may be correctly reported by household interview but may not be in provider records.

Some record-check study designs do not include full household interviews and medical record review. Rather, only those households for which certain conditions were found on medical records might be interviewed. Alternatively, only those provider records for households mentioning certain conditions might be examined. These incomplete survey designs can result in erroneous estimates of the bias attributable to the use of a survey report (1–3).

The record-check design is also limited by the difference between the questions asked in the household survey and the medical record. The sources can be expected to differ in content (10). Even when the patient and provider intend to describe the same condition, they may use different nomenclature, resulting in mismatches (1,3,9,10,30).

"Agreement" between household and provider sources has been inconsistently defined in previous studies. How closely do the two sources have to match to be considered in agreement? Some investigators have explored matching in broader categories with generally improved match rates.

The Kappa statistic controls for marginal variations in measuring agreement, but because it only measures exact agreement, it may be considered to measure only the frequency of use of the same medical terminology (20) in reporting of health conditions. The Kappa statistic cannot, of course, measure the intent or true meaning of what was actually reported from either source being compared and whether that intent is in agreement between sources.

A record check to examine the reporting of chronic conditions in a household survey would be most likely to be successful if the following conditions are met:

- It uses a full design, allowing evaluation of both over- and underreports.
- It measures agreement in some standard ways but goes further to examine the nature of disagreements to determine whether two sources are really talking about the same phenomenon in different terms.
- It does not necessarily assume the medical record to be the truth, but considers the possible reasons why some chronic conditions might legitimately be absent from the medical record.

The design and analysis of the HIES, described in the following sections, were planned with awareness of these lessons from previous research in evaluating survey reports of chronic conditions.

Methods

This section presents the methodology used to conduct the HIES. The evaluation was designed to mimic the content and procedures of the NHIS as closely as possible within certain design and analytic constraints. The differences in design and conduct between the HIES and the NHIS are presented in figure 1.

Sample design

The HIES was conceived as a full-design records-check study. That is, following the typology used by Marquis (12) presented in table A, the intent was to examine the reporting of chronic medical conditions by interview respondents in such a way that both apparent interview overreports (cell B in table A) and underreports (cell C in table A) could be detected. Further, the design was to allow interpretation of the absence of reports of a condition from both sources as agreement that the condition was not present. To this end, the study universe was members of Group Health Association (GHA), a staff-model HMO in the greater Washington, D.C., area. The use of a staff-model HMO with centralized records was the surest and most efficient way to implement a full design because the HMO's records provide a nearly complete inventory of members' use of health care services. The sample was restricted to individuals who had been GHA members for at least 3 years before selection to maximize the completeness of participants' medical records and to further strengthen the record-check design.

The study design was further guided by the desire to evaluate the reporting of chronic conditions by age, race, and sex, as well as to evaluate the reporting of medical events (doctor visits and hospital stays), which will be the subject of a separate report. However, this secondary objective strongly affected the overall sample design by leading to oversampling of persons with recent medical utilization.

Because of cost considerations early in the planning of the HIES, the target sample size was 1,000 self-responding adults selected from the GHA membership rolls. Children were omitted from this list sample because of their relatively low prevalence of chronic conditions. (The most

Area	NHIS[1] practice	HIES[2] procedures
Sample frame	Area probability; nationally representative	List of members of Washington, D.C., area health maintenance organization
Sample design	Multistage selection, oversampling of areas with higher proportion of black residents	Disproportionate sampling by age and whether recent doctor visit or hospital stay
Interviewer selection	U.S. Bureau of the Census staff; mostly experienced	Westat staff; many new hires
Interviewer training	Verbatim training by U.S. Bureau of the Census staff	Verbatim training by U.S. Bureau of the Census staff
Data collection period	Continuous survey; cases targeted for 2–week field period	Field work lasted 6 months; cases targeted for 2–week field period
Contact procedures	In person; sought household informant	Telephone appointment allowed; sample person only
Respondent selection	Knowledgeable audut in household	Sample person only
Questionnaire content	Core and supplement(s)	Modified core only
Data preparation	U.S. Bureau of the Census and National Center for Health Statistics staff rules for resolving discrepancies	Westat staff; same procedures except: refer to questionnnaire for resolving discrepancies

[1] NHIS is National Health Interview Survey.
[2] HIES is Health Interview Evaluation Survey.

Figure 1. Comparison of National Health Interview Survey procedures and Health Interview Evaluation Survey design elements

common chronic conditions among children occur at a rate of about 50 cases per 1,000 persons.) Because the NHIS is a household interview, HIES interview data were collected for all household members as well as the list-sample persons. Many of these household members were also GHA members. The total sample available for analysis included, in addition to the list sample, all such household members who signed permission forms allowing access to their GHA medical records and for whom records were located. This group was called the "supplementary" sample or "household members," as distinguished from the "primary" sample or "list-sample persons."

Because GHA contracts with the Federal Government to provide health coverage to employees and because Federal employees may be atypical in their reporting of chronic conditions in a Government-sponsored survey, the number of Federal employees in the list sample was limited in the study design. Employees of GHA, Westat, NCHS, and the U.S. Bureau of the Census were excluded from the list sample. The sample design is summarized in figure 2.

Selection of medical centers

GHA was serving approximately 160,000 people at nine medical centers in the greater Washington, D.C., area at the time of the study. To reduce the burden on GHA staff and to increase the clustering of the sample for more efficient field work, two medical centers were selected to provide the sample of study subjects. The criteria for selection included the desire to have one urban and one suburban center, a need to limit the number of Federal employees selected, and the requirement that the sample include an oversample (compared with the national population) of black persons. GHA records included other person-level information required for sample stratification (see next section), but did not include systematic notation of members' race. Thus, the oversample of black persons was affected by selecting medical centers in communities with a high proportion of black residents. The analytic sample turned out to be predominantly black persons: The list sample was two-thirds black persons, and the supplementary sample almost 70 percent black persons.

Explicit stratification of list sample

A sample intended to produce 1,000 completed interviews with medical record data was selected from three list frames: persons having a recent ambulatory care visit (60 percent); persons having a recent hospital stay (20 percent); and persons from the general membership rolls (20 percent). Individuals from the three lists were stratified by demographic characteristics (age and sex), by recency of ambulatory visit (ambulatory care frame only), and by employer group (Federal Government or not). Sampling rates within each stratum followed the guidelines described later. Although some separate analyses were planned for each of these subgroups, the intent was not to create a fully crossed design for analysis but to ensure that list-sample persons included appropriate representation by these key characteristics.

For stratification by age, two major groups (those 18–64 years of age and those 65 years and over) were broken into four age categories typically used in NHIS reports of chronic condition prevalence: 18–44 years, 45–64

Design element	Description	Purpose or reason
Study population	Members of a Washington, D.C. area health maintenance organization	To allow a full study design
Selection of medical centers	Two of nine centers selected from which to draw study sample	To reduce burden on health maintenance organization staff; to cluster sample and reduce field costs; to ensure representation black persons
Selection of list–sample persons	Sample limited to adults (18 years and over)	Chronic conditions to rare among children
	Stratification of sample by age	To ensure representation of all age groups
	Oversampling of persons 65 years and over	To allow separate analysis by age group
	Among those 18–64 years of age, oversampling of those aged 45–64 years	To ensure sufficient reports of chronic condition
	Limitation of number of Federal employees	To guard against response bias possibly associated with Federal employment
	Oversample of persons with recent doctor visits	To allow analysis of reporting of doctor visits
	Oversample of persons with recent hospital stays	To allow analysis of reporting of hospital stays

Figure 2. Summary of Health Interview Evaluation Survey sample design

Table D. Planned allocation of persons cooperating in Health Interview Evaluation Survey, by sex and age group

Age	List sample		Supplementary sample	
	Males	Females	Males	Females
	Number of persons			
All ages	500	500	374	374
0–17 years	–	–	125	125
18–64 years				
18–44 years	146	146	72	72
45–64 years	187	188	93	94
65 years and over				
65–74 years	100	100	50	50
75 years and over	67	66	34	33

years, 65–74 years, and 75 years and over. The sample was divided between the two major age groups so that each would be expected to yield at least 40 reports of the 10 most prevalent chronic conditions for that age group. Thus, persons 65 years and over were selected at a higher rate than those persons aged 18–64 years. Within the younger group, persons 45–64 years of age were selected at a higher rate than those in the general population to increase the number of chronic condition reports expected for the overall group. Within the older group, persons 65–74 years of age and those 75 years and over were selected so as to be represented at the same rates as in the general population. Equal numbers of males and females were selected in each age group. Table D presents the planned sample allocation by age and sex. The first two columns represent the planned allocation for the list sample; the next two columns represent estimated yields from the supplementary sample of other household members. A "household" is defined as one or more families sharing common cooking facilities.

The distribution of the analytic sample by age and sex is shown in table E. Again, the first two columns represent list-sample persons and the second two represent other household members. The list sample produced more females than males, partly because of higher nonresponse among males and partly because of the difficulty of identifying sufficient numbers of older men from GHA visit logs. The larger number of females in the supplementary sample may be the result of the household composition patterns of the Washington, D.C., area, a greater likelihood that female household members would be available and willing to sign permission forms, and perhaps a greater likelihood that female household members would also be GHA members.

Table E. Actual allocation of persons cooperating in Health Interview Evaluation Survey, by sex and age group

Age	List sample		Supplementary sample	
	Males	Females	Males	Females
	Number of persons			
All ages	460	545	310	393
0–17 years	–	–	147	138
18–64 years				
18–44 years	145	164	69	104
45–64 years	171	202	50	88
65 years and over				
65–74 years	85	108	30	41
75 years and over	59	71	14	22

Although the primary objective of the study was to evaluate the validity of patient reports of medical conditions, secondary objectives related to the validity of reports of the number and timing of doctor visits and hospitalizations. A random sample of the GHA membership would be unlikely to yield sufficient reports of doctor visits within the 2-week NHIS reference period or hospitalizations within the 13-month reference period for meaningful analysis. Therefore, the study design oversampled persons known to have had visits or stays within the appropriate periods.

To identify persons with recent doctor visits, a sample was drawn weekly from primary care encounter forms filled out for each patient visit. For persons with hospitalizations within the past 13 months and for a general sample of persons with neither recent doctor visits nor hospitalizations, GHA's central records system provided the sampling frame. The sample of persons with recent doctor visits and recent hospital stays was further stratified so that approximately equal numbers of persons would recall visits or stays over given time intervals. Age and sex strata were also imposed within the utilization groups, as was an upper limit of one-third of the sample representing Federal employees on each list frame.

This sampling strategy did not guarantee mutually exclusive groups as some persons selected from the general rolls could have visited a medical center between the time they were selected and the time of the interview. In addition, persons selected because of recent doctor visits may also have had hospital stays within the reference period and vice versa. Sampling procedures did not allow the selection of a given person more than once either within or across categories. However, probabilities of selection were not calculated, and the sample was not weighted for analysis.

Table F presents the planned allocation of the list sample by event history (that is, by whether the person had a recent doctor visit or hospital stay). The supplementary sample was expected to fall largely in the "persons with neither" category.

The reporting of the number and timing of medical events is subject to recall error of various kinds. Two complementary kinds of recall error are forgetting and "telescoping," or drawing in events from outside a reference period. The study design, as described, would allow analysis of forgetting or of misplacing an event within the reference period. It would not allow any meaningful

Table F. Planned allocation of list-sample persons cooperating in Health Interview Evaluation Survey, by event history, age, and sex

Characteristic	All persons	Persons with recent visits	Persons with hospitalizations	Persons with neither
	Number of persons			
All age groups, both sexes . .	1,001	601	200	200
Age				
18–44 years	292	176	58	58
45–64 years	375	225	75	75
65–74 years	200	120	40	40
75 years and over	134	80	27	27
Sex				
Male	500	300	100	100
Female	500	300	100	100

Table G. Planned allocation of list-sample persons cooperating in Health Interview Evaluation Survey, by event history revised to analyze telescoping, age, and sex

Characteristic	All persons	Persons with recent visit		Persons with hospitalizations		Persons with neither
		0–2 weeks	2–4 weeks	0–13 months	14–19 months	
	Number of persons					
All age groups, both sexes	1,001	400	201	134	66	200
Age						
18–44 years	292	117	59	39	19	58
45–64 years	375	150	75	50	25	75
65–74 years	200	80	40	27	13	40
75 years and over . .	134	53	27	18	9	27
Sex						
Male	500	200	100	67	33	100
Female	500	200	100	67	33	100

analysis of the extent to which telescoping affects NHIS reporting of medical visits and hospital stays. To analyze forward telescoping, the sample of recent doctor visits was extended to include patients who had visits just outside of the reference period, in the preceding 2 weeks. Similarly, the sample of persons with recent hospitalizations was extended to include the 6 months before the 13-month reference period. This strategy resulted in the allocation presented in table G. Again, the categories are not mutually exclusive because persons may visit the doctor in both 2-week periods.

The actual analytic sample was affected by slippage in the field period for many cases. That is, persons selected because of a doctor visit within the 2-week reference period were often not interviewed in the designated week, and the reference period shifted. Tables H and J present, respectively, the actual list and supplementary samples available for analysis by event history as noted in the medical record.

Sample selection and response rates

The sample design described in the previous section is summarized in table K. Implementing the sample selection and obtaining cooperation from selected persons was a multistep process. GHA required an initial passive informed-consent process before releasing members' names for contact. Thus, the initial step in obtaining cooperation was to mail letters to all qualifying members of the two GHA medical centers selected for the study. The letter included a return postcard that members were to send to GHA if they did not want GHA to release their names to the study. Thirteen percent of notified members returned these postcards.

The sample cases were selected and fielded over 26 weeks beginning in June 1990. Each week, a sample of recent doctor visits and recent hospitalizations and a general ("no utilization") sample were fielded. The recent-utilization cases were stratified so that equal numbers were from the previous week and from the week before, and equal numbers were from each of the preceding 2 weeks. Thus, each interview wave included members from all sampling cells, with the timing of recent-visit and recent-stay groups spread across the reference periods and the extended reference periods for analysis of telescoping. Interviewers were expected to complete their assignments in each wave within 1 week; however, a number of cases in each wave slid into the second week or later. NHIS rules indicate that such "holdover" cases have the reference period updated; the HIES followed this procedure. Because the HIES sample was an unclustered list, as opposed to the NHIS clustered-area sample, HIES interviewers fared worse than their NHIS counterparts in completing interviews during the assigned weeks.

Interviews were conducted with list-sample persons and any household members who happened to be present. Following NHIS procedures, proxy responses were obtained for household members not present during the interview. At the conclusion of the interview, list-sample persons and any household members also belonging to GHA were asked for written permission to abstract information from medical records. Second permission forms were later required for certain patients with medical problems of a sensitive nature; these were requested by mail.

A total of 1,846 household members were identified in 1,077 interviews. Of these, 1,312 were reported as GHA members. Only limited followup for permission forms was attempted for household members not available when the list-sample person was asked to sign a permission form. Of the 733 household members who did sign permission forms, medical records data were not obtained for a total of 70 persons; of these, 54 required further followup beyond what the schedule or resources would permit, 11 refused second permission forms, and 5 turned out not to be GHA members.

Table H. Actual number of list-sample persons available for analysis, by event history from the medical record, age, and sex

Characteristic	All persons	Persons with recent visits		Persons with hospitalizations		Persons with neither
		0–2 weeks	2–4 weeks but not 0–2 weeks	0–13 months	14–19 months but not 0–13 months	
		Number of persons				
All age groups, both sexes	1,005	433	233	145	51	287
Age						
18–44 years	309	116	77	27	16	105
45–64 years	373	164	73	58	16	109
65–74 years	193	86	50	33	9	51
75 years and over	130	67	33	27	10	22
Sex						
Male	460	187	114	73	21	133
Female	545	246	119	72	30	154

NOTE: Columns add to more than total because of overlap between persons with visits and persons with stays.

Table J. Actual number of supplementary-sample persons available for analysis, by event history according to medical record, age, and sex

Characteristic	All persons	Persons with recent visits		Persons with hospitalizations		Persons with neither
		0–2 weeks	2–4 weeks but not 0–2 weeks	0–13 months	14–19 months but not 0–13 months	
		Number of persons				
All age groups, both sexes	703	103	79	18	10	512
Age						
0–17 years	285	29	35	5	2	217
18–44 years	173	21	12	2	1	139
45–64 years	138	27	24	5	6	85
65–74 years	71	14	6	3	0	51
75 years and over	36	12	2	3	1	20
Sex						
Male	310	40	38	8	6	227
Femal	393	63	41	10	4	285

NOTE: Columns add to more than total because of overlap between persons with visits and persons with stays.

Table K. Number and percent of initial draw and response rates for Health Interview Evaluation Survey, by utilization group

Item	Total	Utilization group					
		Recent doctor visit		Recent hospital stay		No recent utilization	
		Number	Percent	Number	Percent	Number	Percent
Initial draw	1,615	1,132	...	277	...	206	...
Locating rate	...	...	0.96	...	0.93	...	0.93
Number located	1,540	1,090	...	258	...	192	...
Number ineligible	130	70	...	34	...	26	...
Interview requested	1,410	1,020	...	224	...	166	...
Interview response rate	...	...	0.76	...	0.78	...	0.77
Permission form requested	1,077	775	...	174	...	128	...
Cooperation rate for permission forms	...	...	0.94	...	0.95	...	0.96
Usable cases	1,017	728	...	166	...	123	...

NOTE: Twelve additional cases were dropped because the respondents refused to sign a second permission form required by Group Health Association for certain patients.

Table K presents the number and percent of list-sample persons at each stage of the locating, interviewing, and permission form process. The refusal rate was higher than anticipated (all interviews were conducted in metropolitan Washington, D.C., a traditionally difficult area in which to interview), but the locating and permission-form rates were somewhat higher than expected. The selection rates were adjusted during the field period in response to the slippage in reference weeks described earlier so that more persons than originally anticipated were selected in

the "recent doctor visit" group. (See tables G and H to compare the effective sample against the original allocation by event history.)

Data collection forms

Questionnaire

The selected GHA members were administered the NHIS core questionnaire with several modifications. Although the sampled GHA members were selected as individuals, the NHIS questionnaire is a household interview. Thus, the interview included the households of the sampled individuals.

The NHIS core interview includes the following sections:

- Household composition: names of all household members, relationships, ages, full-time active duty, hospital probe.
- Limitations of activities: current limitations and underlying conditions. All conditions mentioned are recorded for later review in condition sections.
- Other: ongoing list of conditions, other information required for administering interview.
- Restricted activities: restrictions of activities (days missed work, school, or work around the house, days in bed, cut-down days) and underlying conditions for the previous 2 weeks. Conditions recorded as previously described.
- Doctor visits: number of doctor visits or phone calls to doctor in previous 2 weeks.
- Doctor visit details: details of doctor visits reported in previous item, including condition necessitating visit. Conditions recorded under "Other."
- Health indicators: other accident or injury in previous 2 weeks, total bed days and doctor visits in last 12 months, perceived health status, height, weight.
- Condition lists (one per interview): (1) skeletal, muscular, skin disorders; (2) hearing, vision, or speech impairments; (3) digestive conditions; (4) glandular, anemia, nervous system, genitourinary system disorders; (5) heart and circulatory system problems; (6) respiratory system disorders.
- Hospital page: details of each hospital stay reported in previous 12 months (since "13-month hospital date"), including entering condition, operations, and name of hospital.
- Condition page: details of each condition reported in "Limitations of activities," "Restricted activities," "Doctor visit details," "Condition lists," and "Hospital page."
- Demographic background: information including military experience, education, race, ethnicity, employment status, marital status, income, father's last name, and social security number.

Three kinds of changes were made to this core interview for the HIES:

- The six categories under "Condition lists" were abridged and condensed into one list asked of every respondent.
- To assist in matching visits reported by household respondents with visits in the medical records, questions on the location of each visit were added to the "Doctor visits details" section.
- The HIES household composition put the list-sample person in the first column and collected relationships to this person.

The selection of chronic conditions from the six NHIS lists was based on the expected prevalence of the conditions in the sample. The 10 most prevalent conditions in each adult age group (according to NHIS estimates) were included, with the goal of having at least 40 reports of each condition from the list sample for analysis. Groups of conditions, such as heart conditions and impairments, were all included, even if some did not meet the prevalence rules, because it was felt that some conditions might be reported in response to a probe for another condition in the group. For example, a hearing impairment (which met the quantitative criteria for inclusion) might be reported in response to the probe for deafness (which did not meet the quantitative criteria), leading to the need to have both conditions included in the HIES list. The HIES questionnaire is included as appendix I.

Medical records abstraction form

Most abstraction of medical records was done from photocopies of the past 3 years' records (before the interview date) from an individual's file. A direct data entry form was tested, but the abstractors preferred a paper form, largely because of the time required to type condition names. The purposes of the abstracting were to identify all medical conditions and impairments mentioned in the record and to identify doctor visits and hospital stays within the relevant reference periods. The medical records abstracting form and instructions for abstractors are presented as appendix II.

To limit the amount of resources required for abstracting, encounter-specific information was abstracted for a limited number of medical encounters—only those felt to have direct relevance to the planned analysis. Specifically, encounters abstracted included the following:

- Any encounter within 2 months before the interview date.
- The most recent encounter, if there were none within the 2 months before the interview.
- Any health assessment (comprehensive medical checkup) within 3 years before the interview date.
- Any hospital stay within 19 months before the interview date.

In addition, abstractors recorded and coded all medical conditions from the entire 3-year medical record, regardless of the type or date of encounter for which it was noted.

Supporting materials

Materials were developed or adapted from NHIS materials for a variety of data collection support purposes, including:

- Advance letters—GHA required an initial postcard mailing to all members of the selected medical centers for informed consent. An advance letter from NCHS was sent to sampled persons.
- Labels, logs, and assignment materials—For each week's wave of sample members, computer-generated interviewer assignment materials were prepared, including a face sheet, reporting log, and a receipt-control log, as well as mailing labels to attach to the advance letter.
- Interviewer manual—The HIES used a modified version of the NHIS interviewer manual, a comprehensive guide to the conduct of the core interview, with additional sections on idiosyncratic administrative procedures, the purpose of the evaluation study, and how to describe the study to respondents, as well as question-by-question specifications for new questions.
- Abstractor manual—Abstracting procedures, definitions, and code categories were detailed in an abstractor's manual (appendix II).

Data collection

Selection and training of field interviewers

Twenty-four interviewers were recruited for the HIES, 20 of whom had previous interviewing experience. Five of the interviewers were based outside the Washington, D.C., area and traveled there as needed to supplement the local staff.

All HIES interviewers were trained as if they were new interviewers for the NHIS. An experienced U.S. Bureau of the Census trainer conducted the session, using NHIS materials that included a verbatim guide with participative lectures, practice, and exercises. Supervisory staff observed the NHIS session and conducted additional training in specific procedures, including receiving assignments, and contacting, locating, reporting, and submitting of completed work.

The 3½—day project-specific training included orientation to U.S. Bureau of the Census format and questionnaire conventions, training on the NHIS core interview, and training on additional questions. Some interviewers attended an additional day of training in general interviewer training, adapted from U.S. Bureau of the Census general training procedures.

Field data collection

Advance contact by mail—As noted in the section entitled "Review," the HIES included two advance contacts by mail. The first was a letter from GHA mailed to all members at the two selected medical centers. It gave a very brief description of the research and included a postpaid return postcard for members to return if they did not want their name released. The second letter, from the Director of NCHS, was sent to persons selected for interview. Much of the content and language of this letter was specified by the Privacy Act of 1974 and NCHS enabling legislation.

Contacting and interviewing—Unlike NHIS procedures, in which interviewers approach addresses from an area probability sampling frame, interviewers contacted HIES sample members directly, knowing their names. The initial contact was made by telephone (when a number was available). HIES required the sample person to be present for the interview. Other family members present could respond for themselves; the sample person answered for family members not present.

Following the interview, the interviewer asked all GHA members in the family for written permission to review their medical records. For adults, this permission could only be given by the persons themselves; for children under the age of 14 years, the interviewer requested the signature of a parent or guardian. For children aged 14 to 17 years, the interviewer asked for the signatures of both the child and a parent or guardian. Interviewers attempted return visits to obtain permission forms for household members (supplementary sample) not available at the time the interview was conducted.

Data collection schedule and staffing—Interviewing was conducted over 26 weeks, from June to November 1990. Interviewing went on longer than expected for a variety of reasons. Because the sample was a list of individuals, contact was required with the particular person selected, which is more time-consuming than simply interviewing a household informant. Second, the sample was not geographically clustered, resulting in further inefficiency in interviewer time. Third, GHA addresses were not always up to date, which sometimes required locating.

These factors affected the average time per completed case as well. The estimate of 4.75 interviewer hours per completed interview used in planning the study was quite low; the actual overall average was just under 7 hours per case. As interviewers tend to work part time regardless of how much work is available, the level of staffing was less than optimal, because staffing estimates were based on the lower number of hours per complete interviews.

The interviewers reported to a field supervisor, who in turn reported to the field director. The field supervisor discussed each interviewer's workload at least weekly and oversaw quality assurance measures.

Field quality assurance measures—Following the NHIS model, interviewer performance was measured in three ways: review of hard-copy interviews and feedback; observation of interviews; and verification reinterviews.

Each interviewer's first two completed cases, and 10 percent of his or her cases thereafter, were thoroughly reviewed by inhouse staff. The reviewer completed a feedback form detailing both good performance and performance requiring improvement. The field supervisor reviewed these forms with the interviewer within 1 week of

receipt of the cases. Interviewers not meeting minimum performance standards were retrained or dismissed.

Each interviewer was observed in person twice during the field period by an experienced observer. The observer followed each interview carefully, noting examples of both good and bad performance, and reviewed the results with the interviewer after they left the household.

The field supervisor conducted a short (3 minute) reinterview with 10 percent of respondents, using the standard NHIS verification interview. Verification interviews for households without telephones were conducted in person. Comparison of verification interviews with the completed work revealed no evidence of falsification.

Abstracting medical records

All signed permission forms were sent to GHA, which in turn copied the corresponding medical records, going back 3 years. Medical records abstractors then reviewed the records and identified and recorded all medical conditions and relevant encounters noted in the records.

Receipt of records

The copying process took much longer than anticipated. GHA staff were very busy, and the records were often very long. A variety of problems were encountered that prevented or delayed the copying of records. These problems included:

- Some household members signing permission forms were not GHA members or had lapsed memberships.
- Some records were temporarily unavailable when sought.
- Some records included referrals to mental health services, drug or alcohol treatment, or acquired immunodeficiency syndrome (AIDS); for such persons, GHA requested an additional permission form specifically acknowledging the sensitive information. When this additional permission was refused, no information was obtained.

Abstracting process

Abstracting procedures are described in appendix II. The abstractors were experienced at abstracting from medical records and condition coding. The staff participated in development of the abstracting form and wrote the manual. Because of delays in receiving the records from GHA, some of the abstracting work was subcontracted. The subcontracted work was subject to the same quality control and strict confidentiality procedures as that performed by Westat Inc., and they reviewed all subcontracted work.

Abstractors recorded information on abstract sheets for each case. For 10 percent of the cases, a second abstractor then reabstracted the record, noting discrepancies as they were discovered. A third member of the abstracting staff acted as arbitrator, working with the first two abstractors to resolve discrepancies.

Data preparation and processing

Data preparation activities for the HIES included medical condition coding, other coding of hard-copy questionnaires from the field interviews, retrieval of missing or ambiguous critical items, key entry of the questionnaires and abstract forms, and machine edits of all study data.

Condition coding

Conditions from both the household interview and the medical record were coded according to the *International Classification of Disease, 9th Revision, Clinical Modification* (ICD–9–CM), as modified by the NHIS. All condition coding was subject to 10-percent recoding by a second coder. A third coder then worked with the first two coders to resolve discrepancies.

Coding data into machine-readable format

NHIS coding specifications were applied to the household interview data. Coders reviewed all hard-copy questionnaires for legibility, missing or incorrectly entered data, and assignment of numeric codes to any nonnumeric values (such as "2" for "Feb" or "other—specify" fields). Coders received a full day of training, and 100 percent of their first batches (about 25 cases) were reviewed. Ten percent of subsequent batches were reviewed.

Retrieval of missing or ambiguous data

Project staff identified critical items for analysis as part of the coding specifications. When coders found missing or ambiguous responses in these critical fields, the cases were flagged for retrieval. The field supervisor conducted data retrieval, including recontacting of interview respondents.

Keying and verifying data

File layouts were prepared and keying procedures developed for the survey questionnaires to ensure comparability with the NHIS. All key entry was 100-percent verified and adjudicated by a keying supervisor. Abstract forms were also key entered, with 100-percent verification and resolution.

Editing and correcting computer files

After data were keyed and verified, they were computer edited against an exhaustive set of machine specifications. The specifications were adapted from those used by the NHIS to run on Westat software. The cleaning specifications included skip, range, and logic checks. Coders reviewed all fail-edit cases and made appropriate corrections to the data file. The edit specifications were rerun until all discrepancies were resolved. Coders also

reviewed frequency distributions for all data items as a final step in machine editing.

Machine editing was also performed on the medical records data. A series of skip and logical checks paralleled those done on the household data. Discrepancies were resolved when possible by the abstracting or analysis staff.

Discussion

The current NHIS method for obtaining reports of chronic conditions includes collecting the names of conditions associated with restricted activity, limitations of activity, doctor visits in the 2 weeks before the interview, or hospital stays in the 13 months before the interview. Following these indirect probes, the interview presents the respondent with one of the six condition checklists. The checklist asks directly: "Does anyone in the family NOW have . . . ." Depending upon the condition, the reference period is "now," "ever," or "the last 12 months." Interviewers record "yes" responses by writing the condition name on the interview booklet, alongside any conditions reported earlier through the indirect probes. Later in the interview, the interviewer asks more detailed questions about each of the conditions he or she has recorded.

In data preparation, medical coders review the reported condition names and the other information about that condition, and assign a code from the NHIS adaptation of the ICD–9–CM. One condition report may lead to multiple codes, and duplicate reports of the same coded condition are collapsed. Coders also determine whether any given condition is chronic or acute, adding an indicator to the modified ICD–9–CM code. Many conditions, such as diabetes and hypertension, are "chronic by definition," that is, they are always coded as chronic. Conditions not defined as chronic are considered chronic if they last 3 months or longer, from date of onset to the date of interview or cure. These dates are part of the detailed questionnaire condition section. A series of computer edits (11) ensure that reported conditions identified as chronic in the data file meet the NHIS definition for chronicity.

The NHIS produces prevalence estimates for chronic conditions defined by groups of NHIS-modified ICD–9–CM codes; these groups are referred to as "recode C" codes. For this report, recode C is referred to as the "NHIS recode." Note that there is no one-to-one match between the condition checklists in the questionnaire and the NHIS recode conditions for prevalence estimates and that responses to the checklist do not define whether a person has a particular NHIS recode condition. For example, a person may say "yes" to the checklist probe for dermatitis but give information in the condition section that leads to an ICD–9–CM code outside the NHIS recode group for dermatitis, such as athlete's foot. On the other hand, a person may say "no" to the checklist probe but report a condition coded into the NHIS recode group as the reason for a 2-week doctor visit.

To compare reports of chronic conditions between interview and medical record data, it would be desirable to adapt the NHIS procedures to the use of medical records. Procedures for abstracting medical records are detailed in appendix II. Abstractors recorded all conditions mentioned in 3 years' worth of medical records, using the NHIS adaptation of the ICD–9–CM, except for the chronicity indicator, which was not used. The abstracted conditions were then collapsed into NHIS recode groups.

The interview and medical record procedures differ in potentially significant ways. First, the medical record review includes no stimulus comparable to the interview's condition checklist. A more comparable procedure would be to ask a physician who had examined the person, "Does this person have . . . ?" This approach was used by the Baltimore and Hunterdon County studies (31,5). The absence of such a checklist may result in failure of the medical record to confirm accurate interview reports. For example, conditions may have been noticed by an attending physician or other medical professional but not entered in the record.

A second problem of comparability occurs in the timing of condition reports. As previously noted, the household interview asks about "now" for some conditions, or "ever" or "in the past 12 months" for others. Medical records are dependent upon when a person seeks care and often do not include information on duration. Thus, medical record reports are subject to error for "now" conditions because the person may or may not have been seen at a time near the interview date. "In the past 12 months" may also be difficult: Positive reports within the 12-month period are fairly clear, but a positive report occurring only outside the 12 months is likely not to have information on whether the condition continued to be present into the 12-month period. The only systematic review of this problem instituted for the HIES was for cataracts, where mention of cataract surgery more than 12 months before the interview date was not considered "cataracts in the past 12 months."

A third problem lies in the NHIS definition of "chronic." As already noted, some conditions are "chronic by definition." This rule is straightforward in the medical record context. However, the "chronic by duration" rule is not easily transferrable. One could derive rules for coding conditions as chronic by duration (if, for example, the medical record documented two encounters about the same condition separated 3 months or more), but these rules would not be comparable to the NHIS interview, in which duration is asked about specifically. The HIES procedures counted all conditions mentioned in the medical record as chronic, except those that most obviously were not (i.e., sunburn and poison ivy under "dermatitis").

A fourth problem in comparing prevalence from medical records with that from household interviews is references to a "history of" a condition in the record. This problem ties in with the second one previously mentioned—the timing of the condition report. For those conditions

about which the interview asks "ever had," "history of" is a comparable indication of the presence of the condition. For the "now" or "past 12 months" conditions, however, the correct treatment is less clear. HIES procedures excluded "history of" references for all conditions subject to these time frames.

It appears that prevalence estimates based on medical records would be different in many cases from those based on household interviews. There is no uniform and easy answer to the question of where truth lies. This analysis uses the methodological differences described here as well as other factors to help explain differences by condition in reporting between the household and medical record. A second analysis examines differences in agreement between the household and medical record by characteristics of the subject. The assumption in the latter analysis is that more agreement means better reporting in the interview, but the medical record is not routinely viewed as a validation mechanism for the interview report.

Analysis methods

As noted earlier, the HIES design was intended to allow evaluation of the reporting of chronic conditions as well as ambulatory medical care visits and hospital stays. Because this report focuses on the reporting of chronic conditions, this discussion of analysis methods is limited. Future reports will describe other aspects of the study.

Once the medical record data were coded, edited, and the condition data reclassified into the NHIS recode, the two sources were compared for each of 23 chronic conditions, person by person. The checklist included probes for more than 23 conditions, and orthopedic impairments and deformities were collapsed into one category for HIES analysis. Blindness and other visual impairments were combined, as were deafness and other hearing impairments. Rheumatism and congenital heart disease were excluded from the analysis because of very low prevalence among the study sample. For each condition, a person was classified into one of four cells as shown in table L, depending upon whether the condition was present in the interview file and the medical record file. Multiple conditions for a person in one NHIS recode classification were counted the same as a single condition. Prevalence for the analytic sample was calculated using the formulae in the notes of table L.

Table L. Matrix for matching interview with medical record reports of chronic conditions

Condition noted in medical record	*Condition mentioned by respondent in interview*	
	Yes	*No*
Yes	A	C
No	B	D

NOTES: A is positive match, B is false positive, C is false negative, and D is negative match. Prevalence by Health Interview Evaluation Survey report calculated as (A+B)/N. Prevalence by medical record calculated as (A+C)/N. Kappa value calculated as $2((A\times D) - (B\times C))/((A+B)\times(B+D)+(C+D)\times(A+C))$.

Comparison of prevalence from the two sources is an aggregate measure of agreement; it says nothing about how well individual cases matched. The Kappa statistic was used to analyze the agreement at a person level. Kappa is a weighted proportion, with possible values ranging from -1 (perfect disagreement) through 1 (perfect agreement). Regarding Kappa as a measure of interrater reliability, Landis and Koch (20) suggest that values of less than 0.4 represent poor-to-fair agreement, 0.4–0.6 moderate agreement, 0.6–0.8 substantial agreement, and 0.8–1.0 almost perfect agreement. It is possible for two sources to produce identical prevalence with very low agreement at the individual level. If the medical record was considered "the truth" in such a case, the rates of interview overreporting and underreporting would both be high and about the same.

Results

Survey statistical differences

As described earlier, the HIES sample was drawn from the membership rolls of an HMO in the Washington, D.C., area. Oversamples were drawn of older persons, those with recent hospital stays and those with recent doctor visits. In addition, the sample was by design drawn from medical centers serving communities with large black populations. Therefore, black people are much more heavily represented in the HIES sample than in the general population. These features of the HIES design limit direct comparisons to the NHIS. As shown in table 1, the HIES sample is older and contains more black people, people of higher income, and more highly educated people than the U.S. population. Because of the oversample of persons with recent medical utilization, the HIES sample is also probably sicker than the U.S. population. In addition, the sample is limited to one geographic area, and all HIES sample persons have health insurance coverage and access to basic health care services.

The combination of these factors, some of which can be controlled for in examining HIES results and some of which cannot, should have significant effects on prevalence of chronic conditions derived from HIES household interviews when compared with the same rates derived from the NHIS. Also, NHIS prevalence estimates are weighted to the U.S. noninstitutionalized civilian population; HIES data are presented unweighted.

The prevalence of chronic conditions reported in the interview for list-sample persons is about twice that of the general U.S. population according to the 1989 NHIS. Adding household members (the "supplementary sample") reduces the differential to 60-percent greater prevalence overall in the HIES. Much of this difference is attributable to the HIES oversample of persons 65 years of age and over. Tables 2–5 compare the NHIS and HIES prevalence of the chronic conditions studied by age group. Column 1 of these tables presents the weighted NHIS estimates (prevalence per 1,000 population) for the particular age group for 1989, and column 2 shows the comparable prevalence rate for the HIES, including both list-sample persons and household members. Column 3 is the raw difference between the two rates, and column 4 is the percent difference between columns 1 and 2. In table 2, for example, the HIES prevalence of arthritis is 13 persons per 1,000, or 27 percent higher, than the NHIS estimate. The "All conditions" row shows, in columns 1 and 2, the total number of conditions listed that are reported per 1,000 persons by the NHIS and HIES, respectively.

Column 4 of tables 2–5 shows that the HIES had an overall prevalence of the selected chronic conditions that was 41 percent higher than the NHIS for persons 18–44 years of age, 27 percent higher for those aged 45–64 years, 14 percent higher for persons aged 65–74 years, and 11 percent higher for persons aged 75 years or over. This decrease by age may be related to oversampling for HIES persons with recent doctor visits (assumed to be sicker); the effect of this sampling strategy on prevalence may be lessened with older persons. Some of the remaining discrepancy between the two sources is attributable to particularly high rates of hypertension and diabetes, which are more prevalent among black people than white people, because the HIES sample is disproportionately composed of black people. However, the NHIS shows lower prevalence of most other conditions studied here for black persons.

In summary, the HIES sample has reported more chronic conditions than one would expect from a nationally representative sample, even when HIES age and race oversampling are taken into account. The list sample's greater likelihood of having a recent doctor visit probably accounts for some of this difference. Also, all HIES sample persons are insured and have access to health care. People who do not seek medical care may be less likely to report chronic conditions that require professional diagnosis. The effects of geographic clustering and differences in procedures between the HIES and NHIS are unknown, but procedural differences (summarized in figure 1) were minimized and probably have little effect.

Interview reporting compared with medical record, by condition

Tables 6 and 7 present the results of matching interview and medical record reports for the 23 chronic conditions studied for list-sample persons and household members, respectively. The conditions are arranged in order of their NHIS recodes, with summary lines for heart conditions in general and for heart rhythm disorders. Following the typology of table L, the tables show numbers of cases falling into positive match (type A), negative

match (type D), apparent interview overreport (type B), and apparent interview underreport (type C). They also present prevalence calculated from HIES interview and medical records using the formulae in table L, and compare these rates by showing net and proportional overreporting by the interview as opposed to the medical record. Finally, the tables present the Kappa values describing person-level agreement between the interview and medical record. Tables 8 and 9 present the same data, without the heart condition summary rows, in descending order of Kappa values.

As shown in tables 6 and 7, about two-thirds of the conditions were overreported in the HIES interview, and these were divided into two roughly equal groups (by proportional net overreport among list-sample persons) of conditions overreported by 200 percent or more and conditions overreported by about 100 percent or less. Kappa values ranged from around 0 to about 0.82 for list-sample persons and were generally slightly lower for household members. In tables 8 and 9, the conditions with the highest Kappa values are all underreported by the interview.

The proportional differences from tables 6 and 7 are presented in figure 3, with the conditions arranged from highest to lowest proportional net overreporting. Figure 3 reveals a fairly consistent pattern of higher interview reporting versus the medical record for list-sample persons than for household members. The interview reported noticeably higher rates for list-sample persons for varicose veins, allergic rhinitis without asthma, chronic sinusitis, constipation, and orthopedic impairment. Higher relative rates for household members were reported for heart murmurs, migraine headache, hardening of the arteries, hemorrhoids, and ischemic heart disease. Although the HIES did not include an experimental design to examine the effects of proxy reporting, it is reasonable to speculate that much of the difference between list-sample persons and household members in the proportion of overreporting by condition is attributable to proxy response, because all list-sample persons were self-respondents, but many household members were not. Comparing proportional overreporting controls for many of the artifactual differences between the two populations—the list-sample

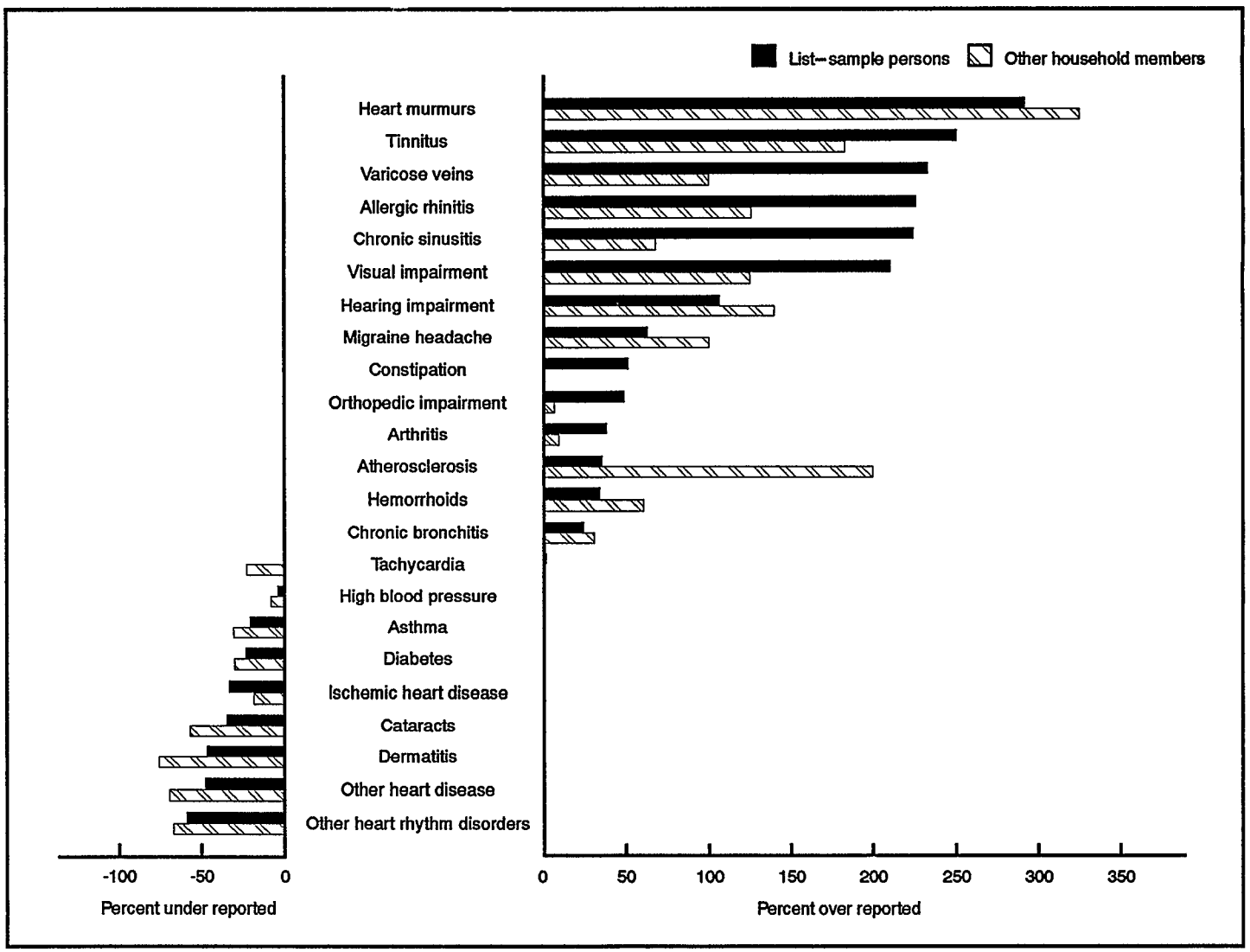

Figure 3. Percent overreport by interview compared with medical record in the Health Interview Evaluation Survey

persons are older, sicker, and have more recent doctor visits than the household members.

Previous studies have used other measures of agreement. In particular, Harlow and Linet (17) accumulated findings from a number of studies using only positive responses to measure agreement. (They also presented percent agreement and Kappa values where these could be calculated.) Their measures were "percent of positive reports in records matched by interviews" (A/(A+C) in the terminology of table L) and "percent of positive reports in interviews matched by records" (A/(A+B) in table L terms). Similar measures were used by Madow (2) as "rate of underreporting" and "rate of overreporting," respectively.

Table 10 compares the Harlow and Linet statistics for the Health Insurance Plan (HIP) and Kaiser Permanente (KP) studies and the HIES. It also calculates the HIES measure "net overreporting" from these statistics. Table 10 contains striking similarities (between KP and HIES for arthritis and hearing impairments and between KP and HIP for asthma) and striking differences (between all three studies for visual impairments). The three studies were done in HMO settings but in different geographic areas, in different times, and using somewhat different procedures. For example, the HIP and KP studies used 1 year's medical records, but the HIES used 3 years'; the KP study included experiments in questionnaire design, the HIES and HIP did not. The NHIS questionnaire and coding procedures changed considerably between the times HIP, KP, and HIES studies were conducted. The HIP and KP studies used the seventh revision of the *International Classification of Diseases*, but the HIES used the ninth; the chronic condition recodes and condition checklists on which the HIES was based were considerably expanded following the time of the earlier studies. The HIP and KP studies used one recode for most heart conditions, but the HIES used six of the eight current NHIS recodes. The KP study combined asthma and allergic rhinitis, and the HIES separated them. Thus, the comparison of specific conditions across these three studies must be done with care and must be limited to fairly broad generalities.

Possible reasons for mismatches

Tables 6 and 7 indicate considerable variation in the rates of agreement across conditions, as well as in the differences in prevalence estimates between the sources. There are several plausible explanations for both type B and type C mismatches. Possible reasons for interview reports not confirmed by the medical record (mismatch type B) include (with examples from the list in tables 6 and 7):

- Medical treatment was not sought for the reported condition, either because it was not thought to be serious, the person was averse to seeking treatment, the condition was felt to be embarrassing, or the condition (e.g., hemorrhoids, constipation, chronic sinusitis, hearing impairment) was treated by patent medication or other nonprofessional means.
- The reported condition (e.g., tinnitus or constipation) is a symptom of a more serious condition and is not recorded in the medical record because it was subsumed by the causative condition or not felt to be worthy of note.
- The reported condition (e.g., varicose veins or heart murmur) is stable and requires no ongoing treatment.
- An impairment (e.g., orthopedic) has not necessitated treatment.
- Respondents may confuse two condition names or misdiagnose a condition.

Possible reasons for conditions appearing in the medical record but not being reported in the interview (mismatch type C) include:

- The condition name is not familiar to the patient and therefore is not remembered or recognized in the interview.
- The condition (e.g., cataracts) is not salient to the respondent, perhaps because it is at a threshold level and has not caused any discomfort or worry.
- The respondent's definition of a condition in the checklist is different from that intended by the study.
- The respondent can only describe a condition in a vague way that is not included in the NHIS definition for the prevalence estimates.
- The medical provider did not tell the patient about the condition.
- The respondent is aware of the condition (e.g., impairment), but denies its presence.
- The respondent does not recall having the condition because of cognitive limitations.

Thus, one would expect agreement between interview and medical records for conditions that (a) are fairly well defined from both the clinical and lay perspectives, (b) require ongoing treatment, (c) have commonly recognized names, and (d) are salient to the respondent because they cause discomfort or worry. The conditions with the highest Kappa values—diabetes, high blood pressure, asthma, and ischemic heart disease ("heart attack" and angina)—meet these criteria.

Condition-level prevalence

The prevalence and match ratios between interview reports and medical records described so far have been conducted at a person level—that is, if a person reports one or more conditions within an NHIS recode group, that person is counted as one occurrence. However, the NHIS prevalence estimates are prepared at a condition level. Each mention of an ICD–9–CM condition within an NHIS recode group counts as one occurrence (but multiple reports of the same ICD–9–CM condition for a person only count as one). For most of the conditions examined in this report, the person-level prevalence and condition-

level prevalence are virtually identical. The exception is heart conditions; multiple conditions within one NHIS recode are often present for one person. Table 11 presents the prevalence for heart conditions in the study sample at both the person level and the condition level. The NHIS recode groups examined are ischemic heart disease, tachycardia or rapid heartbeat, heart murmurs, other heart rhythm disorders, and "other selected diseases of the heart." Not included because of their relatively low prevalence are NHIS recode groups for rheumatic heart disease and congenital heart disease.

Effect of broader condition typologies

Several of the possible reasons for type C mismatches and one of the reasons for type B mismatches given earlier relate to interview respondents' not knowing, misremembering, or confusing condition names. Cox and Iachan (10) found that agreement between survey respondents and medical records in reasons for visit was considerably higher for higher levels of aggregation in condition coding. Madow (3) used a "loose match" that the author admitted was "not well specified" as well as a "tight match" in comparing interview reports with physician reports of chronic conditions. The idea is that interview respondents often know generally what is wrong but cannot specify a condition in sufficient detail for agreement with medical records with relatively highly differentiated classification schemes.

From the perspective of evaluating prevalence estimates on the NHIS, the loose-match concept has some limited applicability. The aggregation of ICD–9–CM codes into the NHIS recode for the purpose of making prevalence estimates may be viewed as somewhat arbitrary, more so for some conditions than for others. One concept of loose match, then, is that the NHIS recode classifications could be expanded to include conditions that are clinically equivalent to those in the existing group. In other words, would a typical physician classify the person as having the broad clinical entity (such as "arthritis") based upon the information available from the medical record?

Constructing an extension of the NHIS recode groups under consideration here began with a review of mismatches. Based upon other conditions reported by the interview or medical record for mismatches (types B and C), additional clinically equivalent ICD–9–CM codes were added to the following chronic conditions:

- Arthritis
- Dermatitis
- Hardening of the arteries
- Chronic bronchitis

In addition, allergic rhinitis and chronic sinusitis were combined and expanded into one upper respiratory category. The analysis based on these broadly defined condition groupings will be referred to as the "loose match." Details of the loose-match condition map are presented in appendix III.

The revised map was used to evaluate the mismatches from the NHIS recode-level analysis. First, only persons classified as type B or type C mismatches for the specified conditions were evaluated. The purpose of this analysis was essentially to evaluate the NHIS recode definitions by determining how often one source reported a chronic condition within the definitions when the other source reported a clinically equivalent but excluded condition. Then, the loose-match map was applied to the negative matches to examine the overall effect of the revised map on prevalence. The results are presented in table 12 for list-sample persons only. (Note that chronic bronchitis is not included in table 12; there were no changes as a result of the loose match for this condition.)

Table 12 includes three groups of five columns. The first group presents the match classification and Kappa value when applying the NHIS recode definition of the specified condition. These columns also appear in table 6. The second group of columns, labeled "loose match 1," presents the results of applying the expanded condition definitions to cases originally falling into mismatch types B and C. Comparing the first and second groups of columns indicates how much of the apparent discrepancy between the two data sources may be attributable to reporting equivalent conditions in different terms. The third group of columns, labeled "Loose match 2," presents the results of applying the expanded definitions to negative matches (type D) as well as mismatches. Comparing this group of columns with the others shows the effect on prevalence if one were to use the expanded definitions in place of the NHIS recode C classification.

Condition-specific results

The discussion in this section is based on tables 2–5 for all conditions, on table 10 for conditions included in the earlier studies, on table 11 for heart conditions, and on table 12 for the loose-match conditions.

Arthritis—When controlling for age, the prevalence of arthritis for all HIES sample persons is roughly comparable to NHIS estimates (tables 2–5). The largest difference is for persons 18–45 years of age (27 percent higher in the HIES). Arthritis was reported somewhat more frequently by households than it was recorded in medical records—38 percent more for list-sample persons and 12 percent more for household members (tables 6 and 7). Agreement between the interview and medical record on the presence of arthritis was moderate (Kappa = 0.40 for list-sample persons, 0.48 for household members), perhaps surprisingly low for a well-known condition often treated by prescription drugs. The discrepancy between medical records and interviews appears to be the result of several factors: imprecise or erroneous use of the term "arthritis" by respondents, lack of physician visits for this affliction, physicians not recording arthritis, even if present, and the somewhat limited definition of arthritis in the NHIS recode. Persons with joint pain of unknown cause may be self-diagnosed as "arthritis." Bursitis and tendinitis might

also be reported as arthritis—these would be reporting errors. Such errors would make arthritis appear to be overreported. Medical records may not include mention of arthritis even if the patient has it. The condition may not be severe enough to be worth noting, the arthritis may never have been a reason for a visit, or the physician may have written something more specific, such as cervical radiculopathy, which is caused by arthritis, but is not considered arthritis in the NHIS recode definition.

By the NHIS recode definition, arthritis includes pyogenic arthritis, unspecified infective arthritis, crystal arthropathies, rheumatoid arthritis and other inflammatory polyarthropathies, osteoarthrosis and allied disorders, other and unspecified arthropathies, ankylosing spondylitis, and spondylosis and allied disorders. For the loose match, this definition has been expanded to include 13 other conditions that involve inflammation of the joint. They also either occur with such regular frequency that they can be considered part of the disease, as in the case of Sjogren's syndrome, or they commonly occur as a principal result or sequela of arthritis, as in cervical radiculopathy and sciatica. The full list of conditions added for the loose match is: Sjogren's syndrome, cervical radiculopathy, sciatica, spinal stenosis, neuritis or radiculitis, carpal tunnel, spondylitis, chondromalacia of the knee, periarthritis of the shoulder, costochondritis, disc disorder, lumbosacral or cervical degeneration, and gout.

As shown in table 12, when applied only to previous mismatches, the loose match resulted in a 15-percent reduction in the number of type B mismatches (interview reports not confirmed by the medical record) and only a 4-percent reduction in type C mismatches (medical record reports only). Thus, it appears that interview respondents are somewhat likely to report clinically equivalent conditions as arthritis but fairly unlikely to do the reverse. Applying the loose match to negative matches as well as mismatches results in an overall 27-percent increase in type C mismatches but has almost no effect on type B mismatches relative to applying the loose match just to original mismatches. This result indicates that many persons with clinically equivalent conditions (but not arthritis) according to the medical record are not reporting arthritis in the interview. Only one additional positive match was created by extending the loose-match criteria to original negative matches. In summary, the loose match helps to explain some of the apparent overreporting of arthritis by interview respondents. If prevalence estimates of arthritis were to be made from medical records, an expansion of the NHIS recode might be appropriate. However, there is little evidence to support expanding the NHIS recode definition of arthritis for classifying interview responses.

Some diagnoses may be confused with arthritis and may accompany it but are not invariably associated with it. These kinds of conditions were not included in the loose match. A case-by-case review of mismatched interviews and medical records revealed a large number of these conditions, many pertaining to restricted mobility and painful joints and backs. Tendinitis, for example, may accompany arthritis, but just as often may not be associated with it. Similarly, tenosynovitis, myositis, and tendinitis do not always, or even frequently, involve the joint. All of these conditions involve inflammation around the joint, and could be confused with the diagnosis of arthritis. Pain in joints was not considered specific enough to be considered arthritis. Many type B mismatches remained type B mismatches after the loose match because they involved conditions not considered clinically equivalent.

Arthritis is more prevalent among the elderly than the nonelderly, and physician contacts also increase with age. Because physician contacts increase with age, one might expect agreement between the medical record and interview to improve with age. However, the Kappa values vary only from a low of 0.26 for the group 45–64 years of age to a high of 0.39 for the group aged 65–74 years among list-sample persons. These are all in the poor-to-fair agreement range. Percent net overreport increases with age except for those 75 years of age and over. List-sample persons and household members reported similarly.

Dermatitis—Dermatitis is more prevalent among the HIES sample than would be expected from NHIS estimates in all age groups except for persons 18–44 years of age (tables 2–5). Prevalence from the medical record is considerably higher than from the HIES interview for both list-sample persons and household members (tables 6 and 7), and agreement between the two sources is low (Kappa = 0.23 for list-sample persons and 0.17 for household members).

The presence of chronic dermatitis is perhaps the most ill-defined of any of the conditions studied. Determination of chronicity (presence of a condition for 3 months or longer) is very difficult from the medical record because much of the apparent underreport may be the result of acute episodes of dermatitis in the medical record. Sunburn and poison ivy, which are included in the NHIS recode definition of dermatitis, were excluded from the definition for classifying medical record conditions because they are unlikely to last 3 months or more.

As defined by the NHIS recode, dermatitis includes the following ICD–9–CM codes: 690, Erythematosquamous dermatosis; 691, Atopic dermatitis and related conditions; 692 Contact dermatitis and other eczema; 693, Dermatitis due to substances taken internally; and 694, Bullous dermatoses. However, a more liberal definition of dermatitis (inflammation of the skin), is practical. Match results using this expanded definition are presented in table 12. The conditions included in the loose match are presented in appendix III.

Ten of the 33 type B mismatches (interview reports not confirmed by the medical record), but only 2 of the 81 type C mismatches (medical record report only), were matched using the loose-match criteria. These additional matches increased the Kappa value from 0.23 to 0.36. However, applying the loose-match criteria to negative

matches resulted in an overwhelming increase in type C mismatches. Although a substantial proportion of interview respondents reporting originally unverified cases of dermatitis were confirmed by the loose match, there is no evidence of interview respondents reporting dermatitis as any clinically equivalent condition in the loose match.

Impairments—Impairments represent a different set of issues when comparing interview reports and medical records than morbidity conditions do. Two attributes of impairments make this true. One is that the perception of an impairment is different for the patient and the physician to the extent that they may disagree as to whether the patient has an impairment. The other is that impairments do not always necessitate physician visits.

This analysis included reviews of the following impairments: blindness, other visual impairments, deafness, other hearing impairments, and deformity and orthopedic impairments. Because of limitations in the HIES design and the relatively low prevalence of some types of impairments, the NHIS recodes for blindness and other visual impairments (201 and 202), for deafness and other hearing impairments (203 and 204), and for orthopedic impairments and deformities (228–240) were collapsed for matching and analysis. Within the deformity and orthopedic-impairment group, any code on the medical record could thus match any other within that classification on the interview. Thus, hammertoe could be matched to chronic elbow pain because these are both within the collapsed categories.

As shown in tables 6 and 7, visual and hearing impairments, including tinnitus, had high net overreports in the interview, ranging from 100 percent to 250 percent for list-sample persons, and within the same range for household members. Agreement was low for tinnitus and visual impairment, but in the fair range for hearing impairment. Tinnitus is entirely a subjective phenomenon, but hearing impairments may be noted by physicians in the course of seeing patients for any reason. Agreement tended to be highest for persons 75 years of age or over for these conditions.

For orthopedic impairments and deformities, the interview and medical record produced very similar prevalence, but with very low agreement (Kappa = 0.17 for list-sample persons and 0.12 for household members) despite (or perhaps because of) the broad match criteria. Thus, the similarity in prevalence appears to be coincidental.

The interview questions for impairment ask about the existence of a symptom falling into the previously named categories and about the cause of the impairment. In general, the pattern among the type B mismatches for impairment was that the impairment was reported to the interviewer but the cause was not. In many cases of type B mismatch, a probable underlying disease (cause) was on the medical record, and the resulting impairment was not on the medical record. This is particularly true for visual and orthopedic impairment where about half the type B mismatches have a probable cause on the medical record. Thus, the same information may not be located in both places. Rather, the mismatches show the effect of using two different instruments—an interview and a medical record—to attempt to collect the same information. The interview reflects a response to a direct question about impairment. The medical record would only note an impairment if it was a reason for visit or clinically significant in itself. For example, many of the orthopedic impairments were probably caused by arthritis. However, the impairment was not noted on the medical record, and the cause of the impairment was not known to the patient and was therefore not reported in the interview.

The cause is not always reported on the medical record because often the respondent has never seen a physician for an impairment. This pattern is notable for the hearing impairments, where there are five times more type B mismatches than type C mismatches.

The type C mismatches may be the result of differing perceptions about impairment. The physician may note an impairment, but the patient may compensate for it so well that it does not seem worthy of reporting to an interviewer as an impairment. Type C mismatches may also result from different nomenclature used by physicians and patients, as with all condition mismatches. As discussed earlier, it is possible that type C mismatches were the result of a report in the medical record for an acute episode, not a chronic condition.

The mismatches also reflect coding instructions. For example, when the interviewer asks if anyone has blindness in one or both eyes, a positive response would be recoded to 201 or 202. However, the medical record would show the results of an acuity exam to be recoded as 201 or 202. The medical record might have an indication of presbyopia, the degeneration of sight because of age. Presbyopia is not matched to poor vision under the NHIS recode. The respondent may have said that "old age" caused their poor vision. However, old age is not specific enough to be matched to presbyopia.

Case-by-case review of the mismatches reveals that approximately half of them would be matched if symptoms were matched to probable underlying diseases or medical conditions. However, the great number of positive-interview, negative-medical record combinations leads one to believe that impairments are frequently reported to interviewers but not to physicians. In addition, patients may have reported impairments to physicians, but the impairments were either not noted, because they were not diagnostically relevant, or were noted as "patient complains of _____," which would not have been coded.

An interview may be a better source of data on impairment than a review of medical records. This is because an impairment reflects self-perception, which is unknown by the physician, and because the interview specifically asks about impairment, which physicians often do not.

The HIES interview prevalence of impairment is generally about what would be expected from NHIS estimates or slightly lower, except among persons 75 years of age

and over (tables 2–5). The HIES sample's greater access to medical care may be related to the lower rates of impairment.

Tinnitus—Alone among the conditions studied, a diagnosis of tinnitus, or ringing in the ears, is based solely on a patient's report. Thus, one would not expect a high level of type C mismatches, that is, reports found only in the medical record. In fact, there were only nine type C mismatches for list-sample persons and two for household members (tables 6 and 7). There were also very few positive matches, but a fair number of type B mismatches (interview reports not confirmed by the medical record), leading to a low Kappa (0.17 for list-sample persons, 0.34 for household members), and indicating that tinnitus was often not reported to medical professionals or not recorded if reported.

Tinnitus was reported in the HIES at roughly the rates expected from NHIS estimates, except for persons 75 years of age and over (table 5). For these persons, the rates are almost double those of the NHIS estimates; the relatively greater extent of self-reporting for older persons in the HIES may partially explain this difference. It is likely that proxy reports of tinnitus would not be as comprehensive as self-reports. Tinnitus was reported much more often for list-sample persons than for household members (tables 6 and 7), which reflects the higher proportion of older persons in the list sample than among household members, but may also be affected by the presence of proxy reporting for household members.

Cataracts—Cataracts were more prevalent by interview report among the study sample than would be expected from NHIS estimates (tables 2–5). For persons 45–64 years of age, the relative prevalence in the HIES study sample is almost 120 percent higher than the NHIS estimate for that age group. Access to preventive care, including eye examinations, may contribute to this difference; cataracts are often detected in routine exams long before they cause discomfort or loss of vision.

Agreement between the interview and medical record (Kappa) was slightly higher for cataracts than the average across conditions for list-sample persons (table 6) but was somewhat lower than average for household members (table 7). In terms of agreement, cataracts seem to be more poorly reported by proxy than average for the conditions studied.

In comparing the HIES interview prevalence with the medical record, cataracts appear relatively underreported by the interview. This finding is not surprising because it is unlikely a person would report cataracts unless they had been detected by a medical professional. Thirty-four percent more list-sample persons and 58 percent more household members were shown as having cataracts in the medical record than were reported by the interview. Several factors may contribute to this difference. First, the NHIS asks about cataracts "in the past year." If a person had cataract surgery more than 1 year before the interview date, the proper report would be "no." The medical record review covered 3 years before the interview and included some persons recorded as having cataract surgery. A second, and probably more important, reason for the interview underreport is the likelihood of mention in the medical record of "early cataracts" that may not be mentioned to the patient, may be forgotten, or may not be considered as really having cataracts by the interview respondent.

Type B mismatches were relatively uncommon; 27 of 83 interview reports were not confirmed by the medical record. However, a review of medical records for these apparently false positives indicates some possible confusion with similar (but not equivalent) conditions present in the records, such as eye floaters, diabetic retinopathy, uveitis, and dry eye syndrome. Some respondents who did not report cataracts mentioned in the medical record (type C mismatches) did report other eye problems. However, these problems were typically confirmed by the record. Thus, any confusion by respondents about the definition of cataracts seems to contribute to overreporting rather than underreporting.

Several indications from this study point to the likelihood of a significant underreport of cataracts in the NHIS: the relatively higher reported prevalence among a study population with good access to preventive eye care, the relative underreporting by the interview against the medical record, and the apparent additional underreporting by proxy respondents. Only an apparent slight tendency for definitional confusion to result in overreport counterbalances these factors.

Constipation—Constipation (asked as "frequent constipation" in the past year in the NHIS checklist) was relatively much more prevalent (more than 100 percent for all study subjects) in the HIES sample than would be expected from the NHIS. The greatest difference is in the group 18–44 years of age (table 2). Part of this higher prevalence may be attributable to the higher proportion of black people in the HIES sample; prevalence from the NHIS is higher for black people than for white people (32).

Prevalence from the interview and from medical records is similar for both list-sample persons and household members, but Kappa values for both are relatively low (tables 6 and 7). Thus, although there are about the same number of reports from the interview as from medical records, most reports from both sources are unconfirmed. The presence of apparently false positives is not surprising because constipation is somewhat subjective, afflicted persons may not seek care, and constipation as a symptom may not be recorded in the medical record when the condition causing it is. On the medical record side, both the difficulty of determining chronicity (3 months or more) and the timing (past year versus earlier) make the record potentially unreliable in providing reports that meet the NHIS definition.

In summary, the similarity between prevalence obtained from the interview and prevalence in the medical record appears coincidental. Intuitively, it seems that the interview would be a better source for prevalence data

than the medical record. The fact that the Kappa value for household members (0.22) is twice as high as for list-sample persons may indicate that persons who tell family members about problems with constipation are more likely also to seek medical treatment.

Diabetes—Diabetes has exceptionally good agreement between interviews and medical records: Kappa = 0.82 for list-sample persons and 0.74 for household members. Most of the mismatches are of type C—reported in the medical record but not in the interview. Thus, the interview had a net underreport of 23 percent for list-sample persons and 30 percent for household members. The high rate of agreement reflects the specific nature of the disease, and the general agreement between patients and physicians on the terminology used to describe it. Diabetes is also a condition that requires a specific test, and therefore physician visit, to diagnose, so it would be noted in the medical record.

There were only three type B mismatches, where an interview report was not confirmed by the medical record. Review of these cases showed that two of the three had elevated blood sugar readings noted in their medical record, and the other one had a diagnosis of hyperglycemia. These three mismatches, then, are probably the result of some confusion by the patients as to their exact diagnoses.

The type C mismatches, of which there are 40, are likely to be accurate indicators of underreporting by interview respondents. It is unlikely that the respondents reported this condition under any other name. Review of the medical records of these respondents showed that the majority had hypertension, and about one-fourth had heart disease. Most had a number of serious conditions but appeared to be reporting only hypertension or some other condition such as arthritis. It may be that respondents with multiple related conditions identify one as the source of their health problems—perhaps the most serious or the earliest diagnosed.

Prevalence of diabetes in the HIES sample was consistently higher than would be expected from NHIS age-specific estimates (tables 2–5). However, this difference in most age groups is likely the result of the relative overrepresentation of black people in the HIES sample; NHIS prevalence estimates of diabetes in black people are about twice that for white people, except among those under 45 years of age (32), for whom the prevalence among black people is less than 20 percent higher than that for white people. The HIES prevalence in the group aged 18–45 years is nearly 2.5 times the NHIS estimate for that age group. Given this pattern of reporting between the HIES interview and medical record and the high access to care among the HIES sample, the HIES findings suggest that the NHIS may significantly underestimate the prevalence of diabetes in younger persons.

Migraine headache—Prevalence of migraine headache in the HIES sample was not significantly different than would be expected from the NHIS (tables 2–5). Compared with the medical record, the HIES interview overreported migraine by 63 percent for list-sample persons and 100 percent for household members. Agreement between the interview and medical record was about the same for these groups, and a little worse than the average across conditions (tables 6 and 7). Although migraine is a fairly well-defined condition clinically, the popular concept of migraine may be indistinguishable from "bad headache." Indeed, headaches were mentioned in the medical record for some type B mismatches (those with interview reports not confirmed by the medical record). Migraine is also a condition for which, once it is diagnosed, some patients seek no further treatment. Thus, there is good reason to suspect error in household reporting for migraine as well as in reliance on medical records for prevalence data. The HIP study showed a net underreport of "headache and migraine, chronic" and much lower agreement than the HIES for migraine (table 10), which may be because of the broader definition used in the earlier study.

Heart conditions—Heart disease was reported much more often in the HIES interview than would be expected from NHIS prevalence estimates, particularly among younger persons. "Other selected diseases of the heart," which includes vague reports such as "heart trouble," showed the largest difference among those 18–45 years of age (table 2), and heart rhythm disorders showed the largest difference among older people (tables 4 and 5). Oversampling people for the HIES with recent doctor visits and hospital stays may have influenced these rates.

With the exception of heart murmurs, heart conditions were more prevalent from the medical record than from the interview report. Heart murmurs represent a special case in this condition group because they are often detected early in one's life and usually require no treatment. One reason for the relatively greater prevalence of heart conditions in the medical record is the phenomenon of individuals with multiple heart conditions (in different NHIS recode classifications). Often such people report only one or two of the conditions in the interview (sometimes vaguely as "heart trouble"), apparently lumping together such diverse problems as angina and tachycardia. Only ischemic heart disease (including angina and myocardial infarction) showed a Kappa value above 0.40, at 0.62 for list-sample persons, and 0.68 for household members. The terms "angina" and "heart attack" are apparently among the most salient and least ambiguous to household respondents of the chronic conditions studied.

In contrast to the HIES, the HIP and KP studies (table 10) both showed little net overreporting of heart conditions and also showed relatively good agreement between the interview and medical record or examination report. However, the KP study and some HIP tables used only one major category for heart conditions, and the classification of heart disease changed somewhat between the seventh and ninth revisions of the ICD. Gordon (16) found a considerable net overreport of heart conditions by self-report as opposed to medical records, but net underreport, compared with a physical examination.

Just as some people have multiple heart problems classified into several NHIS recodes, some have multiple problems within an NHIS recode classification. Of the conditions studied, the heart conditions are nearly unique in this regard. The NHIS prevalence estimates are condition-level statistics (that is, they represent the number of distinct conditions per 1,000 persons), so a person with two distinct conditions within a recode C classification would contribute two counts to the estimate. The HIES analysis has examined only person-level prevalence, where a person can only contribute one count within a recode C classification. Table 11 compares person-level prevalence with condition-level prevalence for heart conditions in the HIES, for list-sample persons only. The "person-level prevalence" columns of table 11 replicate the information in table 6 for heart conditions. The "condition-level prevalence" columns show prevalence using normal NHIS rules. Aside from ischemic heart disease, there is no significant difference between the person-level and condition-level rates for household reports. Again, the reporting for angina and heart attack (myocardial infarction) appear relatively good—interview respondents are somewhat able to distinguish the two conditions and report them separately. However, on the medical records, there are much bigger differentials between person-level and condition-level rates for ischemic heart disease and other selected diseases of the heart than in interview reports. Heart rhythm disorders (except heart murmurs) show a slight increase in prevalence at the condition level on the medical record side but no change on the interview side. Overall, relative underreporting of heart conditions in the interview jumps from 29 percent at the person level to 44 percent at the condition level. Excluding heart murmurs, the rates of relative underreporting are 40 percent at the person level and 53 percent at the condition level.

Case-by-case review of persons with reported heart conditions revealed that the interview respondent often mentioned one or two, perhaps ill-defined, heart ailments, but the medical record lists several specific problems, often falling into two or more NHIS recode groups. Of the mismatches in the NHIS recode group "other selected diseases of the heart," 39 percent of the type B mismatches fall into the "unspecified ill-defined" subcategory (e.g., "heart trouble"), but all of the type C mismatches are more specific ailments, further supporting this notion.

The loose match for heart conditions consisted of a person-level collapsing of the three NHIS recodes under heart rhythm disorders into one and collapsing all heart conditions into one recode. Note that this approach violates the "clinical equivalence" criterion for the loose match described earlier but follows the NHIS practice of presenting prevalence estimates for heart conditions in the aggregate categories. In table 12, the "loose match 1" row for heart rhythm disorders shows an increase in the number of positive matches over the original match by NHIS recode, and a Kappa value considerably higher than that for two of the three NHIS recodes individually. These results indicate that there may be some confusion within the heart rhythm disorder categories. Excluding heart murmurs from the loose match (loose match 2) further improves the Kappa value, mostly by eliminating more than half the type B mismatches from the totals.

The loose match for all heart conditions reveals a similar pattern. The Kappa value for all heart conditions combined is 0.58, and 0.60 if heart murmurs are taken out. Again, this result indicates some confusion about the exact nature of heart trouble by some respondents. The improvement in agreement is also related to the earlier observation of multiple heart conditions (across NHIS recodes) being more likely in the medical record than in the interview. Even at the aggregate level, however, there remains considerable underreporting of heart conditions in the interview as opposed to the medical record.

Thus, the evidence from the HIES data suggests that NHIS prevalence estimates for heart conditions may be low for several reasons: Interview respondents may fail to mention a heart condition at all, people with conditions in multiple NHIS recodes may report only one or two, and people with multiple conditions within one NHIS recode may report fewer than are delineated in the medical record.

Hypertension—The reporting pattern for hypertension is similar to that for diabetes. After diabetes, hypertension had the highest rates of agreement of any of the chronic conditions reviewed (Kappa = 0.72 for both list-sample persons and household members), and a comparison of the prevalence between interview and medical record shows a slight net underreport by the interview. Like diabetes, hypertension requires a medical provider's diagnosis, so the net underreport is not surprising. However, some 59 list-sample persons reported hypertension that was not confirmed by the medical record. Some of these type B mismatches may be the result of patients receiving the diagnosis of hypertension before the 3-year period covered by abstracted medical records or by self-testing of their blood pressure.

More than one-fourth of type C mismatches for hypertension had long medical records, indicating a poor health status. About one-third of the type C persons had some type of heart disease, which was often reported in interviews. As discussed under heart conditions, such respondents may have felt they covered the topic by reporting the most salient of their circulatory problems or may have reported a general problem meant to encompass both heart disease and hypertension.

Like diabetes, the HIES prevalence for hypertension far exceeds what would be expected from NHIS estimates and most notably for persons 18–45 years of age (table 2). Also like diabetes, hypertension is more prevalent among black than white people according to the NHIS (32) (about 69 percent higher for persons under age 45, with gradually decreasing differentials in older age groups). However, this does not explain the large differences in tables 2 and 3 (HIES 233 percent higher for persons 18–44 years of age, 90 percent higher for persons 45–64 years of age). Once again, the relatively higher access to care of

the HIES sample may be related to the higher-than-expected prevalence of hypertension. If this relationship does exist, the NHIS estimates of the prevalence of hypertension in the general population under 65 years of age may be considerably below the true prevalence. Another way of stating the same thing is that the general population may have considerable undetected or unacknowledged hypertension among the groups under 65 years of age, a supposition consistent with comparisons of medical histories and clinical examinations in the National Health Survey (15).

Hardening of the arteries—The HIES interview and medical record showed very low prevalence of atherosclerosis, also called hardening of the arteries—19 interview reports and 14 from the medical record for list-sample persons. Only one of these reports matched, resulting in a Kappa near zero.

From a clinical standpoint, hardening of the arteries requires a physician's diagnosis and is a gradual process occurring in all persons (with no definitional threshold). The term may mean conditions other than atherosclerosis to some respondents, which could explain some of the type B mismatches. In addition, some type B mismatches might be the result of the patient reporting atherosclerosis, a general condition, when they have developed more specific conditions as a result. The more specific condition would more likely be recorded on the medical record.

Atherosclerosis, NHIS recode 510, consists of atherosclerosis of any arteries. It would be clinically consistent to match ischemic heart disease and angina pectoris to atherosclerosis for analytical purposes. Ischemic heart disease is a form of atherosclerosis. Atherosclerosis is the only cause of ischemic heart disease. Angina pectoris is also a sequela of atherosclerosis. Because they are clinically consistent, ischemic heart disease and angina pectoris are included in the loose match for atherosclerosis. This will result in a match for the patient who reported "hardening of the arteries," but whose physician reported "angina."

Cerebral atherosclerosis is also clinically consistent with atherosclerosis, although not included in the NHIS recode, and is therefore included in the loose match. Because cerebral atherosclerosis is a more specific diagnosis than hardening of the arteries, one would expect it to be on the medical record but not the interview. Claudication, (angina in the leg) is also a common sequela of atherosclerosis and is thus also included in the loose match. As with the two previously described conditions that are included in the loose match, adding claudication should result in matching some previously denoted type B mismatches.

As shown in table 12, applying the loose-match criteria to the type B and C mismatches results in a dramatic improvement in the match for atherosclerosis—a Kappa value of 0.686 as opposed to 0.045. Of the 16 type B and C mismatches that became loose matches, 10 were previously matched on ischemic heart disease. These figures suggest two possible explanations for the low match rate on atherosclerosis. First, persons with conditions of the circulatory system, including heart conditions and hypertension, may tend to summarize their complaints in one or two condition names. If so, atherosclerosis may be part of this phenomenon. Second, persons who have developed ischemic heart disease may report an earlier diagnosis of atherosclerosis, whether or not they report the more recent condition, although the medical record (limited to the past 3 years) makes no mention of the earlier condition.

Extending the loose match to previous negative matches results in a great increase in the prevalence of atherosclerosis, both from the interview and medical record. Because the loose match essentially combines atherosclerosis with ischemic heart disease, the second loose-match results look very similar to the figures for ischemic heart disease.

The loose-match results are relatively encouraging for the accuracy of NHIS estimates, in the sense that persons reporting atherosclerosis appear to be clinically correct much of the time. However, the loose match raises the question of how to define the "true" prevalence of atherosclerosis. If some, but not most, people who have developed ischemic heart disease report an earlier diagnosis of atherosclerosis, then the NHIS prevalence estimates may be either somewhat too high or considerably low, depending upon how the prevalence rate is defined.

Varicose veins of the lower extremities—Varicose veins were reported in the HIES at roughly comparable rates to the NHIS (tables 2–5). They were overreported in the interview compared with the medical record by more than 200 percent for list-sample persons and 100 percent for household members (tables 6 and 7). Persons afflicted with varicose veins may not seek medical advice or treatment for many years after a medical consultation.

In the HIP and KP studies, varicose veins were not limited to those in the lower extremities. The HIP figures for varicose veins were similar to those in the HIES, but the KP study, although showing a comparable rate of false negatives to the other studies, did not show net overreporting by the interview.

Hemorrhoids—Hemorrhoids may be considered a stigmatizing condition, and thus one would expect net underreporting in an interview. However, the HIES interview showed a net overreport of 35 percent against the medical record for list-sample persons and 58 percent for household members (tables 6 and 7). The less frequent reporting by list-sample persons than by household members, which is contrary to the typical pattern, may reflect some respondent embarrassment at mentioning their own hemorrhoids. Among adult household members, those present for the interview reported hemorrhoids at about the same rate as the medical record, but proxies reported almost three times more hemorrhoid cases than the medical record for persons not present in the interview.

The general apparent overreport by the interview compared with the medical record may reflect self-medication, mis-self-diagnosis of hemorrhoids, or, as suggested by Marquis (12), possible disinclination of medical

professionals to check for them in an examination. Further, hemorrhoids discovered during an examination for another condition, such as colorectal cancer, may not be noted in the medical record. These speculative reasons and the relatively low rate of agreement between the interview and medical record (Kappa = 0.27 for list-sample persons and 0.32 for household members), suggest that the actual prevalence of hemorrhoids in the sample population may be underestimated by both sources.

Hemorrhoids were reported at about the same rate by HIES respondents as would be expected from the NHIS estimates, except among those 75 years of age and over (table 5), who reported hemorrhoids about 90 percent more than the NHIS estimate for persons in that age group.

The HIP and KP studies showed similar net overreporting of hemorrhoids (table 10), with the HIP study showing slightly less agreement between interview and examination report than HIES, and the KP study showed considerably more agreement.

Chronic bronchitis—The agreement between the interview and medical record for chronic bronchitis is very low (Kappa = 0.09 for list-sample persons and 0.14 for household members). However, the prevalence is similar between the two sources, with a net interview overreport of 25 percent for list-sample persons and 31 percent for household members (tables 6 and 7). There were only 5 positive matches for list-sample persons, but 40 type B mismatches (interview report only) and 31 type C mismatches (medical record report only).

Part of the reason for the discrepancy between medical records and interviews is the NHIS recode definition of chronic bronchitis. Half of the 31 type C mismatches are interpreted from the medical record as "bronchitis not specified as acute or chronic." These cases may have been acute and would not have been reported in the interview.

In 11 of the 40 type B mismatches, the respondent reported chronic bronchitis, and the medical record indicated acute bronchitis. It cannot be determined whether the medical record reflected an acute episode in a person with the chronic condition, which would mean that both sources were correct, or if one source misreported.

The NHIS and HIES prevalence estimates for chronic bronchitis differ by as much as 58.1 percent for the group 65–74 years of age, and as little as 5.9 percent for those 75 years of age and over.

Several related diseases occurred concurrent with chronic bronchitis in the HIES survey and medical records for some individuals. Possible related conditions include rhinitis, chronic cough, upper respiratory infection, sinusitis, asthmatic bronchitis, pneumonia, and chronic obstructive pulmonary disease (COPD). Among these, only COPD is diagnostically consistent enough to be used for a loose match. There were no reports of COPD among list-sample persons in the HIES, however, so no loose-match analysis was performed for chronic bronchitis.

Asthma—Asthma has fairly good agreement between medical records and household interviews, compared with other conditions, despite its relatively low prevalence among the study sample. The interview showed a net underreport of 20 percent for list-sample persons and 30 percent for household members, with both sample groups showing fairly high rates of agreement (Kappa = 0.55 for list-sample persons and 0.58 for household members).

Asthma, like the other conditions with at least fair agreement (Kappa greater than 0.40), requires a physician visit for diagnosis. Severe asthma may require many physician visits throughout the year, which would increase the likelihood of agreement between the interview and medical record.

On the other hand, several factors may account for cases where the two sources did not agree. The interview asks whether the respondent has had asthma in the past 12 months. The patient may have had it, but it could legitimately not be on the medical record if it did not require medical supervision. Alternatively, the medical record may have mentioned asthma more than 1 year before the interview, and the patient may not have suffered an attack in the interview reference period. Yet another possibility is that the patient could have actually had a similar but different condition, such as acute bronchitis, and erroneously reported it as asthma.

Bronchitis not specified as acute or chronic is included in the NHIS recode for asthma. Therefore, in some cases where the medical record appears to note asthma, but the interview does not, the medical record could be reflecting acute bronchitis, and not asthma. Also, the medical record could have a notation of asthma, but it might not have been recent or important enough for the respondent to report it in the interview.

Although chronic bronchitis and asthma appear frequently together, they are distinct diseases and were not grouped together for a loose-match analysis.

Upper respiratory conditions—Two chronic conditions, chronic sinusitis and allergic rhinitis without asthma, show similar patterns of reporting, with many more interview reports than medical record notations. The net overreport for the interview is 226 percent and 221 percent for chronic sinusitis and allergic rhinitis, respectively, for list-sample persons. The net overreport rates for household members are about one-half those for list-sample persons. These conditions have among the lowest match rates of all conditions studied, with Kappa values of only around 0.1 for list-sample persons. The Kappa values are higher, around 0.2, for household members. This difference, and the difference in net overreport for the two samples, suggests that respondents may report more cases, including perhaps less serious cases, for themselves than for others. More serious cases would be both more likely to receive medical attention and more likely to be noticed by other family members.

Two attributes of these conditions also contribute to the reporting pattern described here. First, chronic sinusitis and allergic rhinitis may be easily confused. In the NHIS recode definitions, allergic rhinitis includes hay

fever, pollinosis, and spasmodic rhinorrhoea, but chronic sinusitis includes postnasal drip and sinus drainage. For example, some respondents, may consider postnasal drip to be a symptom of allergy rather than sinusitis. Second, both allergic rhinitis and chronic sinusitis are frequently self-treated. If they were never the reason for a medical visit or involved in a diagnosis in the 3 years covered by the medical record, they would probably not be in the record. Review of the mismatched medical records and interviews revealed that often these two conditions occur in tandem. In addition, the medical record showed many sample persons reporting these conditions having lower respiratory conditions.

Chronic sinusitis is both a disease entity and a description of specific symptoms. However, allergic rhinitis, is a disease that can manifest itself with a variety of symptoms, including sinusitis. Chronic rhinitis and chronic nasopharyngitis are also sequelae of allergic rhinitis. Because of this relationship, the four conditions—allergic rhinitis, chronic sinusitis, chronic rhinitis, and chronic nasopharyngitis—were grouped together for a loose match. The results are presented in table 12. Under "loose match 1," the row "Upper respiratory problems" shows the results of combining allergic rhinitis and chronic sinusitis; a small increase in agreement indicates some possible confusion of the two conditions, but the pattern of much higher prevalence from the interview report persists. Similarly, adding chronic rhinitis and chronic nasopharyngitis to the loose match ("loose match 2") increases the agreement slightly, but does not affect the overall pattern of mismatches.

The HIES prevalence is consistently higher than the NHIS estimates for both conditions, more so for allergic rhinitis. This tendency may be related to the climate around Washington, D.C., which is damp and laden with pollen and other irritants much of the year.

Effect of person characteristics on reporting

As previously noted, the HIES sample was skewed in a number of ways when compared with the U.S. population: All persons in the study were HMO members, the population from which the sample was drawn included a much higher proportion of black people than the general U.S. population, and the design oversampled older people and people with recent doctor visits and hospital stays. Some effects of these design features were apparent when the relative prevalence of the studied chronic conditions was compared between NHIS estimates and the HIES sample. However, the analysis has not included differentials in reporting behavior between NHIS estimates and the HIES sample across different person characteristics.

Tables 13 and 14 summarize the reporting of all chronic conditions together by various demographic and other person characteristics, for list-sample persons and household members, respectively. Rather than prevalence, as in tables 6 and 7, these tables present the mean number of NHIS recode conditions per person. As in the earlier tables, a particular NHIS recode condition is only counted once per person, even though for some conditions a person may have more than one condition falling into the recode. The net and proportional overreport and Kappa columns are similar to those in tables 6 and 7; that is, they are computed from the total numbers of type A and D matches and type B and C mismatches across all conditions.

Demographic characteristics

Age—Distinct patterns of increasing number of conditions and decreasing net and percent of overreported conditions are apparent across increasing age groups among list-sample persons. Kappa values are markedly lower for the youngest (under age 45) and oldest (75 years of age and over) age groups. The increasing number of conditions reported with age is expected; the other patterns are attributable to different causes. The lower Kappa values and higher overreporting for persons under 45 years of age are in large part the result of the mix of conditions reported for this age group. The most common conditions among those studied include upper respiratory ailments and orthopedic impairments, which show generally lower-than-average agreement between the data sources and are among the most overreported conditions. Younger persons may also be less likely to seek treatment for relatively minor conditions. The oldest group are more likely to have heart conditions and cataracts, conditions that are generally underreported in the interview and that have relatively low Kappa values. Older persons may also be more likely to have cognitive problems that interfere with accurate reporting and may be less likely to report less serious conditions because they have more conditions overall.

Previous research has yielded mixed results with regard to reporting differences by age (table L), with both younger and older respondents appearing to be more in agreement with medical records in different situations. The HIES analysis suggests that these differences may be attributable in part to differences in what conditions were included in the respective analyses.

Sex—List-sample women in both the age group under 65 years and the group 65 years and over were more likely to overreport compared with the medical record than men. Men showed only slightly higher agreement with the medical record. There was little difference in the number of conditions reported per person by the medical record between sexes.

Women under 65 years of age were much more likely to report upper respiratory problems, migraine headaches, hemorrhoids, and heart murmurs not confirmed by the medical record than were men under age 65. Among those aged 65 years and over, women were more likely than men to report arthritis and varicose veins not confirmed by the medical record. Both sources showed considerably higher prevalence of these two conditions among women as well. Thus, greater reporting by women appears to be largely for conditions that might be viewed as embarrassing (hemorrhoids, varicose veins, possibly arthritis) or that are

usually relatively minor (heart murmurs, chronic bronchitis, allergic rhinitis, chronic sinusitis). For the latter set of conditions, the medical record shows little difference in prevalence between sexes, but the interview shows considerably greater prevalence among women. By and large, the NHIS estimates these conditions as significantly more prevalent among women as well.

As with age, previous research has yielded mixed results on whether men or women have higher agreement with medical records. Again, this pattern may be attributable in part to the specific conditions studied.

Race—The racial composition of the HIES sample allows comparisons only between black people and members of other races. Black persons both under age 65 and age 65 or over in the HIES overreported somewhat more compared with the medical record than did their counterparts of white and other races. However, black people's reports showed more agreement with the medical record than those of white people and people of other races. Overall, the patterns of reporting by condition between races were fairly comparable to those in the NHIS.

Socioeconomic characteristics

Employment status—People not currently employed reported considerably higher numbers of chronic conditions than did the employed in both the age group under 65 years and the group 65 years and over. The unemployed showed slightly higher agreement with the medical record in both age groups, but there was no pattern for overreporting against the medical record.

Income—The total number of conditions per person declined as family income increased in the NHIS; family income may vary with age, affecting the number of conditions per person. Proportionate overreporting against the medical record was higher for those with family incomes under $30,000, although no particular pattern of agreement between the interview and medical record was apparent by family income.

Education—Agreement between the interview report and medical record did not vary by education. College graduates did overreport noticeably less than those with less education, although the pattern for those with less than a college degree was that those with more education overreported more.

Medical services utilization

Two-week doctor visits—People with doctor visits in the 2-week reference period (according to the medical record) had somewhat more chronic conditions per person than those without such doctor visits in both the age group under 65 years and those 65 and over. Those with 2-week doctor visits showed considerably less overreporting against the medical record and slightly more agreement with the medical record in both age groups. This finding is consistent with that of the HIP study (1).

Health assessment—GHA offers a comprehensive medical checkup called a health assessment to its members. People who had had health assessments in the 2 years before the interview date were comparable to those without health assessments in the number of chronic conditions in the medical record. However, people with recent health assessments overreported against the medical record at lower rates and showed somewhat higher agreement with the medical record than persons without recent health assessments.

Thirteen-month hospital stay—As expected, persons with hospital stays within the 13-month reference period had more chronic conditions per person than those without recent hospital stays. Those with 13-month hospital stays overreported against the medical record less in both the age group under 65 years and those 65 years of age and over. However, those persons 65 years and over with 13-month hospital stays had lower rates of agreement with the medical record than those without stays, and the reverse pattern was true for persons under age 65.

Self-perceived health status

Both the interview report and the medical record showed a strong correlation between perceived health status and the number of chronic conditions per person. Persons reporting themselves in excellent health overreported the fewest conditions compared with the medical record but also had a noticeably lower rate of agreement with the medical record. These observations may indicate that persons reporting themselves in excellent health are less likely to report chronic conditions than those reporting very good, good, fair, or poor health.

Number of chronic conditions reported

Tables 13 and 14 compare the reporting of chronic conditions for persons reporting different numbers of conditions included in the interview checklist. The proportion of overreporting increases with the number of conditions reported. However, the Kappa values for persons with four or more conditions are lower than those for persons reporting fewer conditions in both the list and supplementary samples. Persons reporting four or more conditions may be more prone to overreporting than others, or they may tend to report a higher proportion of conditions not likely to be confirmed by the medical record.

Response status

The HIES was not designed as a formal experiment comparing self- and proxy reporting. However, the inclusion of household members in the analytic sample allows ad hoc comparison of responses for adult household members who were present during the interview (and presumably responded for themselves in most cases) and adult household members who were not present, for

whom proxy responses were obtained. The final rows of table 14 present totals for adult household members by whether they were present during the interview.

Those not present for the interview had fewer conditions reported than those who were present but also had fewer conditions in the medical record, confirming the observation of Berk, Horgan, and Meyers (8) that persons not present for the interview appeared to be healthier (from the perspective of number of conditions) than those who were present. The Kappa values for the two groups are virtually the same, but persons present for the interview overreported, compared with the medical record, at a higher rate (19 percent) than those not present (5 percent). Household members present for the interview overreported at about the same rate as list-sample persons (21 percent), who were also self-respondents. The number of reports for specific conditions is too small for meaningful analysis at the condition level between the self- and proxy reporters.

Discussion

The HIES was designed to evaluate the reporting of chronic conditions in the NHIS by comparing interview responses to medical records for the same individuals; it is the first such evaluation in nearly 20 years. The major strength of the evaluation is the use of a full study design in which both positive and negative reports from the interview and medical record can be compared for all study subjects. Some additional features that enhance the ability to examine chronic condition reports and focus on demographic subgroups of particular policy interest are oversampling of older persons and persons with recent health care visits and the selection of an HMO with a large minority membership.

The study population comprised HMO members interviewed about themselves; with a moderate additional effort, interview and medical record data on household members were obtained, which replicated the findings and permitted some analysis of proxy reporting. HIES methods and procedures followed those of the NHIS as closely as possible, so that HIES findings could be used to help evaluate the NHIS.

The research described here from the HIES has supported previous studies' observations that survey interviews and medical records often provide very different pictures of the prevalence of chronic conditions in a population. The HIES design and analysis have notassumed the medical record to be a "gold standard" with regard to the presence of chronic conditions but rather have focused on interpreting the differences between the two data sources. Some of these differences are artifacts of the procedural differences in acquiring and interpreting reports from the two sources, but others are inherent in the definitions, manifestations, and need for professional medical care of the conditions studied. Regardless of the reason for the differences, their existence has ascertained the accuracy of survey-based prevalence estimates of chronic conditions.

It is helpful to classify chronic conditions in several ways. For the first group of conditions, consider those that require a physician's diagnosis to identify and are likely to require ongoing medical care. Among the conditions studied, the following may be considered in this group: diabetes, most heart conditions, high blood pressure, and asthma. Two conditions not included in this list are cataracts, which do require a physician's diagnosis but do not require ongoing care, and hardening of the arteries, which meets the criteria but may be subsumed in a more immediate condition.

Once diagnosed, the presence of these conditions is likely to be noted in the medical record within a 3-year period. (Medical records examined in the HIES covered the 3 years prior to the date of the interview.) These conditions are also all considered "chronic by definition" by NHIS coding rules; that is, ever having the condition counts as having it at the time of the interview. For these conditions, the medical record may be considered as near a "gold standard" as is possible to find. Each of these conditions (with the exception of heart murmurs, a special case among heart conditions) was underreported by the HIES interview against the medical record, from a low among list-sample persons of 4 percent underreport for hypertension to a high of 48 percent underreport for "other selected diseases of the heart," while most other conditions were apparently overreported. Diabetes, asthma, high blood pressure, and ischemic heart disease also had the highest rates of agreement among all conditions studied, with Kappa values among list-sample persons ranging from 0.55 for asthma to 0.82 for diabetes. Thus, one may conclude that interview reports of these conditions are likely to be accurate, but that their prevalence may be underestimated by survey data. The problem of underestimation may be particularly problematic for heart disease, where individuals with more than one condition (according to the medical record) often reported fewer conditions in the interview.

The other conditions apparently underreported by HIES respondents were cataracts and dermatitis. Although the medical record may have overstated the prevalence of cataracts (counting some that were surgically removed before the "past year"), it is likely that cataracts are underreported by survey respondents. Many notations of "beginning cataracts" or "early cataracts" were noted in the records; these cases may not be salient enough for respondents to remember or may not have even been mentioned by the provider discovering them. Dermatitis is a condition for which chronicity is difficult to determine from the medical record—the apparent HIES underreport likely does not indicate a corresponding underreport from the NHIS.

At the other end of the spectrum from the first group of conditions are those that can only be diagnosed by patient report: Constipation and tinnitus from the list studied here meet this criterion. Both were significantly overreported by HIES list-sample persons, and both had very low rates of agreement with the medical record. For

these conditions, the medical record reports shed almost no light on the accuracy of interview-based prevalence estimates. However, they do suggest that many people do not report these conditions to their physicians, so that medical records would underestimate prevalence.

Another group of conditions is those that may be salient to the persons suffering from them but that may not require ongoing treatment and thus may not be in the medical record. These include orthopedic impairment, visual and hearing impairment, migraine headache, varicose veins, allergic rhinitis, and chronic sinusitis. These conditions were substantially overreported in HIES interviews, but, with the exception of visual and hearing impairments, all had substantial numbers of type C mismatches (medical record report only) as well—more type C mismatches than type A matches (reported in both interview and medical record). The presence of impairment is a subjective determination, whether by a provider or an individual; for other conditions in this group, some self-diagnosis probably occurs. The extent to which such self-diagnosis would conform to a physician's opinion cannot be determined from the data, but undoubtedly some interview reports for conditions in this group (other than impairment) are false positives. Overall, medical records provide a different picture of prevalence for this group of conditions than do interviews and the rates from medical record data would likely be considerably lower.

Some conditions studied are less well defined than others from the household respondents' perspective and from a clinical perspective. These issues were discussed in the context of the "loose match" that grouped clinically equivalent conditions. Some interview reports of arthritis, although technically "false positives," appear to match clinically equivalent conditions in the medical record. The extent to which other reports of arthritis may reflect more generalized joint pain could not be determined. Circulatory conditions are a special case of definitional problems from a respondent's perspective. The current research has provided some evidence that people with several heart or other circulatory conditions tend to group them under one heading. The loose-match analysis found evidence of this for heart conditions; it may be true for the larger family of circulatory conditions as well. That is, persons with heart disease may report "high blood pressure" as the global condition that encompasses all their circulatory problems.

Potentially the most interesting of the HIES design features with regard to its effect on study findings is the universal access to health care and the emphasis on preventive care in an HMO setting. (An HMO population was selected for the HIES because an HMO is one of the few health care settings in which a full-design record check is feasible; it includes a complete set of provider records.) Evidence from our analysis and previous research indicates that people who get medical care are better able to report the presence of chronic conditions. This is true for the first group of conditions described earlier because a physician's diagnosis is required for a person to know that he or she has the condition. Among the general population, many of whom have less access to medical care than the study sample, what would be the effect on reporting of chronic conditions and thus on prevalence rates? It may be that the conditions underreported in the HIES would be more underreported in a national sample—both because of people who have not had a diagnosis and because of people who have not sought medical care after receiving a diagnosis. The former would not know they had the condition, and the latter might forget or deny its existence. Conversely, self-diagnosed conditions might be more overreported among the general population than in the HMO study sample, as persons with limited access to care might have less chance to have their diagnoses refuted.

Finally, proxy effects seem to be present in the reporting of chronic conditions. Some of the differences between the list sample and household members are consistent with differential reporting by proxies. Generally, with the exception of embarrassing or stigmatizing conditions, one would expect estimates based on proxy reports to be lower than those based on self-reports. Overall, interview-derived prevalence for household members, some of whom were reported by proxies, was closer to that from medical records than it was for list-sample persons, who were all self-respondents. The comparison of self-responders and persons with proxy reports among household members indicated that proxy reports included considerably less overreporting, but agreement with the medical record was about the same for the two groups within the supplementary sample. The net effect of proxy reports on NHIS prevalence estimates is difficult to determine from the analysis described here.

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List of Detailed Tables

Table 1. Number and percent of persons in Health Interview Evaluation analytic samples, by selected characteristics

Person characteristic	List number	Sample percent	Household number	Member percent	Combined number	Sample percent	U.S. population percent
Age							
Under 18 years	0	0.0	285	40.5	285	16.7	26.3
18–44 years	309	30.7	173	24.6	482	28.2	42.8
45–64 years	373	37.1	138	19.6	511	29.9	18.9
65–74 years	193	19.2	71	10.1	264	15.5	7.3
75 years and over	130	12.9	36	5.1	166	9.7	4.7
Sex and age							
Female:							
65 years and over	179	17.8	63	9.0	242	14.2	7.0
Under 1 year–64 years	366	36.4	330	46.9	696	40.7	44.5
Male:							
65 years and over	144	14.3	44	6.3	188	11.0	5.0
Under 1 year–64 years	316	31.4	266	37.8	582	34.1	43.5
Race and age							
Black:							
65 years and over	156	15.5	37	5.3	193	11.3	1.0
Under 1 year–64 years	518	51.5	452	64.3	970	56.8	11.3
White or other:							
65 years and over	167	16.6	70	10.0	237	13.9	11.0
Under 1 year–64 years	164	16.3	144	20.5	308	18.0	76.7
Employment and age							
Employed:							
65 years and over	71	7.1	23	3.3	94	5.5	1.6
18–64 years	595	59.3	244	34.8	839	49.2	46.6
Unemployed:							
65 years and over	251	25.0	84	12.0	335	19.6	10.4
18–64 years	86	8.6	66	9.4	152	8.9	15.2
Income[1]							
$0–$19,999	148	17.1	32	4.9	180	11.8	27.6
$20,000–$29,999	119	13.8	51	7.8	170	11.2	23.3
$30,000–$49,999	263	30.4	198	30.3	461	30.3	(1)
$50,000 and over	335	38.7	373	57.0	708	46.6	32.9
Education[2]							
Less than high school	167	16.7	69	16.6	236	16.7	24.4
High school graduate	307	30.7	138	33.2	445	31.4	38.7
Some college	204	20.4	81	19.5	285	20.1	17.1
College graduate	321	32.1	128	30.8	449	31.7	19.9

SOURCES: U.S. Bureau of the Census, Statistical Abstract of the United States: 1989 (109th edition). Washington, D.C., 1990.
1990 (NCHS) unpublished data and (32).

[1]For U.S. population, categories are $0–$19,999, $20,000–$34,999, $35,000 and over.

[2]Persons 18 years of age and over; for U.S. population, persons 25 years and over.

Table 2. Prevalence of selected chronic conditions in persons 18–44 years of age from National Health Interview Survey estimates and from Health Interview Evaluation Survey household reports, by condition

Condition name and NHIS recode number		*NHIS prevalence*	*HIES prevalence*	*Number of overreports per 100 persons, HIES compared with NHIS*	*Percent overreports by HIES compared with NHIS*
All conditions	...	925.8	1,302.9	377.1	40.7
Arthritis	101	48.9	62.2	13.3	27.3
Dermatitis	113	36.0	31.1	–4.9	–13.6
Blindness or other visual impairment	201	27.2	18.7	–8.5	–31.4
Deafness or other hearing impairment	203	47.8	41.5	–6.3	–13.2
Deformity or orthopedic impairment	228	138.3	114.1	–24.2	–17.5
Tinnitus	240	14.4	20.7	6.3	44.1
Cataracts	241	3.5	4.1	0.6	18.6
Constipation	314	11.9	37.3	25.4	213.8
Diabetes	403	10.7	37.3	26.6	249.0
Migraine headache	406	57.2	64.3	7.1	12.4
Heart disease	...	36.1	89.2	53.1	147.1
Ischemic heart disease	502	4.1	2.1	–2.0	–49.4
Heart rhythm disorders	...	25.3	49.8	24.5	96.8
Tachycardia or rapid heartbeat	503	5.3	4.1	–1.2	–21.7
Heart murmurs	504	17.1	37.3	20.2	118.4
Other heart rhythm disorders	505	2.9	8.3	5.4	186.2
Other selected diseases of heart	507	6.7	37.3	30.6	457.4
High blood pressure	508	56.0	186.7	130.7	233.4
Hardening of the arteries	510	0.1	2.1	2.0	1,974.7
Varicose veins, lower extremities	513	24.8	27.0	2.2	8.8
Hemorrhoids	514	57.2	83.0	25.8	45.1
Chronic bronchitis	601	44.5	43.6	–0.9	–2.1
Asthma	602	41.3	45.6	4.3	10.5
Allergic rhinitis without asthma	603	108.8	209.5	100.7	92.6
Chronic sinusitis	605	161.1	184.6	23.5	14.6

NOTE: NHIS is National Health Interview Survey and HIES is Health Interview Evaluation Survey.

Table 3. Prevalence of selected chronic conditions in persons 45–64 years of age from National Health Interview Survey estimates and from Health Interview Evaluation Survey household reports, by condition

Condition name and NHIS recode number	NHIS prevalence	HIES prevalence	Number of overreports per 100 persons, HIES compared with NHIS	Percent overreports by HIES compared with NHIS
All conditions ...	1,657.8	2,099.8	442.0	26.7
Arthritis ... 101	253.8	254.4	0.6	0.2
Dermatitis ... 113	30.6	54.8	24.2	79.1
Blindness or other visual impairment ... 201	45.1	35.2	–9.9	–21.9
Deafness or other hearing impairment ... 203	127.7	97.8	–29.9	–23.4
Deformity or orthopedic impairment ... 228	155.5	148.7	–6.8	–4.4
Tinnitus ... 240	45.8	37.2	–8.6	–18.8
Cataracts ... 241	16.1	35.2	19.1	118.8
Constipation ... 314	20.9	31.3	10.4	49.8
Diabetes ... 403	58.2	135.0	76.8	132.0
Migraine headache ... 406	51.2	41.1	–10.1	–19.7
Heart disease ...	118.9	199.6	80.7	67.9
Ischemic heart disease ... 502	54.5	72.4	17.9	32.9
Heart rhythm disorders ...	40.1	97.8	57.7	144.0
Tachycardia or rapid heartbeat ... 503	14.9	35.2	20.3	136.4
Heart murmurs ... 504	16.4	45.0	28.6	174.4
Other heart rhythm disorders ... 505	8.8	17.6	8.8	100.1
Other selected diseases of heart ... 507	24.3	29.4	5.1	20.8
High blood pressure ... 508	229.1	434.4	205.3	89.6
Hardening of the arteries ... 510	16.1	15.7	–0.4	–2.8
Varicose veins, lower extremities ... 513	57.8	93.9	36.1	62.5
Hemorrhoids ... 514	74.9	88.1	13.2	17.6
Chronic bronchitis ... 601	53.7	37.2	–16.5	–30.8
Asthma ... 602	41.5	39.1	–2.4	–5.7
Allergic rhinitis without asthma ... 603	87.4	119.4	32.0	36.6
Chronic sinusitis ... 605	173.5	201.6	28.1	16.2

NOTE: NHIS is National Health Interview Survey and HIES is Health Interview Evaluation Survey.

Table 4. Prevalence of selected chronic conditions in persons 65–74 years of age from National Health Interview Survey estimates and from Health Interview Evaluation Survey household reports, by condition

Condition name and NHIS recode numbers		*NHIS prevalence*	*HIES prevalence*	*Number of overreports per 100 persons, HIES compared with NHIS*	*Percent overreports by HIES compared with NHIS*
All conditions	...	2,393.4	2,734.8	341.4	14.3
Arthritis	101	437.3	473.5	36.2	8.3
Dermatitis	113	33.5	45.5	12.0	35.7
Blindness or other visual impairment	201	69.3	79.5	10.2	14.8
Deafness or other hearing impairment	203	239.4	212.1	–27.3	–11.4
Deformity or orthopedic impairment	228	141.4	140.2	–1.2	–0.9
Tinnitus	240	76.4	75.8	–0.6	–0.8
Cataracts	241	107.4	132.6	25.2	23.4
Constipation	314	42.2	53.0	10.8	25.7
Diabetes	403	89.7	140.2	50.5	56.2
Migraine headache	406	29.8	26.5	–3.3	–11.0
Heart disease	...	231.6	359.8	128.2	55.4
Ischemic heart disease	502	112.7	132.6	19.9	17.6
Heart rhythm disorders	...	63.8	132.6	68.8	107.8
Tachycardia or rapid heartbeat	503	19.5	56.8	37.3	191.4
Heart murmurs	504	19.2	45.5	26.3	136.7
Other heart rhythm disorders	505	25.1	30.3	5.2	20.7
Other selected diseases of heart	507	55.1	75.8	20.7	37.5
High blood pressure	508	383.8	503.8	120.0	31.3
Hardening of the arteries	510	28.9	22.7	–6.2	–21.4
Varicose veins, lower extremities	513	72.6	75.8	3.2	4.3
Hemorrhoids	514	77.4	83.3	5.9	7.7
Chronic bronchitis	601	54.2	22.7	–31.5	–58.1
Asthma	602	57.3	45.5	–11.8	–20.7
Allergic rhinitis without asthma	603	69.4	98.5	29.1	41.9
Chronic sinusitis	605	151.8	162.9	11.1	7.3

NOTE: NHIS is National Health Interview Survey and and HIES is Health Interview Evaluation Survey.

Table 5. Prevalence of selected chronic conditions in persons 75 years of age and over from National Health Interview Survey estimates and from Health Interview Evaluation Survey household reports, by condition

Condition name and NHIS recode number		NHIS prevalence	HIES prevalence	Number of overreports per 100 persons, HIES compared with NHIS	Percent overreports by HIES compared with NHIS
All conditions	...	2,986.5	3,319.3	332.8	11.1
Arthritis	101	554.5	475.9	–78.6	–14.2
Dermatitis	113	32.9	78.3	45.4	138.0
Blindness or other visual impairment	201	101.7	96.4	–5.3	–5.2
Deafness or other hearing impairment	203	360.3	433.7	73.4	20.4
Deformity or orthopedic impairment	228	177.0	247.0	70.0	39.5
Tinnitus	240	68.9	144.6	75.7	109.8
Cataracts	241	234.3	265.1	30.8	13.1
Constipation	314	92.2	90.4	–1.8	–2.0
Diabetes	403	85.7	108.4	22.7	26.5
Migraine headache	406	11.8	18.1	6.3	53.2
Heart disease	...	353.0	373.5	20.5	5.8
Ischemic heart disease	502	173.0	132.5	–40.5	–23.4
Heart rhythm disorders	...	89.1	144.6	55.5	62.3
Tachycardia or rapid heartbeat	503	28.1	54.2	26.1	92.9
Heart murmurs	504	31.1	42.2	11.1	35.6
Other heart rhythm disorders	505	29.9	48.2	18.3	61.2
Other selected diseases of heart	507	90.9	108.4	17.5	19.3
High blood pressure	508	375.6	403.6	28.0	7.5
Hardening of the arteries	510	73.3	60.2	–13.1	–17.8
Varicose veins, lower extremities	513	86.6	90.4	3.8	4.3
Hemorrhoids	514	57.5	108.4	50.9	88.6
Chronic bronchitis	601	57.6	54.2	–3.4	–5.9
Asthma	602	42.3	12.0	–30.3	–71.5
Allergic rhinitis without asthma	603	65.5	78.3	12.8	19.6
Chronic sinusitis	605	155.8	168.7	12.9	8.3

NOTE: NHIS is National Health Interview Survey and HIES is Health Interview Evaluation Survey.

Table 6. Comparison of chronic condition reports for list-sample persons from Health Interview Evaluation Survey interviews and medical records and Kappa values, by condition

Condition name	NHIS chronic condition recode number	Matching status				HIES[5] prevalance according to—		Overreport by interview compared with medical record		Kappa value
		Positive match[1]	False positive[2]	False negative[3]	Negative match[4]	Interview	Medical record	Net	Percent	
All conditions	...	1,055	1,325	906	19,829	2,368.2	1,951.2	416.9	21.4	0.433
Arthritis	101	141	155	73	636	294.5	212.9	81.6	38.3	0.406
Dermatitis	113	23	33	82	867	55.7	104.5	–48.8	–46.7	0.230
Blindness or other visual impairment	201	12	44	6	943	55.7	17.9	37.8	211.1	0.305
Deafness or other hearing impairment	203	53	102	22	828	154.2	74.6	79.6	106.7	0.401
Deformity or orthopedic impairment	228	39	127	72	767	165.2	110.4	54.7	49.5	0.172
Tinnitus	240	7	49	9	940	55.7	15.9	39.8	250.0	0.174
Cataracts	241	56	27	71	851	82.6	126.4	–43.8	–34.6	0.482
Constipation	314	6	44	27	928	49.8	32.8	16.9	51.5	0.109
Diabetes	403	118	3	40	844	120.4	157.2	–36.8	–23.4	0.822
Migraine headache	406	14	35	16	940	48.8	29.9	18.9	63.3	0.330
Heart disease	...	...	...	...	...	251.7	350.2	–98.5	–28.1	...
Ischemic heart disease	502	63	14	52	876	76.6	114.4	–37.8	–33.0	0.622
Heart rhythm disorders	...	...	...	...	...	109.5	110.4	–1.0	–0.9	...
Tachycardia or rapid heartbeat	503	15	23	23	944	37.8	37.8	0.0	0.0	0.371
Heart murmurs	504	4	43	8	950	46.8	11.9	34.8	291.7	0.119
Other heart rhythm disorders	505	7	18	54	926	24.9	60.7	–35.8	–59.0	0.132
Other selected diseases of the heart	507	40	26	86	853	65.7	125.4	–59.7	–47.6	0.362
High blood pressure	508	346	59	75	525	403.0	418.9	–15.9	–3.8	0.725
Hardening of the arteries	510	1	18	13	973	18.9	13.9	5.0	35.7	0.045
Varicose veins, lower extremities	13	10	70	14	911	79.6	23.9	55.7	233.3	0.162
Hemorrhoids	514	26	64	41	874	89.6	66.7	22.9	34.3	0.276
Chronic bronchitis	601	5	40	31	929	44.8	35.8	9.0	25.0	0.087
Asthma	602	25	14	24	942	38.8	48.8	–10.0	–20.4	0.549
Allergic rhinitis without asthma	603	18	132	28	827	149.3	45.8	103.5	226.1	0.122
Chronic sinusitis	605	26	185	39	755	210.0	64.7	145.3	224.6	0.099

[1]Positive match means that both the interview and medical report were positive.

[2]False positive means that the interview was positive but the medical record negative.

[3]False negative means that the interview was negative but the medical record positive.

[4]Negative match means that both the interview and medical record were negative.

[5]HIES is Health Interview Evaluation Survey.

Table 7. Comparison of chronic condition reports for household members from Health Interview Evaluation Survey interviews and medical records, and Kappa values, by condition

Condition name	NHIS chronic condition recode number	Matching status				HIES[5] prevalance according to—		Overreport by interview compared with medical record		Kappa value
		Positive match[1]	False positive[2]	False negative[3]	Negative match[4]	Interview	Medical record	Net	Percent	
All conditions	...	295	412	393	15,069	1,005.7	978.7	27.0	2.8	0.397
Arthritis	101	34	34	28	607	96.7	88.2	8.5	9.7	0.475
Dermatitis	113	11	10	74	608	29.9	120.9	–91.0	–75.3	0.168
Blindness or other visual impairment	201	1	8	3	691	12.8	5.7	7.1	125.0	0.147
Deafness or other hearing impairment	203	17	31	3	652	68.3	28.4	39.8	140.0	0.479
Deformity or orthopedic impairment	228	8	39	36	620	66.9	62.6	4.3	6.8	0.119
Tinnitus	240	4	13	2	684	24.2	8.5	15.6	183.3	0.339
Cataracts	241	10	6	27	660	22.8	52.6	–29.9	–56.8	0.357
Constipation	314	4	12	12	675	22.8	22.8	0.0	0.0	0.233
Diabetes	403	19	2	11	671	29.9	42.7	–12.8	–30.0	0.736
Migraine headache	406	4	12	4	683	22.8	11.4	11.4	100.0	0.323
Heart disease	...	...	...	...	...	78.2	108.1	–29.9	–27.6	...
Ischemic heart disease	502	13	5	9	676	25.6	31.3	–5.7	–18.2	0.640
Heart rhythm disorders	...	...	...	...	...	39.8	35.6	4.3	12.0	...
Tachycardia or rapid heartbeat	503	2	5	7	689	10.0	12.8	–2.8	–22.2	0.242
Heart murmurs	504	0	17	4	682	24.2	5.7	18.5	325.0	–0.009
Other heart rhythm disorders	505	1	3	11	688	5.7	17.1	–11.4	–66.7	0.117
Other selected diseases of the heart	507	5	4	24	670	12.8	41.3	–28.4	–69.0	0.248
High blood pressure	508	85	22	31	565	152.2	165.0	–12.8	–7.8	0.718
Hardening of the arteries	510	1	5	1	696	8.5	2.8	5.7	200.0	0.247
Varicose veins, lower extremities	513	2	14	6	681	22.8	11.4	11.4	100.0	0.154
Hemorrhoids	514	10	27	13	653	52.6	32.7	19.9	60.9	0.305
Chronic bronchitis	601	3	18	13	669	29.9	22.8	7.1	31.3	0.140
Asthma	602	32	11	30	630	61.2	88.2	–27.0	–30.6	0.579
Allergic rhinitis without asthma	603	14	65	21	603	112.4	49.8	62.6	125.7	0.190
Chronic sinusitis	605	15	49	23	616	91.0	54.1	37.0	68.4	0.243

[1]Positive match means that both the interview and medical report were positive.

[2]False positive means that the interview was positive but the medical record negative.

[3]False negative means that the interview was negative but the medical record positive.

[4]Negative match means that both the interview and medical record were negative.

[5]HIES is Health Interview Evaluation Survey.

Table 8. Comparison of chronic condition reports for list-sample persons from Health Interview Evaluation Survey interviews and medical records sorted by Kappa values, by condition

Condition name	NHIS chronic condition recode number	Matching status				HIES[5] prevalance according to—		Overreport by interview compared with medical record		Kappa value
		Positive match[1]	False positive[2]	False negative[3]	Negative match[4]	Interview	Medical record	Net	Percent	
All conditions	...	1,055	1,325	906	19,829	2,368.2	1,951.2	416.92	21.4	0.433
Diabetes	403	118	3	40	844	120.4	157.2	–36.82	–23.4	0.822
High blood pressure	508	346	59	75	525	403.0	418.9	–15.92	–3.8	0.725
Ischemic heart disease	502	63	14	52	876	76.6	114.4	–37.81	–33.0	0.622
Asthma	602	25	14	24	942	38.8	48.8	–9.95	–20.4	0.549
Cataracts	241	56	27	71	851	82.6	126.4	–43.78	–34.6	0.482
Arthritis	101	141	155	73	636	294.5	212.9	81.59	38.3	0.406
Deafness or other hearing impairment	203	53	102	22	828	154.2	74.6	79.60	106.7	0.401
Tachycardia or rapid heartbeat	503	15	23	23	944	37.8	37.8	0.00	0.0	0.371
Other selected diseases of the heart	507	40	26	86	853	65.7	125.4	–59.70	–47.6	0.362
Migraine headache	406	14	35	16	940	48.8	29.9	18.91	63.3	0.330
Blindness or other visual impairment	201	12	44	6	943	55.7	17.9	37.81	211.1	0.305
Hemorrhoids	514	26	64	41	874	89.6	66.7	22.89	34.3	0.276
Dermatitis	113	23	33	82	867	55.7	104.5	–48.76	–46.7	0.230
Tinnitus	240	7	49	9	940	55.7	15.9	39.80	250.0	0.174
Deformity or orthopedic impairment	228	39	127	72	767	165.2	110.4	54.73	49.5	0.172
Varicose veins, lower extremities	513	10	70	14	911	79.6	23.9	55.72	233.3	0.162
Other heart rhythm disorders	505	7	18	54	926	24.9	60.7	–35.82	–59.0	0.132
Allergic rhinitis without asthma	603	18	132	28	827	149.3	45.8	103.48	226.1	0.122
Heart murmurs	504	4	43	8	950	46.8	11.9	34.83	291.7	0.119
Constipation	314	6	44	27	928	49.8	32.8	16.92	51.5	0.109
Chronic sinusitis	605	26	185	39	755	210.0	64.7	145.27	224.6	0.099
Chronic bronchitis	601	5	40	31	929	44.8	35.8	8.96	25.0	0.087
Hardening of the arteries	510	1	18	13	973	18.9	13.9	4.98	35.7	0.045

[1]Positive match means that both the interview and medical report were positive.

[2]False positive means that the interview was positive but the medical record negative.

[3]False negative means that the interview was negative but the medical record positive.

[4]Negative match means that both the interview and medical record were negative.

[5]HIES is Health Interview Evaluation Survey.

Table 9. Comparison of chronic condition reports for household members from Health Interview Evaluation Survey interviews and medical records, sorted by Kappa values, by condition

Condition name	NHIS chronic condition recode number	Matching status				HIES[5] prevalance according to—		Overreport by interview compared with medical record		Kappa value
		Positive match[1]	False positive[2]	False negative[3]	Negative match[4]	Interview	Medical record	Net	Percent	
All conditions	...	295	412	393	15,069	1,005.7	978.7	27.0	2.8	0.397
Diabetes	403	19	2	11	671	29.9	42.7	–12.8	–30.0	0.736
High blood pressure	508	85	22	31	565	152.2	165.0	–12.8	–7.8	0.718
Ischemic heart disease	502	13	5	9	676	25.6	31.3	–5.7	–18.2	0.640
Asthma	602	32	11	30	630	61.2	88.2	–27.0	–30.6	0.579
Deafness or other hearing impairment	203	17	31	3	652	68.3	28.4	39.8	140.0	0.479
Arthritis	101	34	34	28	607	96.7	88.2	8.5	9.7	0.475
Cataracts	241	10	6	27	660	22.8	52.6	–29.9	–56.8	0.357
Tinnitus	240	4	13	2	684	24.2	8.5	15.6	183.3	0.339
Migraine headache	406	4	12	4	683	22.8	11.4	11.4	100.0	0.323
Hemorrhoids	514	10	27	13	653	52.6	32.7	19.9	60.9	0.305
Other selected diseases of the heart	507	5	4	24	670	12.8	41.3	–28.4	–69.0	0.248
Hardening of the arteries	510	1	5	1	696	8.5	2.8	5.7	200.0	0.247
Chronic sinusitis	605	15	49	23	616	91.0	54.1	37.0	68.4	0.243
Tachycardia or rapid heartbeat	503	2	5	7	689	10.0	12.8	–2.8	–22.2	0.242
Constipation	314	4	12	12	675	22.8	22.8	0.0	0.0	0.233
Allergic rhinitis without asthma	603	14	65	21	603	112.4	49.8	62.6	125.7	0.190
Dermatitis	113	11	10	74	608	29.9	120.9	–91.0	–75.3	0.168
Varicose veins, lower extremities	513	2	14	6	681	22.8	11.4	11.4	100.0	0.154
Blindness or other visual impairment	201	1	8	3	691	12.8	5.7	7.1	125.0	0.147
Chronic bronchitis	601	3	18	13	669	29.9	22.8	7.1	31.3	0.140
Deformity or orthopedic impairment	228	8	39	36	620	66.9	62.6	4.3	6.8	0.119
Other heart rhythm disorders	505	1	3	11	688	5.7	17.1	–11.4	–66.7	0.117
Heart murmurs	504	0	17	4	682	24.2	5.7	18.5	325.0	–0.009

[1]Positive match means that both the interview and medical report were positive.

[2]False positive means that the interview was positive but the medical record negative.

[3]False negative means that the interview was negative but the medical record positive.

[4]Negative match means that both the interview and medical record were negative.

[5]HIES is Health Interview Evaluation Survey.

Table 10. Percent of matching positive reports for selected conditions in three studies, by condition

Condition name	Kaiser Permanente study[1]			Health Insurance Plan study[2]			Health Interview Evaluation Survey		
	Percent postive reports in—			Percent positive reports in—			Percent positive reports in—		
	Records matched by interview	Interview matched by records	Net over-report	Records matched by interview	Interview matched by records	Net over-report	Records matched by interview	Interview matched by records	Net over-report
Arthritis and chronic rheumatism	68.5	51.3	33.7	33.2	33.2	–26.4	65.9	47.6	38.3
Chronic skin diseases	34.5	75.9	–54.5	19.5	19.5	–54.5	21.9	41.1	–46.7
Severe or other visual impairment	72.0	57.3	25.6	33.3	33.3	–15.3	66.7	21.4	211.1
Hearing impairment	72.0	35.0	106.0	41.2	41.2	83.9	70.7	34.2	106.7
Deformity or orthopedic impairment	57.8	47.3	22.3	33.4	33.4	25.1	35.1	23.5	49.5
Diabetes	80.7	98.6	–18.2	61.7	61.7	–11.6	74.7	97.5	–23.4
Headache and migraine, chronic	62.2	47.1	32.2	14.9	14.9	–10.8	46.7	28.6	63.3
Diseases of the heart, NEC	79.4	77.1	2.9	60.5	60.5	7.5	36.6	51.0	–28.1
Hypertension, NEC	81.1	64.6	25.6	45.8	45.8	–0.7	82.2	85.4	–3.8
Rheumatic fever, arteriosclerosis, NEC, and other chronic circulatory conditions	39.4	27.1	45.5	...	...	...	[3]7.1	[3]5.3	[3]35.7
Varicose veins	48.1	47.6	1.2	42.3	42.3	135.0	41.7	12.5	233.3
Hemorrhoids	66.4	45.3	46.6	38.2	38.2	93.9	38.8	28.9	34.3
Chronic bronchitis	79.2	31.1	154.2	65.0	65.0	306.3	13.9	11.1	25.0
Asthma	69.2	49.1	41.0	76.2	76.2	57.1	51.0	64.1	–20.4
Allergic rhinitis without asthma	73.2	52.6	39.0	([4])	([4])	([4])	39.1	12.0	226.1
Chronic sinusitis	100.0	20.9	378.9	48.4	48.4	160.2	40.0	12.3	224.6

[1]Balamuth (1), Harlow and Linet (17).
[2]Madow (2) (3), Harlow and Linet (17).
[3]Includes only arteriosclerosis.
[4]Combined with asthma.

NOTE: NEC is not elsewhere classified.

Table 11. Prevalence of heart conditions in list-sample persons from the Health Interview Evaluation Survey, by source of information and condition

Condition	Person-level prevalence			Condition-level prevalence		
	Interview report	Medical repord	Net difference	Interview report	Medical record	Net difference
Heart disease	251.7	349.3	–27.9	264.7	471.6	–43.9
Heart disease (without heart murmurs)	205.0	337.4	–39.2	217.9	459.7	–52.6
Ischemic heart disease	76.6	114.4	–33.0	88.6	177.1	–50.0
Heart rhythm disorders	109.5	109.5	0.0	109.5	125.4	–12.7
Tachycardia or rapid heartbeat	37.8	36.9	2.6	37.8	41.8	–9.5
Heart murmurs	46.8	11.9	291.7	46.8	11.9	291.7
Other heart rhythm disorders	24.9	60.7	–59.0	24.9	71.6	–65.3
Other selected diseases of heart	65.7	125.4	–47.6	66.7	169.2	–60.6

Table 12. Number of conditions and Kappa values for two studies and the Health Interview Evaluation Survey, by type of match and condition

Condition	NHIS[1] recodes					Loose match 1[2]					Loose match 2[3]				
	Positive match	False positive	False negative	Negative match	Kappa value	Positive match	False positive	False negative	Negative match	Kappa value	Positive match	False positive	False negative	Negative match	Kappa value
Arthritis	141	155	73	636	0.404	167	132	70	636	0.486	168	134	93	610	0.439
Dermatitis	23	33	82	867	0.232	35	23	80	867	0.358	...	...	...	...	...
Hardening of the arteries	1	18	13	972	0.045	18	7	8	972	0.686	69	11	56	869	0.632
Heart conditions	...	...	...	...	...	152	58	89	706	0.580	139	36	96	734	0.598
Ischemic heart disease	63	14	52	876	0.622	...	...	...	...	...	...	...	...	...	...
Heart rhythm disorders	...	...	...	...	...	42	62	57	844	0.348	34	28	55	888	0.407
Tachycardia or rapid heartbeat	15	23	23	944	0.371	...	...	...	...	...	...	...	...	...	...
Heart murmurs	4	43	8	950	0.119	...	...	...	...	...	...	...	...	...	...
Other rhythm disorders	7	18	54	926	0.132	...	...	...	...	...	...	...	...	...	...
Other heart diseases	40	26	86	853	0.362	...	...	...	...	...	...	...	...	...	...
Upper respiratory problems	...	...	...	...	...	57	254	48	646	0.141	65	250	50	640	0.164
Allergic rhinitis	18	132	28	827	0.122	...	...	...	...	...	...	...	...	...	...
Chronic sinusitis	26	185	39	755	0.101	...	...	...	...	...	...	...	...	...	...

[1]NHIS is National Health Interview Survey.

[2]Loose match 1 applies the expanded match criteria only to mismatch types "false positive" and "false negative." For heart and upper respiratory conditions, loose match 1 is the result of combining NHIS recodes.

[3]Loose match 2 applies the expanded match criteria to negative matches as well as mismatches. For upper respiratory conditions, loose match 2 adds two ICD–9–CM codes not in either NHIS recode. For heart conditions, loose match 2 drops heart murmurs from the combined categories.

Table 13. Number of conditions, number and percent of overreports, and Kappa values from Health Interview Evaluation Survey responses and medical records for list-sample persons, by selected characteristics

Person characteristic	Number of persons	Conditions per person		Interview overrport		Kappa value
		By HIES[1] interview	By medical record	Net overreport	Percent overreport	
Age						
Under 45 years	309	1.60	0.98	0.62	63.6	0.348
45–64 years	373	2.30	1.85	0.45	24.3	0.464
65–74 years	193	2.95	2.63	0.33	12.4	0.466
75 years and over	130	3.53	3.56	–0.03	–0.9	0.409
Sex and age						
Female:						
65 years and over	179	3.37	3.07	0.30	9.8	0.434
18–64 years	366	2.23	1.48	0.74	50.1	0.420
Male:						
65 years and over	144	2.96	2.92	0.03	1.2	0.450
18–64 years	316	1.70	1.42	0.28	19.6	0.435
Race and age						
Black:						
65 years and over	156	3.37	3.07	0.30	9.8	0.474
18–64 years	518	1.96	1.43	0.54	37.6	0.433
White or other:						
65 years and over	167	3.01	2.94	0.07	2.4	0.408
18–64 years	164	2.05	1.55	0.50	32.3	0.406
Employment status and age						
Employed:						
65 years and over	71	2.66	2.69	–0.03	–1.0	0.428
18–64 years	595	1.91	1.38	0.53	38.2	0.417
Unemployed:						
65 years and over	251	3.35	3.10	0.24	7.8	0.443
18–64 years	86	2.50	1.98	0.52	26.5	0.473
Income						
$0–$19,999	148	3.07	2.46	0.61	25.0	0.434
$20,000–$29,999	119	2.61	2.02	0.60	29.6	0.423
$30,000–$49,999	263	2.34	1.96	0.38	19.6	0.452
$50,000 and over	335	2.15	1.73	0.42	24.1	0.431
Education						
Less than high school	167	2.75	2.31	0.44	19.2	0.445
High school graduate	307	2.21	1.77	0.45	25.2	0.436
Some college	204	2.44	1.76	0.68	38.3	0.434
College graduate	321	2.25	2.02	0.23	11.4	0.434
Whether 2-week doctor visit and age						
2-week doctor visit:						
65 years and over	170	2.87	3.07	–0.20	–6.5	0.452
18–64 years	280	2.18	1.71	0.47	27.6	0.445
No doctor visit:						
65 years and over	153	3.54	2.93	0.61	20.8	0.431
18–64 years	402	1.85	1.28	0.57	44.3	0.409
Whether 13-month hospital stay and age						
Inpatient stay in past 13 months:						
65 years and over	108	3.37	3.52	–0.15	–4.2	–0.398
18–64 years	138	2.35	1.83	0.52	28.6	0.459
No inpatient stay in past 13 months:						
65 years and over	215	3.09	2.74	0.35	12.7	0.465
18–64 years	544	1.89	1.36	0.53	38.9	0.415
Whether health assessment past 2 years and age						
Health assessment past 2 years:						
65 years and over	134	3.00	3.01	–0.01	–0.5	0.461
Under 1 year–64 years	246	1.97	1.55	0.42	27.3	0.437
No health assessment past 2 years:						
65 years and over	189	3.32	2.99	0.32	10.8	0.427
Under 1 year–64 years	436	1.99	1.40	0.59	41.8	0.420

[1]HIES is Health Interview Evaluation Survey.

Table 13. Number of conditions, number and percent of overreports, and Kappa values from Health Interview Evaluation Survey responses and medical records for list-sample persons, by selected characteristics—Con.

Person characteristic	Number of persons	Conditions per person		Interview overrport		Kappa value
		By HIES[1] interview	By medical record	Net overreport	Percent overreport	
Self-perceived health status						
Excellent	203	1.41	1.31	0.10	7.5	0.395
Very good	293	2.13	1.65	0.48	29.1	0.432
Good	296	2.62	2.11	0.51	24.4	0.445
Fair or poor	201	3.31	2.80	0.51	18.1	0.446
Number of chronic conditions						
None	139	0.00	0.81	–0.81	–100.0	0.000
One	235	1.00	1.34	–0.34	–25.6	0.412
Two	248	2.00	1.74	0.26	14.8	0.483
Three	160	3.00	2.26	0.74	33.0	0.447
Four or more	223	5.25	3.32	1.93	58.0	0.405

Table 14. Number of conditions, number and percent of overreports, and Kappa values from Health Interview Evaluation Survey responses and medical records for household members, by selected characteristics

Person characteristic	Number of persons	Conditions per person		Interview overreport		Kappa value
		By HIES interview	By medical record	Net overreport	Percent overreport	
Age						
0–17 years	285	0.40	0.59	–0.19	–32.3	0.345
18–44 years	173	0.77	0.53	0.25	47.3	0.348
45–64 years	138	1.56	1.52	0.04	2.4	0.401
65–74 years	71	2.21	1.82	0.39	21.7	0.483
75 years and over	36	2.56	2.69	–0.14	–5.2	0.344
Sex and age						
Female:						
65 years and over	63	2.13	2.05	0.08	3.9	0.398
Under 1 year–64 years	330	0.86	0.86	0.00	0.0	0.378
Male:						
65 years and over	44	2.61	2.20	0.41	18.6	0.468
Under 1 year–64 years	266	0.67	0.70	–0.02	–3.2	0.373
Race and age						
Black:						
65 years and over	37	2.38	1.78	0.59	33.3	0.505
Under 1 year–64 years	452	0.81	0.81	–0.00	–0.3	0.355
White or other:						
65 years and over	70	2.30	2.29	0.01	0.6	0.393
Under 1 year–64 years	144	0.68	0.72	–0.03	–4.9	0.452
Employment status and age						
Employed:						
65 years and over	23	2.09	1.96	0.13	6.7	0.380
18–64 years	244	1.00	0.89	0.11	12.4	0.385
Unemployed:						
65 years and over	84	2.39	2.15	0.24	11.0	0.441
18–64 years	66	1.56	1.24	0.32	25.6	0.388
Income						
$0–$19,999	32	1.72	1.25	0.47	37.5	0.296
$20,000–$29,999	51	1.16	1.06	0.10	9.3	0.380
$30,000–$49,999	198	0.97	1.05	–0.08	–7.2	0.431
$50,000 and over	373	0.95	0.91	0.04	4.4	0.384
Education[1]						
Less than high school	69	2.04	1.49	0.55	36.9	0.401
High school graduate	138	1.17	0.97	0.20	20.1	0.366
Some college	81	1.26	1.12	0.14	12.1	0.451
College graduate	128	1.49	1.53	–0.04	–2.6	0.420
Whether 2-week doctor visit and age						
2-week doctor visit:						
65 years and over	26	2.50	2.81	–0.31	–11.0	0.433
Under 1 year–64 years	77	1.25	1.34	–0.09	–6.8	0.380
No doctor visit:						
65 year and over	81	2.27	1.89	0.38	20.3	0.428
Under 1 year–64 years	519	0.71	0.70	0.00	0.3	–0.377
Whether 13-month hospital stay and age						
Inpatient stay in past 13 months:						
65 years and over	11	3.55	3.45	0.09	2.6	0.351
Under 1 year–64 years	42	1.50	1.57	–0.07	–4.5	0.364
No inpatient stay in past 13 months:						
65 years and over	96	2.19	1.96	0.23	11.7	0.441
Under 1 year–64 years	554	0.72	0.73	–0.01	–0.7	0.376
Whether health assessment past 2 years and age						
Health assessment past 2 years:						
65 years and over	52	2.38	2.54	–0.15	–6.1	0.506
Under 1 year–64 years	117	0.91	0.92	–0.01	–0.9	0.377
No health assessment past 2 years:						
65 years and over	55	2.27	1.71	0.56	33.0	0.341
Under 1 year–64 years	479	0.74	0.54	0.20	36.5	0.445

[1]Persons 18 years of age and over only.

Table 14. Number of conditions, number and percent of overreports, and Kappa values from Health Interview Evaluation Survey responses and medical records for household members, by selected characteristics—Con.

Person characteristic	Number of persons	Conditions per person		Interview overreport		Kappa value
		By HIES interview	By medical record	Net overreport	Percent overreport	
Self-perceived health status						
Excellent	274	0.53	0.55	–0.02	–4.0	0.330
Very good	210	0.86	0.92	–0.07	–7.2	0.390
Good	159	1.37	1.26	0.11	8.5	0.393
Fair or poor	56	2.96	2.57	0.39	15.3	0.449
Number of chronic conditions						
None	337	0.00	0.45	–0.45	–100.0	0.000
One	181	1.00	1.04	–0.04	–3.7	0.460
Two	104	2.00	1.38	0.63	45.5	0.406
Three	39	3.00	2.64	0.36	13.6	0.467
Four or more	42	4.88	2.62	2.26	86.4	0.379
Response status						
Adult present for interview	245	1.69	1.42	0.27	18.9	0.411
Adult not present for interview	183	1.03	0.98	0.05	5.0	0.404

Appendixes

Contents

Appendix I
Health Interview Evaluation Survey Questionnaire

CDC 64.01

OMB No. 0920-0239: Approval Expires 12/31/90

NOTICE - Information contained on this form which would permit identification of any individual or establishment has been collected with a guarantee that it will be held in strict confidence, will be used only for purposes stated for this study, and will not be disclosed or released to others without the consent of the individual or the establishment in accordance with section 308(d) of the Public Health Service Act (42 USC 242m) Public reporting burden for this collection of information is estimated to vary from 18 to 35 minutes per response, with an average of 28 minutes per response Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to PHS Reports Clearance Officer, ATTN: PRA, Hubert H Humphrey Bldg., Rm. 721-H, 200 Independence Avenue, SW; Washington, DC. 20201; and to the Office of Management and Budget, Paperwork Reduction Project (0920-0239), Washington, DC 20503.

FORM **HIS-1 (Evaluation)** (2-1-90)

WESTAT, INC.
ACTING AS COLLECTING AGENT FOR THE
U.S. PUBLIC HEALTH SERVICE

HEALTH INTERVIEW EVALUATION SURVEY

1. Book _____ of _____ books

2—5. *Not applicable this form*

6a. What is your exact address? *(Include House No., Apt. No., or other identification, county and ZIP Code)*

City | State | County | ZIP Code

b. Is this your mailing address? *(Mark box or specify if different. Include county and ZIP Code.)* ☐ Same as 6a

City | State | County | ZIP Code

Items 7, 8, and 9 not applicable this form.

10. CLASSIFICATION OF LIVING QUARTERS — *Mark by observation*

Items 10 a and b not applicable this form.

c. HOUSING unit *(Mark one, THEN page 2)*

01 ☐ House, apartment, flat
02 ☐ HU in nontransient hotel, motel, etc.
03 ☐ HU — permanent in transient hotel, motel, etc.
04 ☐ HU in rooming house
05 ☐ Mobile home or trailer with no permanent room added
06 ☐ Mobile home or trailer with one or more permanent rooms added
07 ☐ HU not specified above — *Describe in footnotes*

d. OTHER unit *(Mark one)*

08 ☐ Quarters not HU in rooming or boarding house
09 ☐ Unit not permanent in transient hotel, motel, etc.
10 ☐ Unoccupied site for mobile home, trailer, or tent
11 ☐ Student quarters in college dormitory
12 ☐ Other unit not specified above — *Describe in footnotes*

GO TO HOUSEHOLD COMPOSITION PAGE

11. What is the telephone number here? ☐ None | Area code/number

12. Interview observed? 1 ☐ Yes 2 ☐ No

13a. Interviewer's name | Code

b. Language of interview
1 ☐ English 3 ☐ Both English and Spanish
2 ☐ Spanish 8 ☐ Other

14. Noninterview reason

TYPE A

01 ☐ Refusal — *Describe in footnotes*
02 ☐ No one at home, repeated calls
03 ☐ Temporarily absent — *Footnote*
04 ☐ Other *(Specify)*

Fill items 1—6a, 10, and 12—15

15. Record of calls

	Month	Date		Beginning time	Ending time	Completed *Mark (X)*
1			P	a.m.	a.m.	
			T	p.m.	p.m.	
2			P	a.m.	a.m.	
			T	p.m.	p.m.	
3			P	a.m.	a.m.	
			T	p.m.	p.m.	
4			P	a.m.	a.m.	
			T	p.m.	p.m.	
5			P	a.m.	a.m.	
			T	p.m.	p.m.	
6			P	a.m.	a.m.	
			T	p.m.	p.m.	

16. *Not applicable this form*

17. Record of additional contacts

	Month	Date		Beginning time	Ending time	Completed *Mark (X)*
1			P	a.m.	a.m.	
			T	p.m.	p.m.	
2			P	a.m.	a.m.	
			T	p.m.	p.m.	
3			P	a.m.	a.m.	
			T	p.m.	p.m.	
4			P	a.m.	a.m.	
			T	p.m.	p.m.	

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE 1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*
☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:
Does — — usually live somewhere else?

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

A1 REFERENCE PERIODS
- **2-WEEK PERIOD**
- **12-MONTH DATE**
- **13-MONTH HOSPITAL DATE**

A2 **ASK CONDITION LISTS 1,2, and 3.**

A3 *Refer to ages of all related HH members.*

4a. Are any of the persons in this family now on full-time active duty with the armed forces? ☐ Yes ☐ No *(5)*

b. Who is this?
Delete column number(s) _____ by an "X" from 1—C2.

c. Anyone else? ☐ Yes *(Reask 4b and c)* ☐ No

Ask for each person in armed forces:
d. Where does — — usually live and sleep, here or somewhere else?
Mark box in person's column.

If related persons 17 and over are listed in addition to the respondent and are not present, say:
5. We would like to have all adult family members who are at home take part in the interview. Are *(names of persons 17 and over)* **at home now?** *If "Yes," ask:* **Could they join us?** *(Allow time)*

Read to respondent(s):
This survey is being conducted to collect information on the nation's health. I will ask about hospitalizations, disability, visits to doctors, illness in the family, and other health related items.

HOSPITAL PROBE

6a. Since *(13-month hospital date)* **a year ago, was — — a patient in a hospital OVERNIGHT?**

b. How many different times did — — stay in any hospital overnight or longer since *(13-month hospital date)* **a year ago?**

Ask for each child under one:
7a. Was — — born in a hospital?

Ask for mother and child:
b. Have you included this hospitalization in the number you gave me for — —?

---

1. First name | Mid. init. | Age
Last name | Sex 1☐M 2☐F

2. Relationship **REFERENCE PERSON**

3. Date of birth Month | Date | Year

C1

HOSP.	WORK	RD	2-WK. DV
00☐None	1☐Wa	1☐Yes	00☐None
Number	2☐Wb	2☐No	Number

C2

LA	IRA	DV	INJ.	CLLTR	HS	COND.

A3 ☐ All persons 65 and over *(5)*
☐ Other *(4)*

4d. ☐ Living at home
☐ Not living at home

6a. 1☐Yes
2☐No *(Mark "HOSP." box, THEN NP)*

b. _____ Number of times *(Make entry in "HOSP." box THEN NP)*

7a. 1☐Yes
2☐No *(NP)*

b. ☐ Yes *(NP)*
☐ No *(Correct 6 and "HOSP." box)*

FOOTNOTES

	☐ Old age	☐ Old age	☐ Old age	☐ Old age
	2	**3**	**4**	**5**
1.	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year
C1	HOSP. 00☐None Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None Number	HOSP. 00☐None Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None Number	HOSP. 00☐None Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None Number	HOSP. 00☐None Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None Number
C2	LA RA DV INJ. CL LTR HS COND. (×5)	LA RA DV INJ. CL LTR HS COND. (×5)	LA RA DV INJ. CL LTR HS COND. (×5)	LA RA DV INJ. CL LTR HS COND. (×5)
4d.	☐ Living at home ☐ Not living at home	☐ Living at home ☐ Not living at home	☐ Living at home ☐ Not living at home	☐ Living at home ☐ Not living at home
6a.	1☐Yes 2☐No *(Mark "HOSP." box, THEN NP)*	1☐Yes 2☐No *(Mark "HOSP." box, THEN NP)*	1☐Yes 2☐No *(Mark "HOSP." box, THEN NP)*	1☐Yes 2☐No *(Mark "HOSP." box, THEN NP)*
b.	Number of times } *(Make entry in "HOSP." box, THEN NP)*	Number of times } *(Make entry in "HOSP." box, THEN NP)*	Number of times } *(Make entry in "HOSP." box, THEN NP)*	Number of times } *(Make entry in "HOSP." box, THEN NP)*
7a.	1☐Yes 2☐No *(NP)*	1☐Yes 2☐No *(NP)*	1☐Yes 2☐No *(NP)*	1☐Yes 2☐No *(NP)*
b.	☐ Yes *(NP)* ☐ No *(Correct 6 and "HOSP." box)*	☐ Yes *(NP)* ☐ No *(Correct 6 and "HOSP." box)*	☐ Yes *(NP)* ☐ No *(Correct 6 and "HOSP." box)*	☐ Yes *(NP)* ☐ No *(Correct 6 and "HOSP." box)*

FOOTNOTES

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE

1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who **USUALLY** lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*
☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:
Does — — usually live somewhere else?

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

	1. First name / Mid. init. / Age	2. Relationship	3. Date of birth Month / Date / Year
	Last name / Sex 1☐M 2☐F	**REFERENCE PERSON**	

C1	HOSP.	WORK	RD	2-WK. DV
	00☐ None Number	1☐ Wa 2☐ Wb	1☐ Yes 2☐ No	00☐ None Number

C2

LA	IRA	DV	INJ.	CLLTRI	HSTCOND.

	REFERENCE PERIODS
A1	**2-WEEK PERIOD**
	12-MONTH DATE
	13-MONTH HOSPITAL DATE
A2	**ASK CONDITION LISTS 1,2, and 3.**

A3 *Refer to ages of all related HH members.*

A3 ☐ All persons 65 and over *(5)*
☐ Other *(4)*

B. LIMITATION OF ACTIVITIES PAGE

B1 *Refer to age.*

B1 1☐ 18–69 *(1)*
2☐ Other *(NP)*

1. What was — — doing MOST OF THE PAST 12 MONTHS; working at a job or business, keeping house, going to school, or something else?
Priority if 2 or more activities reported: (1) Spent the most time doing; (2) Considers the most important.

1. 1☐ Working *(2)*
2☐ Keeping house *(3)*
3☐ Going to school *(5)*
4☐ Something else *(5)*

2a. Does any impairment or health problem NOW keep — — from working at a job or business?

2a. 1☐ Yes *(7)* ☐ No

b. Is — — limited in the kind OR amount of work — — can do because of any impairment or health problem?

b. 2☐ Yes *(7)* 3☐ No *(6)*

3a. Does any impairment or health problem NOW keep — — from doing any housework at all?

3a. 4☐ Yes *(4)* ☐ No

b. Is — — limited in the kind OR amount of housework — — can do because of any impairment or health problem?

b. 5☐ Yes *(4)* 6☐ No *(5)*

4a. What (other) condition causes this?
Ask if injury or operation: **When did [the** *(injury)* **occur?/— — have the operation?]**
Ask if operation over 3 months ago: **For what condition did — — have the operation?**
If pregnancy delivery or 0–3 months injury or operation —
Reask question 3 where limitation reported, saying: **Except for — —** *(condition)*, . . .?
OR reask 4b/c.

4a. *(Enter condition in C2, THEN 4b)*
1☐ Old age *(Mark "Old age" box, THEN 4c)*

b. Besides *(condition)* **is there any other condition that causes this limitation?**

b. ☐ Yes *(Reask 4a and b)*
☐ No *(4d)*

c. Is this limitation caused by any (other) specific condition?

c. ☐ Yes *(Reask 4a and b)*
☐ No

Mark box if only one condition.
d. Which of these conditions would you say is the MAIN cause of this limitation?

d. ☐ Only 1 condition
Main cause

5a. Does any impairment or health problem keep — — from working at a job or business?

5a. 1☐ Yes *(7)* ☐ No

b. Is — — limited in the kind OR amount of work — — could do because of any impairment or health problem?

b. 2☐ Yes *(7)* 3☐ No

B2 *Refer to questions 3a and 3b*

B2 1☐ "Yes" in 3a or 3b *(NP)*
2☐ Other *(6)*

6a. Is — — limited in ANY WAY in any activities because of an impairment or health problem?

6a. 1☐ Yes 2☐ No *(NP)*

b. In what way is — — limited? *Record limitation, not condition.*

b.
Limitation

7a. What (other) condition causes this?
Ask if injury or operation **When did [the** *(injury)* **occur?/— — have the operation?]**
Ask if operation over 3 months ago **For what condition did — — have the operation?**
If pregnancy delivery or 0–3 months injury or operation —
Reask question 2 5, or 6 where limitation reported, saying. **Except for — —** *(condition)*, . . .?
OR reask 7b c.

7a. *(Enter condition in C2, THEN 7b)*
1☐ Old age *(Mark "Old age" box, THEN 7c)*

b. Besides *(condition)* **is there any other condition that causes this limitation?**

b. ☐ Yes *(Reask 7a and b)*
☐ No *(7d)*

c. Is this limitation caused by any (other) specific condition?

c. ☐ Yes *(Reask 7a and b)*
☐ No

Mark box if only one condition.
d. Which of these conditions would you say is the MAIN cause of this limitation?

d. ☐ Only 1 condition
Main cause

	☐ Old age **2**	☐ Old age **3**	☐ Old age **4**	☐ Old age **5**
1.	First name / Mid. init. / Age Last name / Sex 1 ☐ M 2 ☐ F	First name / Mid. init. / Age Last name / Sex 1 ☐ M 2 ☐ F	First name / Mid. init. / Age Last name / Sex 1 ☐ M 2 ☐ F	First name / Mid. init. / Age Last name / Sex 1 ☐ M 2 ☐ F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year
C1	HOSP.: 00 ☐ None, Number; WORK: 1 ☐ Wa 2 ☐ Wb; RD: 1 ☐ Yes 2 ☐ No; 2-WK. DV: 00 ☐ None, Number	HOSP.: 00 ☐ None, Number; WORK: 1 ☐ Wa 2 ☐ Wb; RD: 1 ☐ Yes 2 ☐ No; 2-WK. DV: 00 ☐ None, Number	HOSP.: 00 ☐ None, Number; WORK: 1 ☐ Wa 2 ☐ Wb; RD: 1 ☐ Yes 2 ☐ No; 2-WK. DV: 00 ☐ None, Number	HOSP.: 00 ☐ None, Number; WORK: 1 ☐ Wa 2 ☐ Wb; RD: 1 ☐ Yes 2 ☐ No; 2-WK. DV: 00 ☐ None, Number
C2	LA / RA / DV / INJ. / CL LTR / HS / COND. (×5)	LA / RA / DV / INJ. / CL LTR / HS / COND. (×5)	LA / RA / DV / INJ. / CL LTR / HS / COND. (×5)	LA / RA / DV / INJ. / CL LTR / HS / COND. (×5)
B1	1 ☐ 18–69 *(1)* 2 ☐ Other *(NP)*	1 ☐ 18–69 *(1)* 2 ☐ Other *(NP)*	1 ☐ 18–69 *(1)* 2 ☐ Other *(NP)*	1 ☐ 18–69 *(1)* 2 ☐ Other *(NP)*
1.	1 ☐ Working *(2)* 2 ☐ Keeping house *(3)* 3 ☐ Going to school *(5)* 4 ☐ Something else *(5)*	1 ☐ Working *(2)* 2 ☐ Keeping house *(3)* 3 ☐ Going to school *(5)* 4 ☐ Something else *(5)*	1 ☐ Working *(2)* 2 ☐ Keeping house *(3)* 3 ☐ Going to school *(5)* 4 ☐ Something else *(5)*	1 ☐ Working *(2)* 2 ☐ Keeping house *(3)* 3 ☐ Going to school *(5)* 4 ☐ Something else *(5)*
2a.	1 ☐ Yes *(7)* ☐ No	1 ☐ Yes *(7)* ☐ No	1 ☐ Yes *(7)* ☐ No	1 ☐ Yes *(7)* ☐ No
b.	2 ☐ Yes *(7)* 3 ☐ No *(6)*	2 ☐ Yes *(7)* 3 ☐ No *(6)*	2 ☐ Yes *(7)* 3 ☐ No *(6)*	2 ☐ Yes *(7)* 3 ☐ No *(6)*
3a.	4 ☐ Yes *(4)* ☐ No	4 ☐ Yes *(4)* ☐ No	4 ☐ Yes *(4)* ☐ No	4 ☐ Yes *(4)* ☐ No
b.	5 ☐ Yes *(4)* 6 ☐ No *(5)*	5 ☐ Yes *(4)* 6 ☐ No *(5)*	5 ☐ Yes *(4)* 6 ☐ No *(5)*	5 ☐ Yes *(4)* 6 ☐ No *(5)*
4a.	*(Enter condition in C2, THEN 4b)* 1 ☐ Old age *(Mark "Old age" box, THEN 4c)*	*(Enter condition in C2, THEN 4b)* 1 ☐ Old age *(Mark "Old age" box, THEN 4c)*	*(Enter condition in C2, THEN 4b)* 1 ☐ Old age *(Mark "Old age" box, THEN 4c)*	*(Enter condition in C2, THEN 4b)* 1 ☐ Old age *(Mark "Old age" box, THEN 4c)*
b.	☐ Yes *(Reask 4a and b)* ☐ No *(4d)*	☐ Yes *(Reask 4a and b)* ☐ No *(4d)*	☐ Yes *(Reask 4a and b)* ☐ No *(4d)*	☐ Yes *(Reask 4a and b)* ☐ No *(4d)*
c.	☐ Yes *(Reask 4a and b)* ☐ No	☐ Yes *(Reask 4a and b)* ☐ No	☐ Yes *(Reask 4a and b)* ☐ No	☐ Yes *(Reask 4a and b)* ☐ No
d.	☐ Only 1 condition Main cause	☐ Only 1 condition Main cause	☐ Only 1 condition Main cause	☐ Only 1 condition Main cause
5a.	1 ☐ Yes *(7)* ☐ No	1 ☐ Yes *(7)* ☐ No	1 ☐ Yes *(7)* ☐ No	1 ☐ Yes *(7)* ☐ No
b.	2 ☐ Yes *(7)* 3 ☐ No	2 ☐ Yes *(7)* 3 ☐ No	2 ☐ Yes *(7)* 3 ☐ No	2 ☐ Yes *(7)* 3 ☐ No
B2	1 ☐ "Yes" in 3a or 3b *(NP)* 2 ☐ Other *(6)*	1 ☐ "Yes" in 3a or 3b *(NP)* 2 ☐ Other *(6)*	1 ☐ "Yes" in 3a or 3b *(NP)* 2 ☐ Other *(6)*	1 ☐ "Yes" in 3a or 3b *(NP)* 2 ☐ Other *(6)*
6a.	1 ☐ Yes 2 ☐ No *(NP)*	1 ☐ Yes 2 ☐ No *(NP)*	1 ☐ Yes 2 ☐ No *(NP)*	1 ☐ Yes 2 ☐ No *(NP)*
b.	Limitation	Limitation	Limitation	Limitation
7a.	*(Enter condition in C2, THEN 7b)* 1 ☐ Old age *(Mark "Old age" box, THEN 7c)*	*(Enter condition in C2, THEN 7b)* 1 ☐ Old age *(Mark "Old age" box, THEN 7c)*	*(Enter condition in C2, THEN 7b)* 1 ☐ Old age *(Mark "Old age" box, THEN 7c)*	*(Enter condition in C2, THEN 7b)* 1 ☐ Old age *(Mark "Old age" box, THEN 7c)*
b.	☐ Yes *(Reask 7a and b)* ☐ No *(7d)*	☐ Yes *(Reask 7a and b)* ☐ No *(7d)*	☐ Yes *(Reask 7a and b)* ☐ No *(7d)*	☐ Yes *(Reask 7a and b)* ☐ No *(7d)*
c.	☐ Yes *(Reask 7a and b)* ☐ No	☐ Yes *(Reask 7a and b)* ☐ No	☐ Yes *(Reask 7a and b)* ☐ No	☐ Yes *(Reask 7a and b)* ☐ No
d.	☐ Only 1 condition Main cause	☐ Only 1 condition Main cause	☐ Only 1 condition Main cause	☐ Only 1 condition Main cause

FORM HIS-1 (Evaluation) (2-1-90)

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE

1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
– any babies or small children?	☐	☐
– any lodgers, boarders, or persons you employ who live here?	☐	☐
– anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
– anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here?

☐ Yes *(2)*

☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1–C2 and enter reason.)*

Probe if necessary:

Does — — usually live somewhere else?

	1. First name	Mid. init.	Age	Sex
	Last name			1☐ M 2☐ F

2. Relationship **REFERENCE PERSON**

3. Date of birth Month | Date | Year

C1

HOSP.	WORK	RD	2-WK. DV
00☐ None	1☐ Wa	1☐ Yes	00☐ None
Number	2☐ Wb	2☐ No	Number

C2

LA | IRA | IDV | INJ. | CLLTRI | HSTCOND.

LA | IRA | IDV | INJ. | CLLTRI | HSTCOND.

LA | IRA | IDV | INJ. | CLLTRI | HSTCOND.

LA | IRA | IDV | INJ. | CLLTRI | HSTCOND.

LA | IRA | IDV | INJ. | CLLTRI | HSTCOND.

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

A1 REFERENCE PERIODS

2-WEEK PERIOD

12-MONTH DATE

13-MONTH HOSPITAL DATE

A2 ASK CONDITION LISTS 1,2, and 3.

B. LIMITATION OF ACTIVITIES PAGE, Continued

B3 *Refer to age.*

B3 0☐ Under 5 *(10)* 2☐ 18–69 *(NP)* 1☐ 5–17 *(11)* 3☐ 70 and over *(8)*

8. What was — — doing MOST OF THE PAST 12 MONTHS; working at a job or business, keeping house, going to school, or something else?

Priority if 2 or more activities reported: (1) Spent the most time doing; (2) Considers the most important.

8. 1☐ Working 2☐ Keeping house 3☐ Going to school 4☐ Something else

9a. Because of any impairment or health problem, does — — need the help of other persons with — — personal care needs, such as eating, bathing, dressing, or getting around this home?

9a. 1☐ Yes *(13)* ☐ No

b. Because of any impairment or health problem, does — — need the help of other persons in handling — — routine needs, such as everyday household chores, doing necessary business, shopping, or getting around for other purposes?

b. 2☐ Yes *(13)* 3☐ No *(12)*

10a. Is — — able to take part AT ALL in the usual kinds of play activities done by most children — — age?

10a. ☐ Yes 0☐ No *(13)*

b. Is — — limited in the kind OR amount of play activities — — can do because of any impairment or health problem?

b. 1☐ Yes *(13)* 2☐ No *(12)*

11a. Does any impairment or health problem NOW keep — — from attending school?

11a. 1☐ Yes *(13)* ☐ No

b. Does — — attend a special school or special classes because of any impairment or health problem?

b. 2☐ Yes *(13)* ☐ No

c. Does — — need to attend a special school or special classes because of any impairment or health problem?

c. 3☐ Yes *(13)* ☐ No

d. Is — — limited in school attendance because of — — health?

d. 4☐ Yes *(13)* 5☐ No

12a. Is — — limited in ANY WAY in any activities because of an impairment or health problem?

12a. 1☐ Yes 2☐ No *(NP)*

b. In what way is — — limited? *Record limitation, not condition.*

b. Limitation

13a. What (other) condition causes this?

Ask if injury or operation: **When did [the** *(injury)* **occur?/— — have the operation?]**

Ask if operation over 3 months ago: **For what condition did — — have the operation?**

If pregnancy/delivery or 0–3 months injury or operation —

Reask question where limitation reported, saying: **Except for — —** *(condition)*, . . .?

OR reask 13b/c.

13a. *(Enter condition in C2, THEN 13b)*

1☐ Old age *(Mark "Old age" box, THEN 13c)*

b. Besides *(condition)* **is there any other condition that causes this limitation?**

b. ☐ Yes *(Reask 13a and b)* ☐ No *(13d)*

c. Is this limitation caused by any (other) specific condition?

c. ☐ Yes *(Reask 13a and b)* ☐ No

Mark box if only one condition.

d. Which of these conditions would you say is the MAIN cause of this limitation?

d. ☐ Only 1 condition

Main cause

FOOTNOTES

	☐Old age	☐Old age	☐Old age	☐Old age
	2	**3**	**4**	**5**
1.	First name / Mid. init. / Age Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age Last name / Sex 1☐M 2☐F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year
C1	HOSP. 00☐None / Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None / Number	HOSP. 00☐None / Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None / Number	HOSP. 00☐None / Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK DV 00☐None / Number	HOSP 00☐None / Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None / Number
C2	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)
B3	0☐Under 5 *(10)* 2☐18–69 *(NP)* 1☐5–17 *(11)* 3☐70 and over *(8)*	0☐Under 5 *(10)* 2☐18–69 *(NP)* 1☐5–17 *(11)* 3☐70 and over *(8)*	0☐Under 5 *(10)* 2☐18–69 *(NP)* 1☐5–17 *(11)* 3☐70 and over *(8)*	0☐Under 5 *(10)* 2☐18–69 *(NP)* 1☐5–17 *(11)* 3☐70 and over *(8)*
8.	1☐Working 2☐Keeping house 3☐Going to school 4☐Something else	1☐Working 2☐Keeping house 3☐Going to school 4☐Something else	1☐Working 2☐Keeping house 3☐Going to school 4☐Something else	1☐Working 2☐Keeping house 3☐Going to school 4☐Something else
9a.	1☐Yes *(13)* ☐No	1☐Yes *(13)* ☐No	1☐Yes *(13)* ☐No	1☐Yes *(13)* ☐No
b.	2☐Yes *(13)* 3☐No *(12)*	2☐Yes *(13)* 3☐No *(12)*	2☐Yes *(13)* 3☐No *(12)*	2☐Yes *(13)* 3☐No *(12)*
10a.	☐Yes 0☐No *(13)*	☐Yes 0☐No *(13)*	☐Yes 0☐No *(13)*	☐Yes 0☐No *(13)*
b.	1☐Yes *(13)* 2☐No *(12)*	1☐Yes *(13)* 2☐No *(12)*	1☐Yes *(13)* 2☐No *(12)*	1☐Yes *(13)* 2☐No *(12)*
11a.	1☐Yes *(13)* ☐No	1☐Yes *(13)* ☐No	1☐Yes *(13)* ☐No	1☐Yes *(13)* ☐No
b.	2☐Yes *(13)* ☐No	2☐Yes *(13)* ☐No	2☐Yes *(13)* ☐No	2☐Yes *(13)* ☐No
c.	3☐Yes *(13)* ☐No	3☐Yes *(13)* ☐No	3☐Yes *(13)* ☐No	3☐Yes *(13)* ☐No
d.	4☐Yes *(13)* 5☐No	4☐Yes *(13)* 5☐No	4☐Yes *(13)* 5☐No	4☐Yes *(13)* 5☐No
12a.	1☐Yes 2☐No *(NP)*	1☐Yes 2☐No *(NP)*	1☐Yes 2☐No *(NP)*	1☐Yes 2☐No *(NP)*
b.	Limitation	Limitation	Limitation	Limitation
13a.	*(Enter condition in C2, THEN 13b)* 1☐Old age *(Mark "Old age" box, THEN 13c)*	*(Enter condition in C2, THEN 13b)* 1☐Old age *(Mark "Old age" box, THEN 13c)*	*(Enter condition in C2, THEN 13b)* 1☐Old age *(Mark "Old age" box, THEN 13c)*	*(Enter condition in C2, THEN 13b)* 1☐Old age *(Mark "Old age" box, THEN 13c)*
b.	☐Yes *(Reask 13a and b)* ☐No *(13d)*	☐Yes *(Reask 13a and b)* ☐No *(13d)*	☐Yes *(Reask 13a and b)* ☐No *(13d)*	☐Yes *(Reask 13a and b)* ☐No *(13d)*
c.	☐Yes *(Reask 13a and b)* ☐No	☐Yes *(Reask 13a and b)* ☐No	☐Yes *(Reask 13a and b)* ☐No	☐Yes *(Reask 13a and b)* ☐No
d.	☐Only 1 condition Main cause	☐Only 1 condition Main cause	☐Only 1 condition Main cause	☐Only 1 condition Main cause

FOOTNOTES

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE

1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

If "Yes," enter names in columns

c. I have listed *(read names)*. **Have I missed:**

	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)* ☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:

Does —— usually live somewhere else?

Ask for all persons beginning with column 2:

2. What is —— relationship to *(reference person)*?

3. What is —— date of birth? *(Enter date and age and mark sex.)*

	REFERENCE PERIODS
A1	2-WEEK PERIOD
	12-MONTH DATE
	13-MONTH HOSPITAL DATE
A2	ASK CONDITION LISTS 1,2, and 3.

1. First name | Mid. init. | Age
Last name | Sex 1☐ M 2☐ F

2. Relationship REFERENCE PERSON

3. Date of birth Month | Date | Year

C1	HOSP.	WORK	RD	2-WK. DV
	00☐ None Number	1☐ Wa 2☐ Wb	1☐ Yes 2☐ No	00☐ None Number

C2

LA	IRA	DV	INJ.	CL	LTRI	HS	COND

B. LIMITATION OF ACTIVITIES PAGE, Continued

B4	*Refer to age.*	**B4**	0☐ Under 5 *(NP)* 1☐ 5–59 *(B5)* 2☐ 60–69 *(14)* 3☐ 70 and over *(NP)*
B5	*Refer to "Old age" and "LA" boxes. Mark first appropriate box.*	**B5**	☐ "Old age" box marked *(14)* ☐ Entry in "LA" box *(14)* ☐ Other *(NP)*

14a. Because of any impairment or health problem, does —— need the help of other persons with —— personal care needs, such as eating, bathing, dressing, or getting around this home?
14a. 1☐ Yes *(15)* ☐ No

If under 18, skip to next person; otherwise ask:
b. Because of any impairment or health problem, does —— need the help of other persons in handling —— routine needs, such as everyday household chores, doing necessary business, shopping, or getting around for other purposes?
b. 2☐ Yes 3☐ No *(NP)*

15a. What (other) condition causes this?
Ask if injury or operation: **When did [the** *(injury)* **occur?/—— have the operation?]**
Ask if operation over 3 months ago: **For what condition did —— have the operation?**
If pregnancy/delivery or 0—3 months injury or operation —
Reask question 14 where limitation reported, saying: **Except for ——** *(condition)*, **. . .?**
OR reask 15b/c.
15a. *(Enter condition in C2, THEN 15b)* 1☐ Old age *(Mark "Old age" box, THEN 15c)*

b. Besides *(condition)* **is there any other condition that causes this limitation?**
b. ☐ Yes *(Reask 15a and b)* ☐ No *(15d)*

c. Is this limitation caused by any (other) specific condition?
c. ☐ Yes *(Reask 15a and b)* ☐ No

Mark box if only one condition.
d. Which of these conditions would you say is the MAIN cause of this limitation?
d. ☐ Only 1 condition
_______________ Main cause

FOOTNOTES

	☐ Old age	☐ Old age	☐ Old age	☐ Old age
	2	**3**	**4**	**5**
1.	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year
C1	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number
C2	LA RA DV INJ. CL LTR HS COND	LA RA DV INJ. CL LTR HS COND	LA RA DV INJ. CL LTR HS COND	LA RA DV INJ. CL LTR HS COND
B4	0☐Under 5 *(NP)* 2☐60–69 *(14)* 1☐5–59 *(B5)* 3☐70 and over *(NP)*	0☐Under 5 *(NP)* 2☐60–69 *(14)* 1☐5–59 *(B5)* 3☐70 and over *(NP)*	0☐Under 5 *(NP)* 2☐60–69 *(14)* 1☐5–59 *(B5)* 3☐70 and over *(NP)*	0☐Under 5 *(NP)* 2☐60–69 *(14)* 1☐5–59 *(B5)* 3☐70 and over *(NP)*
B5	☐"Old age" box marked *(14)* ☐Entry in "LA" box *(14)* ☐Other *(NP)*	☐"Old age" box marked *(14)* ☐Entry in "LA" box *(14)* ☐Other *(NP)*	☐"Old age" box marked *(14)* ☐Entry in "LA" box *(14)* ☐Other *(NP)*	☐"Old age" box marked *(14)* ☐Entry in "LA" box *(14)* ☐Other *(NP)*
14a.	1☐Yes *(15)* ☐No	1☐Yes *(15)* ☐No	1☐Yes *(15)* ☐No	1☐Yes *(15)* ☐No
b.	2☐Yes 3☐No *(NP)*	2☐Yes 3☐No *(NP)*	2☐Yes 3☐No *(NP)*	2☐Yes 3☐No *(NP)*
15a.	*(Enter condition in C2, THEN 15b)* 1☐Old age *(Mark "Old age" box, THEN 15c)*	*(Enter condition in C2, THEN 15b)* 1☐Old age *(Mark "Old age" box, THEN 15c)*	*(Enter condition in C2, THEN 15b)* 1☐Old age *(Mark "Old age" box, THEN 15c)*	*(Enter condition in C2, THEN 15b)* 1☐Old age *(Mark "Old age" box, THEN 15c)*
b.	☐Yes *(Reask 15a and b)* ☐No *(15d)*	☐Yes *(Reask 15a and b)* ☐No *(15d)*	☐Yes *(Reask 15a and b)* ☐No *(15d)*	☐Yes *(Reask 15a and b)* ☐No *(15d)*
c.	☐Yes *(Reask 15a and b)* ☐No	☐Yes *(Reask 15a and b)* ☐No	☐Yes *(Reask 15a and b)* ☐No	☐Yes *(Reask 15a and b)* ☐No
d.	☐Only 1 condition Main cause	☐Only 1 condition Main cause	☐Only 1 condition Main cause	☐Only 1 condition Main cause

FOOTNOTES

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE 1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*

☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:

Does — — usually live somewhere else?

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

	1.	2.	3.
	First name / Mid. init. / Age	Relationship **REFERENCE PERSON**	Date of birth Month / Date / Year
	Last name / Sex 1☐M 2☐F		
C1	HOSP. 00☐None Number	WORK 1☐Wa 2☐Wb	RD 1☐Yes 2☐No
	2-WK. DV 00☐None Number		
C2	LA IRA DV INJ. CL LTR HSP COND		
	LA IRA DV INJ. CL LTR HSP COND		
	LA IRA DV INJ. CL LTR HSP COND		
	LA IRA DV INJ. CL LTR HSP COND		
	LA IRA DV INJ. CL LTR HSP COND		

	REFERENCE PERIODS
A1	**2-WEEK PERIOD**
	12-MONTH DATE
	13-MONTH HOSPITAL DATE
A2	**ASK CONDITION LISTS 1,2, and 3.**

D. RESTRICTED ACTIVITY PAGE PERSON 1

Hand calendar.

{The next questions refer to the 2 weeks outlined in red on that calendar, beginning Monday, *(date)* **and ending this past Sunday** *(date).*}

D1 *Refer to age.*

☐ Under 5 *(4)* ☐ 5—17 *(3)* ☐ 18 and over *(1)*

1a. DURING THOSE 2 WEEKS, did — — work at any time at a job or business not counting work around the house? (Include unpaid work in the family [farm/business].)

1☐Yes *(Mark "Wa" box, THEN 2)* 2☐No

b. Even though — — did not work during those 2 weeks, did — — have a job or business?

1☐Yes *(Mark "Wb" box, THEN 2)* 2☐No *(4)*

2a. During those 2 weeks, did — — miss any time from a job or business because of illness or injury?

☐Yes 00☐No *(4)*

b. During that 2-week period, how many days did — — miss more than half of the day from — — job or business because of illness or injury?

00☐None *(4)* No. of work-loss days _____ *(4)*

3a. During those 2 weeks, did — — miss any time from school because of illness or injury?

☐Yes 00☐No *(4)*

b. During that 2-week period, how many days did — — miss more than half of the day from school because of illness or injury?

00☐None No of school-loss days _____

4a. During those 2 weeks, did — — stay in bed because of illness or injury?

☐Yes 00☐No *(6)*

b. During that 2-week period, how many days did — — stay in bed more than half of the day because of illness or injury?

00☐None *(6)* No. of bed days _____ *(D2)*

D2 *Refer to 2b and 3b.*

☐No days in 2b or 3b *(6)*

☐1 or more days in 2b or 3b *(5)*

5. On how many of the *(number in 2b or 3b)* **days missed from [work/school] did — — stay in bed more than half of the day because of illness or injury?**

00☐None _____ No of days

Refer to 2b, 3b, and 4b.

6a. (Not counting the day(s) [missed from work / missed from school / (and) in bed]),

Was there any (OTHER) time during those 2 weeks that — — cut down on the things — — usually does because of illness or injury?

☐Yes 00☐No *(D3)*

b. (Again, not counting the day(s) [missed from work / missed from school / (and) in bed]),

During that period, how many (OTHER) days did — — cut down for more than half of the day because of illness or injury?

00☐None No of cut down days _____

D3 *Refer to 2—6.*

☐No days in 2—6 *(Mark "No" in RD, THEN NP)*

☐1 or more days in 2—6 *(Mark "Yes" in RD, THEN 7)*

Refer to 2b, 3b, 4b, and 6b.

7a. What (other) condition caused — — to [miss work / miss school / (or) stay in bed / (or) cut down] during those 2 weeks?

(Enter condition in C2, THEN 7b)

b. Did any other condition cause — — to [miss work / miss school / (or) stay in bed / (or) cut down] during that period?

1☐Yes *(Reask 7a and b)* 2☐No

FOOTNOTES

	2	3	4	5
	☐ Old age	☐ Old age	☐ Old age	☐ Old age
1.	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year
C1	HOSP. 00☐None ___ Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None ___ Number	HOSP. 00☐None ___ Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None ___ Number	HOSP. 00☐None ___ Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None ___ Number	HOSP. 00☐None ___ Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None ___ Number
C2	LA RA DV INJ. CLLTR HS COND.	LA RA DV INJ. CLLTR HS COND.	LA RA DV INJ. CLLTR HS COND.	LA RA DV INJ. CLLTR HS COND.

D. RESTRICTED ACTIVITY PAGE PERSON 2

Hand calendar.

{The next questions refer to the 2 weeks outlined in red on that calendar, beginning Monday, *(date)* and ending this past Sunday *(date)*.}

D1 *Refer to age.*

☐ Under 5 *(4)* ☐ 5–17 *(3)* ☐ 18 and over *(1)*

1a. DURING THOSE 2 WEEKS, did — — work at any time at a job or business not counting work around the house? (Include unpaid work in the family [farm/business].)

1☐ Yes *(Mark "Wa" box, THEN 2)* 2☐ No

b. Even though — — did not work during those 2 weeks, did — — have a job or business?

1☐ Yes *(Mark "Wb" box, THEN 2)* 2☐ No *(4)*

2a. During those 2 weeks, did — — miss any time from a job or business because of illness or injury?

☐ Yes 00☐ No *(4)*

b. During that 2-week period, how many days did — — miss more than half of the day from — — job or business because of illness or injury?

00☐ None *(4)* No. of work-loss days ___ *(4)*

3a. During those 2 weeks, did — — miss any time from school because of illness or injury?

☐ Yes 00☐ No *(4)*

b. During that 2-week period, how many days did — — miss more than half of the day from school because of illness or injury?

00☐ None No. of school-loss days ___

4a. During those 2 weeks, did — — stay in bed because of illness or injury?

☐ Yes 00☐ No *(6)*

b. During that 2-week period, how many days did — — stay in bed more than half of the day because of illness or injury?

00☐ None *(6)* No. of bed days ___ *(D2)*

D2 *Refer to 2b and 3b.*

☐ No days in 2b or 3b *(6)*

☐ 1 or more days in 2b or 3b *(5)*

5. On how many of the *(number in 2b or 3b)* days missed from [work/school] did — — stay in bed more than half of the day because of illness or injury?

00☐ None ___ No. of days

Refer to 2b, 3b, and 4b.

6a. (Not counting the day(s) [missed from work / missed from school / (and) in bed]),

Was there any (OTHER) time during those 2 weeks that — — cut down on the things — — usually does because of illness or injury?

☐ Yes 00☐ No *(D3)*

b. (Again, not counting the day(s) [missed from work / missed from school / (and) in bed]),

During that period, how many (OTHER) days did — — cut down for more than half of the day because of illness or injury?

00☐ None No. of cut-down days ___

D3 *Refer to 2–6.*

☐ No days in 2–6 *(Mark "No" in RD, THEN NP)*

☐ 1 or more days in 2–6 *(Mark "Yes" in RD, THEN 7)*

Refer to 2b, 3b, 4b, and 6b.

7a. What (other) condition caused — — to [miss work / miss school / (or) stay in bed / (or) cut down] during those 2 weeks?

(Enter condition in C2, THEN 7b)

b. Did any other condition cause — — to [miss work / miss school / (or) stay in bed / (or) cut down] during that period?

1☐ Yes *(Reask 7a and b)* 2☐ No

FOOTNOTES

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE 1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
– any babies or small children?	☐	☐
– any lodgers, boarders, or persons you employ who live here?	☐	☐
– anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
– anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*
☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1–C2 and enter reason.)*

Probe if necessary:

Does — — usually live somewhere else?

	1.	2.	3.	C1	C2
	First name / Last name	Relationship to REFERENCE PERSON	Date of birth Month / Date / Year	HOSP. / WORK / RD / 2-WK. DV	LA IRA DV INJ. CL LTR HSP COND.
	Mid. init.			HOSP.: 00☐ None; Number	WORK: 1☐ Wa, 2☐ Wb
	Age			RD: 1☐ Yes, 2☐ No	2-WK. DV: 00☐ None; Number
	Sex 1☐ M 2☐ F				

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

A1

REFERENCE PERIODS
2-WEEK PERIOD
12-MONTH DATE
13-MONTH HOSPITAL DATE

A2 ASK CONDITION LISTS 1, 2, and 3.

D. RESTRICTED ACTIVITY PAGE PERSON 3

Hand calendar.

{The next questions refer to the 2 weeks outlined in red on that calendar, beginning Monday, *(date)* **and ending this past Sunday** *(date)*.**}**

D1 *Refer to age.*
☐ Under 5 *(4)* ☐ 5–17 *(3)* ☐ 18 and over *(1)*

1a. DURING THOSE 2 WEEKS, did — — work at any time at a job or business not counting work around the house? (Include unpaid work in the family [farm/business].)
1☐ Yes *(Mark "Wa" box, THEN 2)* 2☐ No

b. Even though — — did not work during those 2 weeks, did — — have a job or business?
1☐ Yes *(Mark "Wb" box, THEN 2)* 2☐ No *(4)*

2a. During those 2 weeks, did — — miss any time from a job or business because of illness or injury?
☐ Yes 00☐ No *(4)*

b. During that 2-week period, how many days did — — miss more than half of the day from — — job or business because of illness or injury?
00☐ None *(4)* No. of work-loss days _____ *(4)*

3a. During those 2 weeks, did — — miss any time from school because of illness or injury?
☐ Yes 00☐ No *(4)*

b. During that 2-week period, how many days did — — miss more than half of the day from school because of illness or injury?
00☐ None No. of school-loss days _____

4a. During those 2 weeks, did — — stay in bed because of illness or injury?
☐ Yes 00☐ No *(6)*

b. During that 2-week period, how many days did — — stay in bed more than half of the day because of illness or injury?
00☐ None *(6)* No. of bed days _____ *(D2)*

D2 *Refer to 2b and 3b.*
☐ No days in 2b or 3b *(6)*
☐ 1 or more days in 2b or 3b *(5)*

5. On how many of the *(number in 2b or 3b)* **days missed from [work/school] did — — stay in bed more than half of the day because of illness or injury?**
00☐ None No. of days _____

Refer to 2b, 3b, and 4b.

6a. (Not counting the day(s) [missed from work / missed from school / (and) in bed]),
Was there any (OTHER) time during those 2 weeks that — — cut down on the things — — usually does because of illness or injury?
☐ Yes 00☐ No *(D3)*

b. (Again, not counting the day(s) [missed from work / missed from school / (and) in bed]),
During that period, how many (OTHER) days did — — cut down for more than half of the day because of illness or injury?
00☐ None No. of cut-down days _____

D3 *Refer to 2–6.*
☐ No days in 2–6 *(Mark "No" in RD, THEN NP)*
☐ 1 or more days in 2–6 *(Mark "Yes" in RD, THEN 7)*

Refer to 2b, 3b, 4b, and 6b.

7a. What (other) condition caused — — to [miss work / miss school / (or) stay in bed / (or) cut down] during those 2 weeks?
(Enter condition in C2, THEN 7b)

b. Did any other condition cause — — to [miss work / miss school / (or) stay in bed / (or) cut down] during that period?
1☐ Yes *(Reask 7a and b)* 2☐ No

FOOTNOTES

	☐ Old age	☐ Old age	☐ Old age	☐ Old age
	2	**3**	**4**	**5**
1.	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month Date Year	Date of birth Month Date Year	Date of birth Month Date Year	Date of birth Month Date Year
C1	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number
C2	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND	LA RA DV INJ CL LTR HS COND	LA RA DV INJ. CL LTR HS COND

D. RESTRICTED ACTIVITY PAGE PERSON 4

Hand calendar.

{The next questions refer to the 2 weeks outlined in red on that calendar, beginning Monday, *(date)* and ending this past Sunday *(date)*.}

D1 *Refer to age.*

☐ Under 5 *(4)* ☐ 5–17 *(3)* ☐ 18 and over *(1)*

1a. DURING THOSE 2 WEEKS, did — — work at any time at a job or business not counting work around the house? (Include unpaid work in the family [farm/business].)

1☐Yes *(Mark "Wa" box, THEN 2)* 2☐No

b. Even though — — did not work during those 2 weeks, did — — have a job or business?

1☐Yes *(Mark "Wb" box, THEN 2)* 2☐No *(4)*

2a. During those 2 weeks, did — — miss any time from a job or business because of illness or injury?

☐Yes 00☐No *(4)*

b. During that 2-week period, how many days did — — miss more than half of the day from — — job or business because of illness or injury?

00☐None *(4)* No. of work-loss days _____ *(4)*

3a. During those 2 weeks, did — — miss any time from school because of illness or injury?

☐Yes 00☐No *(4)*

b. During that 2-week period, how many days did — — miss more than half of the day from school because of illness or injury?

00☐None No. of school-loss days _____

4a. During those 2 weeks, did — — stay in bed because of illness or injury?

☐Yes 00☐No *(6)*

b. During that 2-week period, how many days did — — stay in bed more than half of the day because of illness or injury?

00☐None *(6)* No. of bed days _____ *(D2)*

D2 *Refer to 2b and 3b.*

☐No days in 2b or 3b *(6)*

☐1 or more days in 2b or 3b *(5)*

5. On how many of the *(number in 2b or 3b)* days missed from [work/school] did — — stay in bed more than half of the day because of illness or injury?

00☐None No. of days _____

Refer to 2b, 3b, and 4b.

6a. (Not counting the day(s) [missed from work / missed from school / (and) in bed]), Was there any (OTHER) time during those 2 weeks that — — cut down on the things — — usually does because of illness or injury?

☐Yes 00☐No *(D3)*

b. (Again, not counting the day(s) [missed from work / missed from school / (and) in bed]), During that period, how many (OTHER) days did — — cut down for more than half of the day because of illness or injury?

00☐None No. of cut-down days _____

D3 *Refer to 2–6.*

☐No days in 2–6 *(Mark "No" in RD, THEN NP)*

☐1 or more days in 2–6 *(Mark "Yes" in RD, THEN 7)*

Refer to 2b, 3b, 4b, and 6b.

7a. What (other) condition caused — — to [miss work / miss school / (or) stay in bed / (or) cut down] during those 2 weeks?

(Enter condition in C2, THEN 7b)

b. Did any other condition cause — — to [miss work / miss school / (or) stay in bed / (or) cut down] during that period?

1☐Yes *(Reask 7a and b)* 2☐No

FOOTNOTES

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE 1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*
☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:

Does — — usually live somewhere else?

	1.	2.	3.	C1	C2
	First name / Last name	Relationship **REFERENCE PERSON**	Date of birth Month / Date / Year	HOSP. / WORK / RD / 2-WK. DV	LA IRA DV INJ. CL LTRI HST COND
	Mid. init.			oo☐ None / Number	
	Age			1☐ Wa 2☐ Wb	
	Sex 1☐ M 2☐ F			1☐ Yes 2☐ No	
				oo☐ None / Number	

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

A1 REFERENCE PERIODS

2-WEEK PERIOD

12-MONTH DATE

13-MONTH HOSPITAL DATE

A2 ASK CONDITION LISTS 1,2, and 3.

D. RESTRICTED ACTIVITY PAGE PERSON 5

Hand calendar.

{The next questions refer to the 2 weeks outlined in red on that calendar, beginning Monday, *(date)* **and ending this past Sunday** *(date).}*

D1 *Refer to age.*
☐ Under 5 *(4)* ☐ 5—17 *(3)* ☐ 18 and over *(1)*

1a. DURING THOSE 2 WEEKS, did — — work at any time at a job or business not counting work around the house? (Include unpaid work in the family [farm/business].)
1☐ Yes *(Mark "Wa" box, THEN 2)* 2☐ No

b. Even though — — did not work during those 2 weeks, did — — have a job or business?
1☐ Yes *(Mark "Wb" box, THEN 2)* 2☐ No *(4)*

2a. During those 2 weeks, did — — miss any time from a job or business because of illness or injury?
☐ Yes oo☐ No *(4)*

b. During that 2-week period, how many days did — — miss more than half of the day from — — job or business because of illness or injury?
oo☐ None *(4)* No. of work-loss days _____ *(4)*

3a. During those 2 weeks, did — — miss any time from school because of illness or injury?
☐ Yes oo☐ No *(4)*

b. During that 2-week period, how many days did — — miss more than half of the day from school because of illness or injury?
oo☐ None No. of school-loss days _____

4a. During those 2 weeks, did — — stay in bed because of illness or injury?
☐ Yes oo☐ No *(6)*

b. During that 2-week period, how many days did — — stay in bed more than half of the day because of illness or injury?
oo☐ None *(6)* No. of bed days _____ *(D2)*

D2 *Refer to 2b and 3b.*
☐ No days in 2b or 3b *(6)*
☐ 1 or more days in 2b or 3b *(5)*

5. On how many of the *(number in 2b or 3b)* **days missed from [work/school] did — — stay in bed more than half of the day because of illness or injury?**
oo☐ None _____ No. of days

Refer to 2b, 3b, and 4b.

6a. (Not counting the day(s) [missed from work / missed from school / (and) in bed]), Was there any (OTHER) time during those 2 weeks that — — cut down on the things — — usually does because of illness or injury?
☐ Yes oo☐ No *(D3)*

b. (Again, not counting the day(s) [missed from work / missed from school / (and) in bed]), During that period, how many (OTHER) days did — — cut down for more than half of the day because of illness or injury?
oo☐ None No. of cut-down days _____

D3 *Refer to 2—6.*
☐ No days in 2—6 *(Mark "No" in RD, THEN NP)*
☐ 1 or more days in 2—6 *(Mark "Yes" in RD, THEN 7)*

Refer to 2b, 3b, 4b, and 6b.

7a. What (other) condition caused — — to [miss work / miss school / (or) stay in bed / (or) cut down] during those 2 weeks?
(Enter condition in C2, THEN 7b)

b. Did any other condition cause — — to [miss work / miss school / (or) stay in bed / (or) cut down] during that period?
1☐ Yes *(Reask 7a and b)* 2☐ No

FOOTNOTES

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE

1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*

☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:

Does — — usually live somewhere else?

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

A1

REFERENCE PERIODS
2-WEEK PERIOD
12-MONTH DATE
13-MONTH HOSPITAL DATE

A2 ASK CONDITION LISTS 1,2, and 3.

	1
1.	First name / Mid. init. / Age
	Last name / Sex 1☐M 2☐F
2.	Relationship **REFERENCE PERSON**
3.	Date of birth Month / Date / Year

C1

HOSP	WORK	RD	2-WK. DV
00☐ None	1☐ Wa 2☐ Wb	1☐ Yes 2☐ No	00☐ None
Number			Number

C2

LA	IRA	DV	INJ.	CL LTR	HS COND

E. 2-WEEK DOCTOR VISITS PROBE PAGE

Read to respondent(s):

These next questions are about health care received during the 2 weeks outlined in red on that calendar.

E1 *Refer to age.*

E1 ☐ Under 14 *(1b)* ☐ 14 and over *(1a)*

1a. During those 2 weeks, how many times did — — see or talk to a medical doctor? (Include all types of doctors, such as dermatologists, psychiatrists, and ophthalmologists, as well as general practitioners and osteopaths.) (Do not count times while an overnight patient in a hospital.)

b. During those 2 weeks, how many times did anyone see or talk to a medical doctor about — —? (Do not count times while an overnight patient in a hospital.)

1a. and b. 00☐ None ☐☐ Number of times *(NP)*

2a. (Besides the time(s) you just told me about) During those 2 weeks, did anyone in the family receive health care at home or go to a doctor's office, clinic, hospital or some other place? Include care from a nurse or anyone working with or for a medical doctor. Do not count times while an overnight patient in a hospital. ☐ Yes ☐ No *(3a)*

b. Who received this care? *Mark "DR Visit" box in person's column.*

2b. ☐ DR Visit

c. Anyone else? ☐ Yes *(Reask 2b and c)* ☐ No

Ask for each person with "DR Visit" in 2b:

d. How many times did — — receive this care during that period?

d. ☐☐ Number of times

3a. (Besides the time(s) you already told me about) During those 2 weeks, did anyone in the family get any medical advice, prescriptions or test results over the PHONE from a doctor, nurse, or anyone working with or for a medical doctor? ☐ Yes ☐ No *(E2)*

b. Who was the phone call about? *Mark "Phone call" box in person's column.*

3b. ☐ Phone call

c. Were there any calls about anyone else? ☐ Yes *(Reask 3b and c)* ☐ No

Ask for each person with "Phone call" in 3b:

d. How many telephone calls were made about — —?

d. ☐☐ Number of calls

E2 *Add numbers in 1, 2d, and 3d for each person. Record total number of visits and calls in "2-WK. DV" box in item C1.*

FOOTNOTES

	☐ Old age	☐ Old age	☐ Old age	☐ Old age
	2	**3**	**4**	**5**
1.	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year
C1	HOSP. 00☐None ____ Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None ____ Number	HOSP. 00☐None ____ Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None ____ Number	HOSP. 00☐None ____ Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None ____ Number	HOSP. 00☐None ____ Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None ____ Number
C2	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)
E1	☐ Under 14 *(1b)* ☐ 14 and over *(1a)*	☐ Under 14 *(1b)* ☐ 14 and over *(1a)*	☐ Under 14 *(1b)* ☐ 14 and over *(1a)*	☐ Under 14 *(1b)* ☐ 14 and over *(1a)*
1a. and b.	00☐None; ____ Number of times } *(NP)*	00☐None; ____ Number of times } *(NP)*	00☐None; ____ Number of times } *(NP)*	00☐None; ____ Number of times } *(NP)*
2b.	☐ DR Visit	☐ DR Visit	☐ DR Visit	☐ DR Visit
d.	____ Number of times	____ Number of times	____ Number of times	____ Number of times
3b.	☐ Phone call	☐ Phone call	☐ Phone call	☐ Phone call
d.	____ Number of calls	____ Number of calls	____ Number of calls	____ Number of calls

E2 *Add numbers in 1, 2d, and 3d for each person. Record total number of visits and calls in "2-WK. DV" box in item C1.*

FOOTNOTES

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE

1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*

☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:

Does — — usually live somewhere else?

	1. First name	Mid. init.	Age
	Last name		Sex 1☐M 2☐F
	2. Relationship **REFERENCE PERSON**		
	3. Date of birth Month	Date	Year

C1

HOSP.	WORK	RD	2-WK. DV
00☐ None	1☐ Wa	1☐ Yes	00☐ None
Number	2☐ Wb	2☐ No	Number

C2

LA IRA DV INJ. CL LTR HST COND.

LA IRA DV INJ. CL LTR HST COND

LA IRA DV INJ. CL LTR HST COND

LA IRA DV INJ. CL LTR HST COND

LA IRA DV INJ. CL LTR HST COND.

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

A1

REFERENCE PERIODS

2-WEEK PERIOD

12-MONTH DATE

13-MONTH HOSPITAL DATE

A2 **ASK CONDITION LISTS 1,2, and 3.**

F. 2-WEEK DOCTOR VISITS PAGE

DR VISIT 1

Refer to C1, "2-WK. DV" box.

PERSON NUMBER _____

F1 *Refer to age.*

F1 ☐ Under 14 *(1b)* ☐ 14 and over *(1a)*

1a. On what (other) date(s) during those 2 weeks did — — see or talk to a medical doctor, nurse, or doctor's assistant?

b. On what (other) date(s) during those 2 weeks did anyone see or talk to a medical doctor, nurse, or doctor's assistant about — —?

1a. and b. Month ___ Date ___ OR {7777☐ Last week, 8888☐ Week before}

Ask after last DR visit column for this person:

c. Were there any other visits or calls for — — during that period? *Make necessary correction to 2-Wk. DV box in C1.*

c. 1☐ Yes *(Reask 1a or b and c)* 2☐ No *(Ask 2–6 for each visit)*

2a. Where did — — receive health care on *(date in 1)* **— at a GHA medical center or somewhere else, or was this a telephone call?**
If telephone call: **Was this call to GHA or somewhere else?**

2a. 1☐ GHA Med Center *(b)* 2☐ Somewhere else *(c)* 3☐ Phone call to GHA *(b)* 4☐ Phone call somewhere else *(c)*

b. Which GHA medical center was that?

b. _____ *(3)*

c. Where was that? *Record full name of place.*

c. _____

d. What kind of place is that — a doctor's office, clinic, hospital, or some other kind of place?

d.

Not in hospital:	Hospital:
02☐ Home	08☐ O P clinic
03☐ Doctor's office	09☐ Emergency room
04☐ Co or Ind clinic	10☐ Doctor's office
05☐ Other clinic	11☐ Lab
06☐ Lab	12☐ Overnight patient *(Next doctor visit)*
07☐ Other *(Specify)*	88☐ Other *(Specify)*

Ask 3b if under 14.

3a. Did — — actually talk to a medical doctor?

3a. and b. 1☐ Yes *(3d)* 2☐ No *(3c)* 8☐ DK if M D *(3c)* 9☐ DK who was seen *(4)*

b. Did anyone actually talk to a medical doctor about — —?

c. What type of medical person or assistant was talked to?

c. _____ *(4)* 99☐ DK *(4)*

d. What was the doctor's name?

d. _____ 99☐ DK

e. Is that doctor a general practitioner or a specialist?

e. 1☐ GP *(4)* 2☐ Specialist *(3f)* 9☐ DK *(4)*

f. What kind of specialist?

f. _____ 99☐ DK

Ask 4b if under 14.

4a. For what condition did — — see or talk to the [doctor/*(entry in 3c)***] on** *(date in 1)*? *Mark first appropriate box.*

4a. and b. 1☐ Condition *(Item C2 THEN 4g)* 2☐ Pregnancy *(4e)* 3☐ Test(s) or examination *(4c)* 8☐ Other *(Specify)* _____ *(4g)*

b. For what condition did anyone see or talk to the [doctor/*(entry in 3c)***] about — — on** *(date in 1)*? *Mark first appropriate box.*

c. Was a condition found as a result of the [test(s)/examination]?

c. ☐ Yes *(4h)* ☐ No

d. Was this [test/examination] because of a specific condition — — had?

d. ☐ Yes *(4h)* ☐ No *(4g)*

e. During the past 2 weeks was — — sick because of her pregnancy?

e. ☐ Yes ☐ No *(4g)*

f. What was the matter?

f. _____ *(Item C2, THEN 4g)*

g. During this [visit/call] was the [doctor/*(entry in 3c)***] talked to about any (other) condition?**

g. ☐ Yes ☐ No *(5)*

h. What was the condition?

h. ☐ Pregnancy *(4e)* _____ *(Item C2, THEN 4g)*

Mark box if "Telephone" in 2.

5a. Did — — have any kind of surgery or operation during this visit, including bone settings and stitches?

5a. 0☐ Telephone in 2 *(Next Dr visit)* 1☐ Yes 2☐ No *(6)*

b. What was the name of the surgery or operation? *If name of operation not known, describe what was done.*

b. (1) _____ (2) _____

c. Was there any other surgery or operation during this visit?

c. ☐ Yes *(Reask 5b and c)* ☐ No

Go to next DV if "Home" or "GHA medical center" in 2.

6. In what city (town), county, and State is the *(place in 2)* **located?**

6. City County _____ / State ZIP Code _____ /

	2 ☐ Old age	3 ☐ Old age		4 ☐ Old age	5 ☐ Old age
1.	First name / Mid. init. / Age Last name / Sex 1 ☐ M 2 ☐ F	First name / Mid. init. / Age Last name / Sex 1 ☐ M 2 ☐ F	1.	First name / Mid. init. / Age Last name / Sex 1 ☐ M 2 ☐ F	First name / Mid. init. / Age Last name / Sex 1 ☐ M 2 ☐ F
2.	Relationship	Relationship	2.	Relationship	Relationship
3.	Date of birth Month / Date / Year	Date of birth Month / Date / Year	3.	Date of birth Month / Date / Year	Date of birth Month / Date / Year
C1	HOSP. 00 ☐ None ___ Number; WORK 1 ☐ Wa 2 ☐ Wb; RD 1 ☐ Yes 2 ☐ No; 2-WK. DV 00 ☐ None ___ Number	HOSP. 00 ☐ None ___ Number; WORK 1 ☐ Wa 2 ☐ Wb; RD 1 ☐ Yes 2 ☐ No; 2-WK. DV 00 ☐ None ___ Number	C1	HOSP. 00 ☐ None ___ Number; WORK 1 ☐ Wa 2 ☐ Wb; RD 1 ☐ Yes 2 ☐ No; 2-WK. DV 00 ☐ None ___ Number	HOSP. 00 ☐ None ___ Number; WORK 1 ☐ Wa 2 ☐ Wb; RD 1 ☐ Yes 2 ☐ No; 2-WK. DV 00 ☐ None ___ Number
C2	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.	C2	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.
	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.		LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.
	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.		LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.
	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.		LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.
	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.		LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.

	DR VISIT 2	DR VISIT 3	DR VISIT 4
	PERSON NUMBER ___	**PERSON NUMBER** ___	**PERSON NUMBER** ___
F1	☐ Under 14 *(1b)* ☐ 14 and over *(1a)*	☐ Under 14 *(1b)* ☐ 14 and over *(1a)*	☐ Under 14 *(1b)* ☐ 14 and over *(1a)*
1a. and b.	___ Month ___ Date OR { 7777 ☐ Last week; 8888 ☐ Week before }	___ Month ___ Date OR { 7777 ☐ Last week; 8888 ☐ Week before }	___ Month ___ Date OR { 7777 ☐ Last week; 8888 ☐ Week before }
c.	1 ☐ Yes *(Reask 1a or b and c)* 2 ☐ No *(Ask 2–6 for each visit)*	1 ☐ Yes *(Reask 1a or b and c)* 2 ☐ No *(Ask 2–6 for each visit)*	1 ☐ Yes *(Reask 1a or b and c)* 2 ☐ No *(Ask 2–6 for each visit)*
2a.	1 ☐ GHA Med. Center *(b)* 3 ☐ Phone call to GHA *(b)* 2 ☐ Somewhere else *(c)* 4 ☐ Phone call somewhere else *(c)*	1 ☐ GHA Med. Center *(b)* 3 ☐ Phone call to GHA *(b)* 2 ☐ Somewhere else *(c)* 4 ☐ Phone call somewhere else *(c)*	1 ☐ GHA Med. Center *(b)* 3 ☐ Phone call to GHA *(b)* 2 ☐ Somewhere else *(c)* 4 ☐ Phone call somewhere else *(c)*
b.	___ *(3)*	___ *(3)*	___ *(3)*
c.	___	___	___
d.	**Not in hospital:** 02 ☐ Home; 03 ☐ Doctor's office; 04 ☐ Co. or Ind. clinic; 05 ☐ Other clinic; 06 ☐ Lab; 07 ☐ Other *(Specify)* ___ **Hospital:** 08 ☐ O.P. clinic; 09 ☐ Emergency room; 10 ☐ Doctor's office; 11 ☐ Lab; 12 ☐ Overnight patient *(Next doctor visit)*; 88 ☐ Other *(Specify)* ___	**Not in hospital:** 02 ☐ Home; 03 ☐ Doctor's office; 04 ☐ Co. or Ind. clinic; 05 ☐ Other clinic; 06 ☐ Lab; 07 ☐ Other *(Specify)* ___ **Hospital:** 08 ☐ O.P. clinic; 09 ☐ Emergency room; 10 ☐ Doctor's office; 11 ☐ Lab; 12 ☐ Overnight patient *(Next doctor visit)*; 88 ☐ Other *(Specify)* ___	**Not in hospital:** 02 ☐ Home; 03 ☐ Doctor's office; 04 ☐ Co. or Ind. clinic; 05 ☐ Other clinic; 06 ☐ Lab; 07 ☐ Other *(Specify)* ___ **Hospital:** 08 ☐ O.P. clinic; 09 ☐ Emergency room; 10 ☐ Doctor's office; 11 ☐ Lab; 12 ☐ Overnight patient *(Next doctor visit)*; 88 ☐ Other *(Specify)* ___
3a. and b.	1 ☐ Yes *(3d)* 8 ☐ DK if M.D. *(3c)* 2 ☐ No *(3c)* 9 ☐ DK who was seen *(4)*	1 ☐ Yes *(3d)* 8 ☐ DK if M.D. *(3c)* 2 ☐ No *(3c)* 9 ☐ DK who was seen *(4)*	1 ☐ Yes *(3d)* 8 ☐ DK if M.D. *(3c)* 2 ☐ No *(3c)* 9 ☐ DK who was seen *(4)*
c.	___ *(4)* 99 ☐ DK *(4)*	___ *(4)* 99 ☐ DK *(4)*	___ *(4)* 99 ☐ DK *(4)*
d.	___ 99 ☐ DK	___ 99 ☐ DK	___ 99 ☐ DK
e.	1 ☐ GP *(4)* 2 ☐ Specialist *(3f)* 9 ☐ DK *(4)*	1 ☐ GP *(4)* 2 ☐ Specialist *(3f)* 9 ☐ DK *(4)*	1 ☐ GP *(4)* 2 ☐ Specialist *(3f)* 9 ☐ DK *(4)*
f.	___ 99 ☐ DK	___ 99 ☐ DK	___ 99 ☐ DK
4a. and b.	1 ☐ Condition *(Item C2, THEN 4g)* 2 ☐ Pregnancy *(4e)* 3 ☐ Test(s) or examination *(4c)* 8 ☐ Other *(Specify)* – ___ *(4g)*	1 ☐ Condition *(Item C2, THEN 4g)* 2 ☐ Pregnancy *(4e)* 3 ☐ Test(s) or examination *(4c)* 8 ☐ Other *(Specify)* – ___ *(4g)*	1 ☐ Condition *(Item C2, THEN 4g)* 2 ☐ Pregnancy *(4e)* 3 ☐ Test(s) or examination *(4c)* 8 ☐ Other *(Specify)* – ___ *(4g)*
c.	☐ Yes *(4h)* ☐ No	☐ Yes *(4h)* ☐ No	☐ Yes *(4h)* ☐ No
d.	☐ Yes *(4h)* ☐ No *(4g)*	☐ Yes *(4h)* ☐ No *(4g)*	☐ Yes *(4h)* ☐ No *(4g)*
e.	☐ Yes ☐ No *(4g)*	☐ Yes ☐ No *(4g)*	☐ Yes ☐ No *(4g)*
f.	___ *(Item C2, THEN 4g)*	___ *(Item C2, THEN 4g)*	___ *(Item C2, THEN 4g)*
g.	☐ Yes ☐ No *(5)*	☐ Yes ☐ No *(5)*	☐ Yes ☐ No *(5)*
h.	☐ Pregnancy *(4e)* ___ *(Item C2, THEN 4g)*	☐ Pregnancy *(4e)* ___ *(Item C2, THEN 4g)*	☐ Pregnancy *(4e)* ___ *(Item C2, THEN 4g)*
5a.	0 ☐ Telephone in 2 *(Next Dr. visit)* 1 ☐ Yes 2 ☐ No *(6)*	0 ☐ Telephone in 2 *(Next Dr. visit)* 1 ☐ Yes 2 ☐ No *(6)*	0 ☐ Telephone in 2 *(Next Dr. visit)* 1 ☐ Yes 2 ☐ No *(6)*
b.	(1) ___ (2) ___	(1) ___ (2) ___	(1) ___ (2) ___
c.	☐ Yes *(Reask 5b and c)* ☐ No	☐ Yes *(Reask 5b and c)* ☐ No	☐ Yes *(Reask 5b and c)* ☐ No
6.	City/County ___ / ___ State/ZIP Code ___ / ___	City/County ___ / ___ State/ZIP Code ___ / ___	City/County ___ / ___ State/ZIP Code ___ / ___

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE

1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*

☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:

Does — — usually live somewhere else?

	1.	2.	3.	C1	C2
	First name / Mid. int. / Age	Relationship **REFERENCE PERSON**	Date of birth Month / Date / Year	HOSP. / WORK / RD / 2-WK. DV	LA IRA IDV INJ. CL LTR HST COND.
	Last name / Sex 1☐M 2☐F			00☐None / 1☐Wa 2☐Wb / 1☐Yes 2☐No / 00☐None	
				Number / Number	

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

	REFERENCE PERIODS
A1	**2-WEEK PERIOD**
	12-MONTH DATE
	13-MONTH HOSPITAL DATE
A2	**ASK CONDITION LISTS 1,2, and 3.**

G. HEALTH INDICATOR PAGE

1a. During the 2-week period outlined in red on that calendar, has anyone in the family had an injury from an accident or other cause that you have not yet told me about?

☐Yes ☐No *(2)*

b. Who was this? *Mark "Injury" box in person's column.* — **1b.** ☐ Injury

c. What was — — injury? *Enter injury(ies) in person's column.* — **c.** _____ Injury

d. Did anyone have any other injuries during that period?

☐Yes *(Reask 1b, c, and d)* ☐No

Ask for each injury in 1c:

e. As a result of the *(injury in 1c)* **did [— —/anyone] see or talk to a medical doctor or assistant (about — —) or did — — cut down on — — usual activities for more than half of a day?** — **e.** ☐ Yes *(Enter injury in C2, THEN 1e for next injury)* ☐ No *(1e for next injury)*

2. During the past 12 months, {that is, since *(12-month date)* **a year ago} ABOUT how many days did illness or injury keep — — in bed more than half of the day? (Include days while an overnight patient in a hospital.)** — **2.** 000☐None _____ No. of days

3a. During the past 12 months, ABOUT how many times did [— —/anyone] see or talk to a medical doctor or assistant (about — —)? (Do not count doctors seen while an overnight patient in a hospital.) (Include the *(number in 2-WK DV box)* **visit(s) you already told me about.)** — **3a.** 000☐None *(3b)* 000☐Only when overnight patient in hospital *(NP)* _____ No. of visits

b. About how long has it been since [— —/anyone] last saw or talked to a medical doctor or assistant (about — —)? Include doctors seen while a patient in a hospital. — **b.** 1☐Interview week *(Reask 3b)* 2☐Less than 1 yr *(Reask 3a)* 3☐1 yr., less than 2 yrs. 4☐2 yrs., less than 5 yrs. 5☐5 yrs. or more 0☐Never

4. Would you say — — health in general is excellent, very good, good, fair, or poor? — **4.** 1☐Excellent 2☐Very good 3☐Good 4☐Fair 5☐Poor

Mark box if under 18.

5a. About how tall is — — without shoes? — **5a.** ☐ Under 18 *(NP)* _____ Feet _____ Inches

b. About how much does — — weigh without shoes? — **b.** _____ Pounds

FOOTNOTES

	2	3	4	5
	☐ Old age	☐ Old age	☐ Old age	☐ Old age
1.	First name Mid. init. Age Last name Sex 1 ☐ M 2 ☐ F	First name Mid. init. Age Last name Sex 1 ☐ M 2 ☐ F	First name Mid. init. Age Last name Sex 1 ☐ M 2 ☐ F	First name Mid. init. Age Last name Sex 1 ☐ M 2 ☐ F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month | Date | Year	Date of birth Month | Date | Year	Date of birth Month | Date | Year	Date of birth Month | Date | Year
C1	HOSP. 00 ☐ None ___ Number WORK 1 ☐ Wa 2 ☐ Wb RD 1 ☐ Yes 2 ☐ No 2-WK. DV 00 ☐ None ___ Number	HOSP. 00 ☐ None ___ Number WORK 1 ☐ Wa 2 ☐ Wb RD 1 ☐ Yes 2 ☐ No 2-WK. DV 00 ☐ None ___ Number	HOSP. 00 ☐ None ___ Number WORK 1 ☐ Wa 2 ☐ Wb RD 1 ☐ Yes 2 ☐ No 2-WK. DV 00 ☐ None ___ Number	HOSP. 00 ☐ None ___ Number WORK 1 ☐ Wa 2 ☐ Wb RD 1 ☐ Yes 2 ☐ No 2-WK. DV 00 ☐ None ___ Number
C2	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.
	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.
	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.
	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.
	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.
1b.	☐ Injury	☐ Injury	☐ Injury	☐ Injury
c.	___ Injury	___ Injury	___ Injury	___ Injury
e.	☐ Yes *(Enter injury in C2, THEN 1e for next injury)* ☐ No *(1e for next injury)*	☐ Yes *(Enter injury in C2, THEN 1e for next injury)* ☐ No *(1e for next injury)*	☐ Yes *(Enter injury in C2, THEN 1e for next injury)* ☐ No *(1e for next injury)*	☐ Yes *(Enter injury in C2, THEN 1e for next injury)* ☐ No *(1e for next injury)*
2.	000 ☐ None ___ No. of days	000 ☐ None ___ No. of days	000 ☐ None ___ No. of days	000 ☐ None ___ No. of days
3a.	000 ☐ None *(3b)* 000 ☐ Only when overnight patient in hospital } *(NP)* ___ No. of visits	000 ☐ None *(3b)* 000 ☐ Only when overnight patient in hospital } *(NP)* ___ No. of visits	000 ☐ None *(3b)* 000 ☐ Only when overnight patient in hospital } *(NP)* ___ No. of visits	000 ☐ None *(3b)* 000 ☐ Only when overnight patient in hospital } *(NP)* ___ No. of visits
b.	1 ☐ Interview week *(Reask 3b)* 2 ☐ Less than 1 yr. *(Reask 3a)* 3 ☐ 1 yr., less than 2 yrs. 4 ☐ 2 yrs., less than 5 yrs. 5 ☐ 5 yrs. or more 0 ☐ Never	1 ☐ Interview week *(Reask 3b)* 2 ☐ Less than 1 yr. *(Reask 3a)* 3 ☐ 1 yr., less than 2 yrs. 4 ☐ 2 yrs., less than 5 yrs. 5 ☐ 5 yrs. or more 0 ☐ Never	1 ☐ Interview week *(Reask 3b)* 2 ☐ Less than 1 yr. *(Reask 3a)* 3 ☐ 1 yr., less than 2 yrs. 4 ☐ 2 yrs., less than 5 yrs. 5 ☐ 5 yrs. or more 0 ☐ Never	1 ☐ Interview week *(Reask 3b)* 2 ☐ Less than 1 yr. *(Reask 3a)* 3 ☐ 1 yr., less than 2 yrs. 4 ☐ 2 yrs., less than 5 yrs. 5 ☐ 5 yrs. or more 0 ☐ Never
4.	1 ☐ Excellent 4 ☐ Fair 2 ☐ Very good 5 ☐ Poor 3 ☐ Good	1 ☐ Excellent 4 ☐ Fair 2 ☐ Very good 5 ☐ Poor 3 ☐ Good	1 ☐ Excellent 4 ☐ Fair 2 ☐ Very good 5 ☐ Poor 3 ☐ Good	1 ☐ Excellent 4 ☐ Fair 2 ☐ Very good 5 ☐ Poor 3 ☐ Good
5a.	☐ Under 18 *(NP)* ___ Feet ___ Inches	☐ Under 18 *(NP)* ___ Feet ___ Inches	☐ Under 18 *(NP)* ___ Feet ___ Inches	☐ Under 18 *(NP)* ___ Feet ___ Inches
b.	___ Pounds	___ Pounds	___ Pounds	___ Pounds

FOOTNOTES

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE

1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*

☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:

Does — — usually live somewhere else?

	1.	2.	3.
	First name / Mid. init. / Age	Relationship **REFERENCE PERSON**	Date of birth Month / Date / Year
	Last name / Sex 1☐M 2☐F		

C1

HOSP.	WORK	RD	2-WK. DV
00☐ None	1☐ Wa	1☐ Yes	00☐ None
Number	2☐ Wb	2☐ No	Number

C2

LA IRA DV INJ CL LTR HST COND.

LA IRA DV INJ. CL LTR HST COND.

LA IRA DV INJ. CL LTR HST COND.

LA IRA DV INJ. CL LTR HST COND.

LA IRA DV INJ. CL LTR HST COND.

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

A1 REFERENCE PERIODS

2-WEEK PERIOD

12-MONTH DATE

13-MONTH HOSPITAL DATE

A2 ASK CONDITION LISTS 1,2, and 3.

H. CONDITION LISTS

Read to respondent:

Now I am going to read you several lists of medical conditions. Tell me if anyone in the family has each condition I read, even if you have mentioned it before.

1

1a. Does anyone in the family *{read names}* **NOW HAVE —** *If "Yes," ask 1b and 1c.*

b. Who is this?

c. Does anyone else NOW have —

Enter condition and letter in appropriate person's column.

A. PERMANENT stiffness or any deformity of the foot, leg, or back?		E. Any other trouble hearing with one or both ears?	
B. PERMANENT stiffness or any deformity of the fingers, hand, or arm?		F. Tinnitus or ringing in the ears?	
C. Any condition caused by an accident or injury which happened more than three months ago?		G. Blindness in one or both eyes?	
D. Deafness in one or both ears?		H. Cataracts?	
		I. Any other trouble seeing with one or both eyes EVEN when wearing glasses?	

2

2a. Has anyone in the family EVER HAD — *If "Yes," ask 2b and 2c.*

b. Who was this?

c. Has anyone else EVER had —

Enter condition and letter in appropriate person's column.

A. Hardening of the arteries or arteriosclerosis?		D. Hypertension, sometimes called high blood pressure?	
B. Congenital heart disease?		E. Angina pectoris?	
C. Coronary heart disease?		F. A myocardial infarction?	
		G. Any other heart attack?	

3

3a. DURING THE PAST 12 MONTHS, did anyone in the family have — *If "Yes," ask 3b and 3c.*

b. Who was this?

c. DURING THE PAST 12 MONTHS, did anyone else have —

Enter condition and letter in appropriate person's column.

A. Damaged heart valves?		I. FREQUENT constipation?	
B. Tachycardia or rapid heart?		J. Diabetes?	
C. A heart murmur?		K. Migraine?	
D. Any other heart trouble?		L. Bronchitis?	
E. Varicose veins?		M. Asthma?	
F. Hemorrhoids or piles?		N. Hay fever?	
G. Arthritis or any kind of rheumatism?		O. Sinus trouble?	
H. Dermatitis or any other skin trouble?			

FOOTNOTES

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE

1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*
☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:
Does — — usually live somewhere else?

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

A1

REFERENCE PERIODS
2-WEEK PERIOD
12-MONTH DATE
13-MONTH HOSPITAL DATE

A2 ASK CONDITION LISTS 1,2, and 3.

	1.	2.	3.
	First name / Mid. init. / Age	Relationship REFERENCE PERSON	Date of birth Month / Date / Year
	Last name / Sex 1☐M 2☐F		
C1	HOSP. ooo☐None / Number	WORK 1☐Wa 2☐Wb	RD 1☐Yes 2☐No	2-WK. DV ooo☐None / Number
C2	LA / IRA / DV / INJ. / CL / LTR / HSI / COND			

J. HOSPITAL PAGE

HOSPITAL STAY 1

1. *Refer to C1, "HOSP." box.*

1. **PERSON NUMBER** _____

2. **You said earlier that — — was a patient in the hospital since** *(13-month hospital date)* **a year ago. On what date did — — enter the hospital ([the last time/the time before that])?**
Record each entry date in a separate Hospital Stay column.

2. Month / Date / Year 19 ___

3. **How many nights was — — in the hospital?**

3. oooo☐ None *(Next HS)*
_____ Nights

4. **For what condition did — — enter the hospital?**
- *For delivery ask:* **Was this a normal delivery?** *If "No," ask:* **What was the matter?**
- *For newborn ask:* **Was the baby normal at birth?** *If "No," ask:* **What was the matter?**
- *For initial "No condition" ask:* **Why did — — enter the hospital?**
- *For tests, ask:* **What were the results of the tests?** *If no results, ask:* **Why were the tests performed?**

4. 1☐ Normal delivery
2☐ Normal at birth } *(5)*
3☐ No condition
☐ Condition Z
_____

J1 *Refer to questions 2, 3, and 2-week reference period.*

J1
☐ At least one night in 2-week reference period *(Enter condition in C2, THEN 5)*
☐ No nights in 2-week reference period *(5)*

5a. Did — — have any kind of surgery or operation during this stay in the hospital, including bone settings and stitches?

5a. 1☐ Yes 2☐ No *(6)*

b. What was the name of the surgery or operation?
If name of operation not known, describe what was done.

b. (1) _____
(2) _____
(3) _____

c. Was there any other surgery or operation during this stay?

c. ☐ Yes *(Reask 5b and c)* ☐ No

6. What is the name and address of this hospital?

6. Name
Number and street
City or County / State

FOOTNOTES

	2	3	4	5
	☐ Old age	☐ Old age	☐ Old age	☐ Old age
1.	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month Date Year	Date of birth Month Date Year	Date of birth Month Date Year	Date of birth Month Date Year
C1	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number
C2	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.

	HOSPITAL STAY 2	HOSPITAL STAY 3	HOSPITAL STAY 4
1.	PERSON NUMBER _____	PERSON NUMBER _____	PERSON NUMBER _____
2.	Month Date Year 19___	Month Date Year 19___	Month Date Year 19___
3.	0000☐ None *(Next HS)* _____ Nights	0000☐ None *(Next HS)* _____ Nights	0000☐ None *(Next HS)* _____ Nights
4.	1☐ Normal delivery 2☐ Normal at birth 3☐ No condition *(5)* ☐ Condition ↓	1☐ Normal delivery 2☐ Normal at birth 3☐ No condition *(5)* ☐ Condition ↓	1☐ Normal delivery 2☐ Normal at birth 3☐ No condition *(5)* ☐ Condition ↓
J1	☐ At least one night in 2-week reference period *(Enter condition in C2, THEN 5)* ☐ No nights in 2-week reference period *(5)*	☐ At least one night in 2-week reference period *(Enter condition in C2, THEN 5)* ☐ No nights in 2-week reference period *(5)*	☐ At least one night in 2-week reference period *(Enter condition in C2, THEN 5)* ☐ No nights in 2-week reference period *(5)*
5a.	1☐ Yes 2☐ No *(6)*	1☐ Yes 2☐ No *(6)*	1☐ Yes 2☐ No *(6)*
b.	(1) _____ (2) _____ (3) _____	(1) _____ (2) _____ (3) _____	(1) _____ (2) _____ (3) _____
c.	☐ Yes *(Reask 5b and c)* ☐ No	☐ Yes *(Reask 5b and c)* ☐ No	☐ Yes *(Reask 5b and c)* ☐ No
6.	Name Number and street City or County State	Name Number and street City or County State	Name Number and street City or County State

FOOTNOTES

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE 1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here?

☐ Yes *(2)*

☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:

Does — — usually live somewhere else?

	1. First name / Mid. init. / Age	Last name / Sex (1 ☐ M, 2 ☐ F)
	2. Relationship: **REFERENCE PERSON**	
	3. Date of birth: Month / Date / Year	

	HOSP.	WORK	RD	2-WK. DV
C1	00 ☐ None; Number	1 ☐ Wa; 2 ☐ Wb	1 ☐ Yes; 2 ☐ No	00 ☐ None; Number

C2

LA	IRA	DV	INJ.	CLLTR	HSTCOND.

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

REFERENCE PERIODS

A1

2-WEEK PERIOD

12-MONTH DATE

13-MONTH HOSPITAL DATE

A2 **ASK CONDITION LISTS 1,2, and 3.**

CONDITION 1 | PERSON NO. ___

1. Name of condition

Mark "2-wk. ref. pd." box without asking if "DV" or "HS" in C2 as source.

2. When did [— —/anyone] last see or talk to a doctor or assistant about — — *(condition)*?

0 ☐ Interview week *(Reask 2)*
1 ☐ 2-wk. ref. pd.
2 ☐ Over 2 weeks, less than 6 mos.
3 ☐ 6 mos., less than 1 yr.
4 ☐ 1 yr., less than 2 yrs.
5 ☐ 2 yrs., less than 5 yrs.
6 ☐ 5 yrs. or more
7 ☐ Dr. seen, DK when
8 ☐ DK if Dr. seen } *(3b)*
9 ☐ Dr. never seen }

3a. (Earlier you told me about — — *(condition)*) **Did the doctor or assistant call the** *(condition)* **by a more technical or specific name?**

1 ☐ Yes 2 ☐ No 9 ☐ DK

Ask 3b if "Yes" in 3a, otherwise transcribe condition name from item 1 without asking:

b. What did he or she call it? _____ *(Specify)*

1 ☐ Color Blindness *(NC)*
2 ☐ Cancer *(3e)*
3 ☐ Normal pregnancy, normal delivery, vasectomy } *(5)*
4 ☐ Old age *(NC)*
8 ☐ Other *(3c)*

c. What was the cause of — — *(condition in 3b)*? *(Specify)*

_____

Mark box if accident or injury. 0 ☐ Accident/injury *(5)*

d. Did the *(condition in 3b)* **result from an accident or injury?**

1 ☐ Yes *(5)* 2 ☐ No

Ask 3e if the condition name in 3b includes any of the following words:

Ailment	Cancer	Disease	Problem
Anemia	Condition	Disorder	Rupture
Asthma	Cyst	Growth	Trouble
Attack	Defect	Measles	Tumor
Bad			Ulcer

e. What kind of *(condition in 3b)* **is it?** _____ *(Specify)*

Ask 3f only if allergy or stroke in 3b—e:

f. How does the [allergy/stroke] NOW affect — —? *(Specify)*

_____

_____

For Stroke, fill remainder of this condition page for the first present effect. Enter in item C2 and complete a separate condition page for each additional present effect.

Ask 3g if there is an impairment (refer to Card CP2) or any of the following entries in 3b—f:

Abscess	Damage	Palsy
Ache (except head or ear)	Growth	Paralysis
Bleeding (except menstrual)	Hemorrhage	Rupture
Blood clot	Infection	Sore(ness)
Boil	Inflammation	Stiff(ness)
Cancer	Neuralgia	Tumor
Cramps (except menstrual)	Neuritis	Ulcer
Cyst	Pain	Varicose veins
		Weak(ness)

g. What part of the body is affected? _____ *(Specify)*

Show the following detail:

Head	skull, scalp, face
Back/spine/vertebrae	upper, middle, lower
Side	left or right
Ear	inner or outer; left, right, or both
Eye	left, right, or both
Arm	shoulder, upper, elbow, lower or wrist; left, right, or both
Hand	entire hand or fingers only; left, right, or both
Leg	hip, upper, knee, lower, or ankle; left, right, or both
Foot	entire foot, arch, or toes only; left, right, or both

Except for eyes, ears, or internal organs, ask 3h if there are any of the following entries in 3b—f:

Infection Sore Soreness

h. What part of the *(part of body in 3b—g)* **is affected by the [infection/sore/soreness] — the skin, muscle, bone, or some other part?**

(Specify) _____

Ask if there are any of the following entries in 3b—f:

Tumor Cyst Growth

4. Is this [tumor/cyst/growth] malignant or benign?

1 ☐ Malignant 2 ☐ Benign 9 ☐ DK

5

a. When was — — *(condition in 3b/3f)* **first noticed?**

b. When did — — *(name of injury in 3b)*?

1 ☐ 2-wk. ref. pd.
2 ☐ Over 2 weeks to 3 months
3 ☐ Over 3 months to 1 year
4 ☐ Over 1 year to 5 years
5 ☐ Over 5 years

Ask probes as necessary:

(Was it on or since *(first date of 2-week ref. period)* **or was it before that date?)**

(Was it less than 3 months or more than 3 months ago?)

(Was it less than 1 year or more than 1 year ago?)

(Was it less than 5 years or more than 5 years ago?)

	☐ Old age	☐ Old age	☐ Old age	☐ Old age
	2	**3**	**4**	**5**
1.	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year
C1	HOSP. 00☐None / Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None / Number	HOSP. 00☐None / Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None / Number	HOSP. 00☐None / Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None / Number	HOSP. 00☐None / Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None / Number
C2	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)

K1 *Refer to RD and C2.*
1☐ "Yes" in "RD" box AND more than 1 condition in C2 *(6)*
8☐ Other *(K2)*

6a. During the 2 weeks outlined in red on that calendar, did — — *(condition)* cause — — to cut down on the things — — usually does?
☐ Yes ☐ No *(K2)*

b. During that period, how many days did — — cut down for more than half of the day?
00☐None *(K2)* _____ Days

7. During those 2 weeks, how many days did — — stay in bed for more than half of the day because of this condition?
00☐None _____ Days

Ask if "Wa/Wb" box marked in C1:
8. During those 2 weeks, how many days did — — miss more than half of the day from — — job or business because of this condition?
00☐None _____ Days

Ask if age 5–17:
9. During those 2 weeks, how many days did — — miss more than half of the day from school because of this condition?
00☐None _____ Days

K2
☐ Condition has "CL LTR" in C2 as source *(10)*
☐ Condition does not have "CL LTR" in C2 as source *(K4)*

10. About how many days since *(12-month date)* a year ago, has this condition kept — — in bed more than half of the day? (Include days while an overnight patient in a hospital.)
000☐None _____ Days

11. Was — — ever hospitalized for — — *(condition in 3b)*?
1☐Yes 2☐No

K3
☐ Missing extremity or organ *(K4)*
☐ Other *(12)*

12a. Does — — still have this condition?
1☐Yes *(K4)* ☐No

b. Is this condition completely cured or is it under control?
2☐Cured 8☐Other *(Specify)* → _____ *(K4)*
3☐Under control *(K4)*

c. About how long did — — have this condition before it was cured?
000☐Less than 1 month **OR** _____ Number { 1☐Months 2☐Years

d. Was this condition present at any time during the past 12 months?
1☐Yes 2☐No

K4
0☐ Not an accident/injury *(NC)*
1☐ First accident/injury for this person *(14)*
8☐ Other *(13)*

13. Is this *(condition in 3b)* the result of the same accident you already told me about?
☐ Yes *(Record condition page number where accident questions first completed.)* → _____ Page No. *(NC)*
☐ No

14. Where did the accident happen?
1☐ At home (inside house)
2☐ At home (adjacent premises)
3☐ Street and highway (includes roadway and public sidewalk)
4☐ Farm
5☐ Industrial place (includes premises)
6☐ School (includes premises)
7☐ Place of recreation and sports, except at school
8☐ Other *(Specify)* →

Mark box if under 18. ☐ Under 18 *(16)*

15a. Was — — under 18 when the accident happened?
1☐ Yes *(16)* ☐ No

b. Was — — in the Armed Forces when the accident happened?
2☐ Yes *(16)* ☐ No

c. Was — — at work at — — job or business when the accident happened?
3☐ Yes 4☐ No

16a. Was a car, truck, bus, or other motor vehicle involved in the accident in any way?
1☐ Yes 2☐ No *(17)*

b. Was more than one vehicle involved?
1☐ Yes 2☐ No

c. Was [it/either one] moving at the time?
1☐ Yes 2☐ No

17a. At the time of the accident what part of the body was hurt? What kind of injury was it? Anything else?

Part(s) of body *	Kind of injury

Ask if box 3, 4, or 5 marked in Q.5:
b. What part of the body is affected now? How is — — *(part of body)* affected? Is — — affected in any other way?

Part(s) of body *	Present effects **

* Enter part of body in same detail as for 3g.
** If multiple present effects, enter in C2 each one that is not the same as 3b or C2 and complete a separate condition page for it.

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE 1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
– any babies or small children?	☐	☐
– any lodgers, boarders, or persons you employ who live here?	☐	☐
– anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
– anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here?

☐ Yes *(2)*

☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:

Does — — usually live somewhere else?

	1. First name / Mid. init. / Age	Sex
	Last name	1 ☐ M 2 ☐ F
2.	Relationship **REFERENCE PERSON**	
3.	Date of birth Month / Date / Year	

C1	HOSP.	WORK	RD	2-WK. DV
	00 ☐ None	1 ☐ Wa	1 ☐ Yes	00 ☐ None
	Number	2 ☐ Wb	2 ☐ No	Number

C2

LA	IRA	DV	INJ.	CL	LTR	HS	COND.

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

A1 REFERENCE PERIODS

2-WEEK PERIOD

12-MONTH DATE

13-MONTH HOSPITAL DATE

A2 ASK CONDITION LISTS 1,2, and 3.

CONDITION 2 | PERSON NO.____

1. Name of condition

Mark "2-wk. ref. pd." box without asking if "DV" or "HS" in C2 as source.

2. When did [— —/anyone] last see or talk to a doctor or assistant about — — *(condition)*?

0 ☐ Interview week *(Reask 2)*
1 ☐ 2-wk. ref. pd.
2 ☐ Over 2 weeks, less than 6 mos.
3 ☐ 6 mos., less than 1 yr.
4 ☐ 1 yr., less than 2 yrs.
5 ☐ 2 yrs., less than 5 yrs.
6 ☐ 5 yrs. or more
7 ☐ Dr. seen, DK when
8 ☐ DK if Dr. seen } *(3b)*
9 ☐ Dr. never seen }

3a. (Earlier you told me about — — *(condition)*) **Did the doctor or assistant call the** *(condition)* **by a more technical or specific name?**

1 ☐ Yes 2 ☐ No 9 ☐ DK

Ask 3b if "Yes" in 3a, otherwise transcribe condition name from item 1 without asking:

b. What did he or she call it? _____ *Specify*

1 ☐ Color Blindness *(NC)*
2 ☐ Cancer *(3e)*
3 ☐ Normal pregnancy, normal delivery, vasectomy } *(5)*
4 ☐ Old age *(NC)*
8 ☐ Other *(3c)*

c. What was the cause of — — *(condition in 3b)*? *(Specify)*

_____

Mark box if accident or injury. 0 ☐ Accident/injury *(5)*

d. Did the *(condition in 3b)* **result from an accident or injury?**

1 ☐ Yes *(5)* 2 ☐ No

Ask 3e if the condition name in 3b includes any of the following words:

Ailment	Cancer	Disease	Problem
Anemia	Condition	Disorder	Rupture
Asthma	Cyst	Growth	Trouble
Attack	Defect	Measles	Tumor
Bad			Ulcer

e. What kind of *(condition in 3b)* **is it?** _____ *(Specify)*

Ask 3f only if allergy or stroke in 3b—e:

f. How does the [allergy/stroke] NOW affect — —? *(Specify)*

_____

_____

For Stroke, fill remainder of this condition page for the first present effect. Enter in item C2 and complete a separate condition page for each additional present effect.

Ask 3g if there is an impairment (refer to Card CP2) or any of the following entries in 3b—f:

Abscess	Damage	Palsy
Ache (except head or ear)	Growth	Paralysis
Bleeding (except menstrual)	Hemorrhage	Rupture
Blood clot	Infection	Sore(ness)
Boil	Inflammation	Stiff(ness)
Cancer	Neuralgia	Tumor
Cramps (except menstrual)	Neuritis	Ulcer
Cyst	Pain	Varicose veins
		Weak(ness)

g. What part of the body is affected? _____ *Specify*

Show the following detail:

Head ..... skull, scalp, face
Back/spine/vertebrae ..... upper, middle, lower
Side ..... left or right
Ear ..... inner or outer; left, right, or both
Eye ..... left, right, or both
Arm ..... shoulder, upper, elbow, lower or wrist; left, right, or both
Hand ..... entire hand or fingers only; left, right, or both
Leg ..... hip, upper, knee, lower, or ankle; left, right, or both
Foot ..... entire foot, arch, or toes only; left, right, or both

Except for eyes, ears, or internal organs, ask 3h if there are any of the following entries in 3b—f:

Infection Sore Soreness

h. What part of the *(part of body in 3b—g)* **is affected by the [infection/sore/soreness] — the skin, muscle, bone, or some other part?**

(Specify) _____

Ask if there are any of the following entries in 3b—f:

Tumor Cyst Growth

4. Is this [tumor/cyst/growth] malignant or benign?

1 ☐ Malignant 2 ☐ Benign 9 ☐ DK

5 a. When was — — *(condition in 3b/3f)* **first noticed?**

b. When did — *(name of injury in 3b)*?

1 ☐ 2-wk. ref. pd.
2 ☐ Over 2 weeks to 3 months
3 ☐ Over 3 months to 1 year
4 ☐ Over 1 year to 5 years
5 ☐ Over 5 years

Ask probes as necessary:

(Was it on or since *(first date of 2-week ref. period)* **or was it before that date?)**

(Was it less than 3 months or more than 3 months ago?)

(Was it less than 1 year or more than 1 year ago?)

(Was it less than 5 years or more than 5 years ago?)

	2	3	4	5
	☐ Old age	☐ Old age	☐ Old age	☐ Old age
1.	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year
C1	HOSP. 00☐None / Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None / Number	HOSP. 00☐None / Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None / Number	HOSP. 00☐None / Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None / Number	HOSP. 00☐None / Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None / Number
C2	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)

K1 *Refer to RD and C2.*
1☐ "Yes" in "RD" box AND more than 1 condition in C2 *(6)*
8☐ Other *(K2)*

6a. During the 2 weeks outlined in red on that calendar, did — — *(condition)* cause — — to cut down on the things — — usually does?
☐ Yes ☐ No *(K2)*

b. During that period, how many days did — — cut down for more than half of the day?
00☐None *(K2)* _____ Days

7. During those 2 weeks, how many days did — — stay in bed for more than half of the day because of this condition?
00☐None _____ Days

Ask if "Wa/Wb" box marked in C1:
8. During those 2 weeks, how many days did — — miss more than half of the day from — — job or business because of this condition?
00☐None _____ Days

Ask if age 5–17:
9. During those 2 weeks, how many days did — — miss more than half of the day from school because of this condition?
00☐None _____ Days

K2
☐ Condition has "CL LTR" in C2 as source *(10)*
☐ Condition does not have "CL LTR" in C2 as source *(K4)*

10. About how many days since *(12-month date)* a year ago, has this condition kept — — in bed more than half of the day? (Include days while an overnight patient in a hospital.)
000☐None _____ Days

11. Was — — ever hospitalized for — — *(condition in 3b)*?
1☐Yes 2☐No

K3
☐ Missing extremity or organ *(K4)*
☐ Other *(12)*

12a. Does — — still have this condition?
1☐Yes *(K4)* ☐No

b. Is this condition completely cured or is it under control?
2☐Cured 8☐Other *(Specify)* _____
3☐Under control *(K4)* _____ *(K4)*

c. About how long did — — have this condition before it was cured?
000☐Less than 1 month **OR** _____ Number { 1☐Months 2☐Years

d. Was this condition present at any time during the past 12 months?
1☐Yes 2☐No

K4
0☐ Not an accident/injury *(NC)*
1☐ First accident/injury for this person *(14)*
8☐ Other *(13)*

13. Is this *(condition in 3b)* the result of the same accident you already told me about?
☐ Yes *(Record condition page number where accident questions first completed.)* → _____ Page No. *(NC)*
☐ No

14. Where did the accident happen?
1☐ At home (inside house)
2☐ At home (adjacent premises)
3☐ Street and highway (includes roadway and public sidewalk)
4☐ Farm
5☐ Industrial place (includes premises)
6☐ School (includes premises)
7☐ Place of recreation and sports, except at school
8☐ Other *(Specify)* _____

Mark box if under 18. ☐ Under 18 *(16)*

15a. Was — — under 18 when the accident happened?
1☐ Yes *(16)* ☐ No

b. Was — — in the Armed Forces when the accident happened?
2☐ Yes *(16)* ☐ No

c. Was — — at work at — — job or business when the accident happened?
3☐ Yes 4☐ No

16a. Was a car, truck, bus, or other motor vehicle involved in the accident in any way?
1☐ Yes 2☐ No *(17)*

b. Was more than one vehicle involved?
1☐ Yes 2☐ No

c. Was [it/either one] moving at the time?
1☐ Yes 2☐ No

17a. At the time of the accident what part of the body was hurt? What kind of injury was it? Anything else?

Part(s) of body *	Kind of Injury

Ask if box 3, 4, or 5 marked in Q.5:

b. What part of the body is affected now? How is — — *(part of body)* affected? Is — — affected in any other way?

Part(s) of body *	Present effects **

* Enter part of body in same detail as for 3g.
** If multiple present effects, enter in C2 each one that is not the same as 3b or C2 and complete a separate condition page for it.

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE 1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*
☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:
Does — — usually live somewhere else?

	1.	2.	3.	C1	C2
	First name / Last name	Relationship **REFERENCE PERSON**	Date of birth Month / Date / Year	HOSP. / WORK / RD / 2-WK. DV	LA IRA IDV INJ. CL LTR HSP COND
	Mid. init. / Age / Sex 1☐M 2☐F			HOSP.: 00☐None, Number ____ · WORK: 1☐Wa 2☐Wb · RD: 1☐Yes 2☐No · 2-WK. DV: 00☐None, Number ____	

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

A1 REFERENCE PERIODS

- 2-WEEK PERIOD
- 12-MONTH DATE
- 13-MONTH HOSPITAL DATE

A2 ASK CONDITION LISTS 1,2, and 3.

CONDITION 3 — PERSON NO. ____

1. Name of condition

Mark "2-wk. ref. pd." box without asking if "DV" or "HS" in C2 as source.

2. When did [— —/anyone] last see or talk to a doctor or assistant about — — *(condition)*?

0 ☐ Interview week *(Reask 2)*
1 ☐ 2-wk. ref. pd.
2 ☐ Over 2 weeks, less than 6 mos.
3 ☐ 6 mos., less than 1 yr.
4 ☐ 1 yr., less than 2 yrs.
5 ☐ 2 yrs., less than 5 yrs.
6 ☐ 5 yrs. or more
7 ☐ Dr. seen, DK when
8 ☐ DK if Dr. seen } *(3b)*
9 ☐ Dr. never seen }

3a. (Earlier you told me about — — *(condition)*) **Did the doctor or assistant call the** *(condition)* **by a more technical or specific name?**

1 ☐ Yes 2 ☐ No 9 ☐ DK

Ask 3b if "Yes" in 3a, otherwise transcribe condition name from item 1 without asking:

b. What did he or she call it? _____ *(Specify)*

1 ☐ Color Blindness *(NC)*
2 ☐ Cancer *(3e)*
3 ☐ Normal pregnancy, normal delivery, vasectomy } *(5)*
4 ☐ Old age *(NC)*
8 ☐ Other *(3c)*

c. What was the cause of — — *(condition in 3b)*? *(Specify)*

_____

Mark box if accident or injury. 0 ☐ Accident/injury *(5)*

d. Did the *(condition in 3b)* **result from an accident or injury?**

1 ☐ Yes *(5)* 2 ☐ No

Ask 3e if the condition name in 3b includes any of the following words:

Ailment	Cancer	Disease	Problem
Anemia	Condition	Disorder	Rupture
Asthma	Cyst	Growth	Trouble
Attack	Defect	Measles	Tumor
Bad			Ulcer

e. What kind of *(condition in 3b)* **is it?** _____ *(Specify)*

Ask 3f only if allergy or stroke in 3b—e:

f. How does the [allergy/stroke] NOW affect — —? *(Specify)*

_____

_____

For Stroke, fill remainder of this condition page for the first present effect. Enter in item C2 and complete a separate condition page for each additional present effect.

Ask 3g if there is an impairment (refer to Card CP2) or any of the following entries in 3b—f:

Abscess	Damage	Palsy
Ache (except head or ear)	Growth	Paralysis
Bleeding (except menstrual)	Hemorrhage	Rupture
Blood clot	Infection	Sore(ness)
Boil	Inflammation	Stiff(ness)
Cancer	Neuralgia	Tumor
Cramps (except menstrual)	Neuritis	Ulcer
Cyst	Pain	Varicose veins
		Weak(ness)

g. What part of the body is affected? _____ *(Specify)*

Show the following detail:

Head	skull, scalp, face
Back/spine/vertebrae	upper, middle, lower
Side	left or right
Ear	inner or outer; left, right, or both
Eye	left, right, or both
Arm	shoulder, upper, elbow, lower or wrist; left, right, or both
Hand	entire hand or fingers only; left, right, or both
Leg	hip, upper, knee, lower, or ankle; left, right, or both
Foot	entire foot, arch, or toes only; left, right, or both

Except for eyes, ears, or internal organs, ask 3h if there are any of the following entries in 3b—f:

Infection Sore Soreness

h. What part of the *(part of body in 3b—g)* **is affected by the [infection/sore/soreness] — the skin, muscle, bone, or some other part?**

(Specify) _____

Ask if there are any of the following entries in 3b—f:

Tumor Cyst Growth

4. Is this [tumor/cyst/growth] malignant or benign?

1 ☐ Malignant 2 ☐ Benign 9 ☐ DK

5 a. When was — — *(condition in 3b/3f)* **first noticed?**

b. When did — *(name of injury in 3b)*?

1 ☐ 2-wk. ref. pd.
2 ☐ Over 2 weeks to 3 months
3 ☐ Over 3 months to 1 year
4 ☐ Over 1 year to 5 years
5 ☐ Over 5 years

Ask probes as necessary:

(Was it on or since *(first date of 2-week ref. period)* **or was it before that date?)**

(Was it less than 3 months or more than 3 months ago?)

(Was it less than 1 year or more than 1 year ago?)

(Was it less than 5 years or more than 5 years ago?)

	2	3	4	5
	☐ Old age	☐ Old age	☐ Old age	☐ Old age
1.	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F	First name Mid. init. Age Last name Sex 1☐M 2☐F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month Date Year	Date of birth Month Date Year	Date of birth Month Date Year	Date of birth Month Date Year
C1	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number
C2	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.

K1 *Refer to RD and C2.*
1☐ "Yes" in "RD" box AND more than 1 condition in C2 *(6)*
8☐ Other *(K2)*

6a. During the 2 weeks outlined in red on that calendar, did — — *(condition)* cause — — to cut down on the things — — usually does?
☐ Yes ☐ No *(K2)*

b. During that period, how many days did — — cut down for more than half of the day?
00☐None *(K2)* _____ Days

7. During those 2 weeks, how many days did — — stay in bed for more than half of the day because of this condition?
00☐None _____ Days

Ask if "Wa/Wb" box marked in C1:
8. During those 2 weeks, how many days did — — miss more than half of the day from — — job or business because of this condition?
00☐None _____ Days

Ask if age 5—17:
9. During those 2 weeks, how many days did — — miss more than half of the day from school because of this condition?
00☐None _____ Days

K2
☐ Condition has "CL LTR" in C2 as source *(10)*
☐ Condition does not have "CL LTR" in C2 as source *(K4)*

10. About how many days since *(12-month date)* a year ago, has this condition kept — — in bed more than half of the day? (Include days while an overnight patient in a hospital.)
000☐None _____ Days

11. Was — — ever hospitalized for — — *(condition in 3b)*?
1☐Yes 2☐No

K3
☐ Missing extremity or organ *(K4)*
☐ Other *(12)*

12a. Does — — still have this condition?
1☐Yes *(K4)* ☐No

b. Is this condition completely cured or is it under control?
2☐Cured 8☐Other *(Specify)*
3☐Under control *(K4)*
_____ *(K4)*

c. About how long did — — have this condition before it was cured?
000☐Less than 1 month **OR** _____ Number { 1☐Months 2☐Years

d. Was this condition present at any time during the past 12 months?
1☐Yes 2☐No

K4
0☐ Not an accident/injury *(NC)*
1☐ First accident/injury for this person *(14)*
8☐ Other *(13)*

13. Is this *(condition in 3b)* the result of the same accident you already told me about?
☐ Yes *(Record condition page number where accident questions first completed.)* → _____ *(NC)* Page No.
☐ No

14. Where did the accident happen?
1☐ At home (inside house)
2☐ At home (adjacent premises)
3☐ Street and highway (includes roadway and public sidewalk)
4☐ Farm
5☐ Industrial place (includes premises)
6☐ School (includes premises)
7☐ Place of recreation and sports, except at school
8☐ Other *(Specify)*

Mark box if under 18. ☐ Under 18 *(16)*

15a. Was — — under 18 when the accident happened?
1☐ Yes *(16)* ☐ No

b. Was — — in the Armed Forces when the accident happened?
2☐ Yes *(16)* ☐ No

c. Was — — at work at — — job or business when the accident happened?
3☐ Yes 4☐ No

16a. Was a car, truck, bus, or other motor vehicle involved in the accident in any way?
1☐ Yes 2☐ No *(17)*

b. Was more than one vehicle involved?
1☐ Yes 2☐ No

c. Was [it/either one] moving at the time?
1☐ Yes 2☐ No

17a. At the time of the accident what part of the body was hurt? What kind of injury was it? Anything else?

Part(s) of body *	Kind of injury

Ask if box 3, 4, or 5 marked in Q.5:
b. What part of the body is affected now? How is — — *(part of body)* affected? Is — — affected in any other way?

Part(s) of body *	Present effects **

* Enter part of body in same detail as for 3g.
** If multiple present effects, enter in C2 each one that is not the same as 3b or C2 and complete a separate condition page for it.

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE 1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*
☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:
Does —— usually live somewhere else?

	1.	2.	3.
	First name / Last name	Relationship **REFERENCE PERSON**	Date of birth Month / Date / Year
	Mid. init.		
	Age		
	Sex 1☐M 2☐F		

C1

HOSP.	WORK	RD	2-WK. DV
00☐ None	1☐ Wa	1☐ Yes	00☐ None
Number	2☐ Wb	2☐ No	Number

C2

LA	IRA	DV	INJ	CL	LTR	HS	COND

Ask for all persons beginning with column 2:

2. What is —— relationship to *(reference person)*?

3. What is —— date of birth? *(Enter date and age and mark sex.)*

A1 REFERENCE PERIODS

2-WEEK PERIOD

12-MONTH DATE

13-MONTH HOSPITAL DATE

A2 ASK CONDITION LISTS 1,2, and 3.

CONDITION 4 | PERSON NO.____

1. Name of condition

Mark "2-wk. ref. pd." box without asking if "DV" or "HS" in C2 as source.

2. When did [——/anyone] last see or talk to a doctor or assistant about —— (condition)?

0☐ Interview week *(Reask 2)*
1☐ 2-wk. ref. pd.
2☐ Over 2 weeks, less than 6 mos.
3☐ 6 mos., less than 1 yr.
4☐ 1 yr., less than 2 yrs.
5☐ 2 yrs., less than 5 yrs.
6☐ 5 yrs. or more
7☐ Dr. seen, DK when
8☐ DK if Dr. seen } *(3b)*
9☐ Dr. never seen }

3a. (Earlier you told me about —— (condition).) Did the doctor or assistant call the (condition) by a more technical or specific name?

1☐ Yes 2☐ No 9☐ DK

Ask 3b if "Yes" in 3a, otherwise transcribe condition name from item 1 without asking:

b. What did he or she call it? _____ *(Specify)*

1☐ Color Blindness *(NC)*
2☐ Cancer *(3e)*
3☐ Normal pregnancy, normal delivery, vasectomy } *(5)*
4☐ Old age *(NC)*
8☐ Other *(3c)*

c. What was the cause of —— (condition in 3b)? *(Specify)*

Mark box if accident or injury. 0☐ Accident/injury *(5)*

d. Did the (condition in 3b) result from an accident or injury?

1☐ Yes *(5)* 2☐ No

Ask 3e if the condition name in 3b includes any of the following words:

Ailment	Cancer	Disease	Problem
Anemia	Condition	Disorder	Rupture
Asthma	Cyst	Growth	Trouble
Attack	Defect	Measles	Tumor
Bad			Ulcer

e. What kind of (condition in 3b) is it? _____ *(Specify)*

Ask 3f only if allergy or stroke in 3b—e:

f. How does the [allergy/stroke] NOW affect ——? *(Specify)*

For Stroke, fill remainder of this condition page for the first present effect. Enter in item C2 and complete a separate condition page for each additional present effect.

Ask 3g if there is an impairment (refer to Card CP2) or any of the following entries in 3b—f:

Abscess	Damage	Palsy
Ache (except head or ear)	Growth	Paralysis
Bleeding (except menstrual)	Hemorrhage	Rupture
Blood clot	Infection	Sore(ness)
Boil	Inflammation	Stiff(ness)
Cancer	Neuralgia	Tumor
Cramps (except menstrual)	Neuritis	Ulcer
Cyst	Pain	Varicose veins
		Weak(ness)

g. What part of the body is affected? _____ *(Specify)*

Show the following detail:

Head ..... skull, scalp, face
Back/spine/vertebrae ..... upper, middle, lower
Side ..... left or right
Ear ..... inner or outer; left, right, or both
Eye ..... left, right, or both
Arm ..... shoulder, upper, elbow, lower or wrist; left, right, or both
Hand ..... entire hand or fingers only; left, right, or both
Leg ..... hip, upper, knee, lower, or ankle; left, right, or both
Foot ..... entire foot, arch, or toes only; left, right, or both

Except for eyes, ears, or internal organs, ask 3h if there are any of the following entries in 3b—f:

Infection Sore Soreness

h. What part of the (part of body in 3b—g) is affected by the [infection/sore/soreness] — the skin, muscle, bone, or some other part?

(Specify) _____

Ask if there are any of the following entries in 3b—f:

Tumor Cyst Growth

4. Is this [tumor/cyst/growth] malignant or benign?

1☐ Malignant 2☐ Benign 9☐ DK

5a. When was —— (condition in 3b/3f) first noticed?

b. When did —— (name of injury in 3b)?

1☐ 2-wk. ref. pd.
2☐ Over 2 weeks to 3 months
3☐ Over 3 months to 1 year
4☐ Over 1 year to 5 years
5☐ Over 5 years

Ask probes as necessary:
(Was it on or since *(first date of 2-week ref. period)* **or was it before that date?)**
(Was it less than 3 months or more than 3 months ago?)
(Was it less than 1 year or more than 1 year ago?)
(Was it less than 5 years or more than 5 years ago?)

	2	3	4	5
	☐ Old age	☐ Old age	☐ Old age	☐ Old age
1.	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year
C1	HOSP. 00☐None / Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None / Number	HOSP. 00☐None / Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None / Number	HOSP. 00☐None / Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None / Number	HOSP. 00☐None / Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None / Number
C2	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.

K1 *Refer to RD and C2.*
1☐ "Yes" in "RD" box AND more than 1 condition in C2 *(6)*
8☐ Other *(K2)*

6a. During the 2 weeks outlined in red on that calendar, did —— *(condition)* cause —— to cut down on the things —— usually does?
☐ Yes ☐ No *(K2)*

b. During that period, how many days did —— cut down for more than half of the day?
00☐None *(K2)* _____ Days

7. During those 2 weeks, how many days did —— stay in bed for more than half of the day because of this condition?
00☐None _____ Days

Ask if "Wa/Wb" box marked in C1:
8. During those 2 weeks, how many days did —— miss more than half of the day from —— job or business because of this condition?
00☐None _____ Days

Ask if age 5–17:
9. During those 2 weeks, how many days did —— miss more than half of the day from school because of this condition?
00☐None _____ Days

K2
☐ Condition has "CL LTR" in C2 as source *(10)*
☐ Condition does not have "CL LTR" in C2 as source *(K4)*

10. About how many days since *(12-month date)* a year ago, has this condition kept —— in bed more than half of the day? (Include days while an overnight patient in a hospital.)
000☐None _____ Days

11. Was —— ever hospitalized for —— *(condition in 3b)*?
1☐Yes 2☐No

K3
☐ Missing extremity or organ *(K4)*
☐ Other *(12)*

12a. Does —— still have this condition?
1☐Yes *(K4)* ☐No

b. Is this condition completely cured or is it under control?
2☐Cured 8☐Other *(Specify)*
3☐Under control *(K4)* _____ *(K4)*

c. About how long did —— have this condition before it was cured?
000☐Less than 1 month **OR** _____ Number { 1☐Months 2☐Years

d. Was this condition present at any time during the past 12 months?
1☐Yes 2☐No

K4
0☐ Not an accident/injury *(NC)*
1☐ First accident/injury for this person *(14)*
8☐ Other *(13)*

13. Is this *(condition in 3b)* the result of the same accident you already told me about?
☐ Yes *(Record condition page number where accident questions first completed.)* → _____ *(NC)* Page No.
☐ No

14. Where did the accident happen?
1☐ At home (inside house)
2☐ At home (adjacent premises)
3☐ Street and highway (includes roadway and public sidewalk)
4☐ Farm
5☐ Industrial place (includes premises)
6☐ School (includes premises)
7☐ Place of recreation and sports, except at school
8☐ Other *(Specify)*

Mark box if under 18. ☐ Under 18 *(16)*

15a. Was —— under 18 when the accident happened?
1☐ Yes *(16)* ☐ No

b. Was —— in the Armed Forces when the accident happened?
2☐ Yes *(16)* ☐ No

c. Was —— at work at —— job or business when the accident happened?
3☐ Yes 4☐ No

16a. Was a car, truck, bus, or other motor vehicle involved in the accident in any way?
1☐ Yes 2☐ No *(17)*

b. Was more than one vehicle involved?
1☐ Yes 2☐ No

c. Was [it/either one] moving at the time?
1☐ Yes 2☐ No

17a. At the time of the accident what part of the body was hurt? What kind of injury was it? Anything else?

Part(s) of body *	Kind of injury

Ask if box 3, 4, or 5 marked in Q.5:

b. What part of the body is affected now? How is —— *(part of body)* affected? Is —— affected in any other way?

Part(s) of body *	Present effects **

* Enter part of body in same detail as for 3g.
** If multiple present effects, enter in C2 each one that is not the same as 3b or C2 and complete a separate condition page for it.

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE 1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here?

☐ Yes *(2)*

☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:

Does — — usually live somewhere else?

	1. First name	Mid. init.	Age
	Last name		Sex 1☐M 2☐F
	2. Relationship **REFERENCE PERSON**		
	3. Date of birth Month	Date	Year

C1	HOSP.	WORK	RD	2-WK. DV
	00☐ None	1☐ Wa	1☐ Yes	00☐ None
	Number	2☐ Wb	2☐ No	Number

C2

LA	IRA	DV	INJ.	CL	LTR	HS	COND.

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

A1 REFERENCE PERIODS

2-WEEK PERIOD

12-MONTH DATE

13-MONTH HOSPITAL DATE

A2 ASK CONDITION LISTS 1,2, and 3.

CONDITION 5 | PERSON NO.____

1. Name of condition

Mark "2-wk. ref. pd." box without asking if "DV" or "HS" in C2 as source.

2. When did [— —/anyone] last see or talk to a doctor or assistant about — — *(condition)*?

0☐ Interview week *(Reask 2)*
1☐ 2-wk. ref. pd.
2☐ Over 2 weeks, less than 6 mos.
3☐ 6 mos., less than 1 yr.
4☐ 1 yr., less than 2 yrs.
5☐ 2 yrs., less than 5 yrs.
6☐ 5 yrs. or more
7☐ Dr. seen, DK when
8☐ DK if Dr. seen } *(3b)*
9☐ Dr. never seen }

3a. (Earlier you told me about — — *(condition)*.**) Did the doctor or assistant call the** *(condition)* **by a more technical or specific name?**

1☐ Yes 2☐ No 9☐ DK

Ask 3b if "Yes" in 3a, otherwise transcribe condition name from item 1 without asking:

b. What did he or she call it? _____ *(Specify)*

1☐ Color Blindness *(NC)*
2☐ Cancer *(3e)*
3☐ Normal pregnancy, normal delivery, vasectomy } *(5)*
4☐ Old age *(NC)*
8☐ Other *(3c)*

c. What was the cause of — — *(condition in 3b)*? *(Specify)*

_____

Mark box if accident or injury. 0☐ Accident/injury *(5)*

d. Did the *(condition in 3b)* **result from an accident or injury?**

1☐ Yes *(5)* 2☐ No

Ask 3e if the condition name in 3b includes any of the following words:

Ailment	Cancer	Disease	Problem
Anemia	Condition	Disorder	Rupture
Asthma	Cyst	Growth	Trouble
Attack	Defect	Measles	Tumor
Bad			Ulcer

e. What kind of *(condition in 3b)* **is it?** _____ *(Specify)*

Ask 3f only if allergy or stroke in 3b—e:

f. How does the [allergy/stroke] NOW affect — —? *(Specify)*

_____

_____

For Stroke, fill remainder of this condition page for the first present effect. Enter in item C2 and complete a separate condition page for each additional present effect.

Ask 3g if there is an impairment (refer to Card CP2) or any of the following entries in 3b—f:

Abscess	Damage	Palsy
Ache (except head or ear)	Growth	Paralysis
Bleeding (except menstrual)	Hemorrhage	Rupture
Blood clot	Infection	Sore(ness)
Boil	Inflammation	Stiff(ness)
Cancer	Neuralgia	Tumor
Cramps (except menstrual)	Neuritis	Ulcer
Cyst	Pain	Varicose veins
		Weak(ness)

g. What part of the body is affected? _____ *(Specify)*

Show the following detail:

Head ..... skull, scalp, face
Back/spine/vertebrae ..... upper, middle, lower
Side ..... left or right
Ear ..... inner or outer; left, right, or both
Eye ..... left, right, or both
Arm ..... shoulder, upper, elbow, lower or wrist; left, right, or both
Hand ..... entire hand or fingers only; left, right, or both
Leg ..... hip, upper, knee, lower, or ankle; left, right, or both
Foot ..... entire foot, arch, or toes only; left, right, or both

Except for eyes, ears, or internal organs, ask 3h if there are any of the following entries in 3b—f:

Infection Sore Soreness

h. What part of the *(part of body in 3b—g)* **is affected by the [infection/sore/soreness] — the skin, muscle, bone, or some other part?**

(Specify) _____

Ask if there are any of the following entries in 3b—f:

Tumor Cyst Growth

4. Is this [tumor/cyst/growth] malignant or benign?

1☐ Malignant 2☐ Benign 9☐ DK

5

a. When was — — *(condition in 3b/3f)* **first noticed?**

b. When did — — *(name of injury in 3b)*?

1☐ 2-wk. ref. pd.
2☐ Over 2 weeks to 3 months
3☐ Over 3 months to 1 year
4☐ Over 1 year to 5 years
5☐ Over 5 years

Ask probes as necessary:

(Was it on or since *(first date of 2-week ref. period)* **or was it before that date?)**

(Was it less than 3 months or more than 3 months ago?)

(Was it less than 1 year or more than 1 year ago?)

(Was it less than 5 years or more than 5 years ago?)

2	3	4	5
☐ Old age	☐ Old age	☐ Old age	☐ Old age
1. First name / Mid. init. / Age; Last name; Sex 1☐M 2☐F	1. First name / Mid. init. / Age; Last name; Sex 1☐M 2☐F	1. First name / Mid. init. / Age; Last name; Sex 1☐M 2☐F	1. First name / Mid. init. / Age; Last name; Sex 1☐M 2☐F
2. Relationship	2. Relationship	2. Relationship	2. Relationship
3. Date of birth Month / Date / Year	3. Date of birth Month / Date / Year	3. Date of birth Month / Date / Year	3. Date of birth Month / Date / Year
C1: HOSP. 00☐None ____ Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None ____ Number	C1: HOSP. 00☐None ____ Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None ____ Number	C1: HOSP. 00☐None ____ Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None ____ Number	C1: HOSP. 00☐None ____ Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None ____ Number
C2: LA RA DV INJ. CL LTR HS COND. (5 rows)	C2: LA RA DV INJ. CL LTR HS COND. (5 rows)	C2: LA RA DV INJ. CL LTR HS COND. (5 rows)	C2: LA RA DV INJ. CL LTR HS COND. (5 rows)

K1 *Refer to RD and C2.*
1☐ "Yes" in "RD" box AND more than 1 condition in C2 *(6)*
8☐ Other *(K2)*

6a. During the 2 weeks outlined in red on that calendar, did — — *(condition)* cause — — to cut down on the things — — usually does?
☐ Yes ☐ No *(K2)*

b. During that period, how many days did — — cut down for more than half of the day?
00☐None *(K2)* _____ Days

7. During those 2 weeks, how many days did — — stay in bed for more than half of the day because of this condition?
00☐None _____ Days

Ask if "Wa/Wb" box marked in C1:
8. During those 2 weeks, how many days did — — miss more than half of the day from — — job or business because of this condition?
00☐None _____ Days

Ask if age 5—17:
9. During those 2 weeks, how many days did — — miss more than half of the day from school because of this condition?
00☐None _____ Days

K2
☐ Condition has "CL LTR" in C2 as source *(10)*
☐ Condition does not have "CL LTR" in C2 as source *(K4)*

10. About how many days since *(12-month date)* a year ago, has this condition kept — — in bed more than half of the day? (Include days while an overnight patient in a hospital.)
000☐None _____ Days

11. Was — — ever hospitalized for — — *(condition in 3b)*?
1☐Yes 2☐No

K3
☐ Missing extremity or organ *(K4)*
☐ Other *(12)*

12a. Does — — still have this condition?
1☐Yes *(K4)* ☐No

b. Is this condition completely cured or is it under control?
2☐Cured 8☐Other *(Specify)* _____
3☐Under control *(K4)* _____ *(K4)*

c. About how long did — — have this condition before it was cured?
000☐Less than 1 month **OR** _____ Number { 1☐Months 2☐Years

d. Was this condition present at any time during the past 12 months?
1☐Yes 2☐No

K4
0☐ Not an accident/injury *(NC)*
1☐ First accident/injury for this person *(14)*
8☐ Other *(13)*

13. Is this *(condition in 3b)* the result of the same accident you already told me about?
☐ Yes *(Record condition page number where accident questions first completed.)* → _____ Page No. *(NC)*
☐ No

14. Where did the accident happen?
1☐ At home (inside house)
2☐ At home (adjacent premises)
3☐ Street and highway (includes roadway and public sidewalk)
4☐ Farm
5☐ Industrial place (includes premises)
6☐ School (includes premises)
7☐ Place of recreation and sports, except at school
8☐ Other *(Specify)* _____

Mark box if under 18. ☐ Under 18 *(16)*

15a. Was — — under 18 when the accident happened?
1☐ Yes *(16)* ☐ No

b. Was — — in the Armed Forces when the accident happened?
2☐ Yes *(16)* ☐ No

c. Was — — at work at — — job or business when the accident happened?
3☐ Yes 4☐ No

16a. Was a car, truck, bus, or other motor vehicle involved in the accident in any way?
1☐ Yes 2☐ No *(17)*

b. Was more than one vehicle involved?
1☐ Yes 2☐ No

c. Was [it/either one] moving at the time?
1☐ Yes 2☐ No

17a. At the time of the accident what part of the body was hurt? What kind of injury was it? Anything else?

Part(s) of body *	Kind of injury

Ask if box 3, 4, or 5 marked in Q.5:

b. What part of the body is affected now? How is — — *(part of body)* affected? Is — — affected in any other way?

Part(s) of body *	Present effects **

* Enter part of body in same detail as for 3g.
** If multiple present effects, enter in C2 each one that is not the same as 3b or C2 and complete a separate condition page for it.

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE 1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*
☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:
Does — — usually live somewhere else?

	1.	2.	3.
	First name / Last name	Relationship **REFERENCE PERSON**	Date of birth Month / Date / Year
	Mid. init.		
	Age		
	Sex 1☐M 2☐F		

C1	HOSP.	WORK	RD	2-WK. DV
	00☐ None	1☐ Wa	1☐ Yes	00☐ None
	Number	2☐ Wb	2☐ No	Number

C2

LA	IRA	DV	INJ.	CL	LTR	HS	COND.

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

REFERENCE PERIODS

A1
2-WEEK PERIOD
12-MONTH DATE
13-MONTH HOSPITAL DATE

A2 **ASK CONDITION LISTS 1,2, and 3.**

CONDITION 6 — PERSON NO.____

1. Name of condition

Mark "2-wk. ref. pd." box without asking if "DV" or "HS" in C2 as source.

2. When did [——/anyone] last see or talk to a doctor or assistant about — — *(condition)*?

0☐ Interview week *(Reask 2)*
1☐ 2-wk. ref. pd.
2☐ Over 2 weeks, less than 6 mos.
3☐ 6 mos., less than 1 yr.
4☐ 1 yr., less than 2 yrs.
5☐ 2 yrs., less than 5 yrs.
6☐ 5 yrs. or more
7☐ Dr. seen, DK when
8☐ DK if Dr. seen
9☐ Dr. never seen
} *(3b)*

3a. (Earlier you told me about — — *(condition)*) **Did the doctor or assistant call the** *(condition)* **by a more technical or specific name?**

1☐ Yes 2☐ No 9☐ DK

Ask 3b if "Yes" in 3a, otherwise transcribe condition name from item 1 without asking:

b. What did he or she call it? _____ *(Specify)*

1☐ Color Blindness *(NC)*
3☐ Normal pregnancy, normal delivery, vasectomy } *(5)*
2☐ Cancer *(3e)*
4☐ Old age *(NC)*
8☐ Other *(3c)*

c. What was the cause of — — *(condition in 3b)*? *(Specify)*

_____

Mark box if accident or injury. 0☐ Accident/injury *(5)*

d. Did the *(condition in 3b)* **result from an accident or injury?**

1☐ Yes *(5)* 2☐ No

Ask 3e if the condition name in 3b includes any of the following words:

Ailment	Cancer	Disease	Problem
Anemia	Condition	Disorder	Rupture
Asthma	Cyst	Growth	Trouble
Attack	Defect	Measles	Tumor
Bad			Ulcer

e. What kind of *(condition in 3b)* **is it?** _____ *(Specify)*

Ask 3f only if allergy or stroke in 3b—e:

f. How does the [allergy/stroke] NOW affect — —? *(Specify)*

_____

_____

For Stroke, fill remainder of this condition page for the first present effect. Enter in item C2 and complete a separate condition page for each additional present effect.

Ask 3g if there is an impairment (refer to Card CP2) or any of the following entries in 3b—f:

Abscess	Damage	Palsy
Ache (except head or ear)	Growth	Paralysis
Bleeding (except menstrual)	Hemorrhage	Rupture
Blood clot	Infection	Sore(ness)
Boil	Inflammation	Stiff(ness)
Cancer	Neuralgia	Tumor
Cramps (except menstrual)	Neuritis	Ulcer
Cyst	Pain	Varicose veins
		Weak(ness)

g. What part of the body is affected? _____ *(Specify)*

Show the following detail:

Head	skull, scalp, face
Back/spine/vertebrae	upper, middle, lower
Side	left or right
Ear	inner or outer; left, right, or both
Eye	left, right, or both
Arm	shoulder, upper, elbow, lower or wrist; left, right, or both
Hand	entire hand or fingers only; left, right, or both
Leg	hip, upper, knee, lower, or ankle; left, right, or both
Foot	entire foot, arch, or toes only; left, right, or both

Except for eyes, ears, or internal organs, ask 3h if there are any of the following entries in 3b—f:

Infection Sore Soreness

h. What part of the *(part of body in 3b—g)* **is affected by the [infection/sore/soreness] — the skin, muscle, bone, or some other part?**

(Specify) _____

Ask if there are any of the following entries in 3b—f:

Tumor Cyst Growth

4. Is this [tumor/cyst/growth] malignant or benign?

1☐ Malignant 2☐ Benign 9☐ DK

5
a. When was — — *(condition in 3b/3f)* **first noticed?**
b. When did — *(name of injury in 3b)*?

1☐ 2-wk. ref. pd.
2☐ Over 2 weeks to 3 months
3☐ Over 3 months to 1 year
4☐ Over 1 year to 5 years
5☐ Over 5 years

Ask probes as necessary:
(Was it on or since *(first date of 2-week ref. period)*
or was it before that date?)
(Was it less than 3 months or more than 3 months ago?)
(Was it less than 1 year or more than 1 year ago?)
(Was it less than 5 years or more than 5 years ago?)

	☐ Old age	☐ Old age	☐ Old age	☐ Old age
	2	**3**	**4**	**5**
1.	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F	First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year
C1	HOSP. 00☐None Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None Number	HOSP. 00☐None Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None Number	HOSP. 00☐None Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None Number	HOSP. 00☐None Number; WORK 1☐Wa 2☐Wb; RD 1☐Yes 2☐No; 2-WK. DV 00☐None Number
C2	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)

K1 *Refer to RD and C2.*
1☐ "Yes" in "RD" box AND more than 1 condition in C2 *(6)*
8☐ Other *(K2)*

6a. During the 2 weeks outlined in red on that calendar, did — — *(condition)* cause — — to cut down on the things — — usually does?
☐ Yes ☐ No *(K2)*

b. During that period, how many days did — — cut down for more than half of the day?
00☐None *(K2)* _____ Days

7. During those 2 weeks, how many days did — — stay in bed for more than half of the day because of this condition?
00☐None _____ Days

Ask if "Wa/Wb" box marked in C1:
8. During those 2 weeks, how many days did — — miss more than half of the day from — — job or business because of this condition?
00☐None _____ Days

Ask if age 5—17:
9. During those 2 weeks, how many days did — — miss more than half of the day from school because of this condition?
00☐None _____ Days

K2 ☐ Condition has "CL LTR" in C2 as source *(10)*
☐ Condition does not have "CL LTR" in C2 as source *(K4)*

10. About how many days since *(12-month date)* a year ago, has this condition kept — — in bed more than half of the day? (Include days while an overnight patient in a hospital.)
000☐None _____ Days

11. Was — — ever hospitalized for — — *(condition in 3b)*?
1☐Yes 2☐No

K3 ☐ Missing extremity or organ *(K4)*
☐ Other *(12)*

12a. Does — — still have this condition?
1☐Yes *(K4)* ☐No

b. Is this condition completely cured or is it under control?
2☐Cured 8☐Other *(Specify)* _____
3☐Under control *(K4)* _____ *(K4)*

c. About how long did — — have this condition before it was cured?
000☐Less than 1 month **OR** _____ Number { 1☐Months 2☐Years

d. Was this condition present at any time during the past 12 months?
1☐Yes 2☐No

K4 0☐ Not an accident/injury *(NC)*
1☐ First accident/injury for this person *(14)*
8☐ Other *(13)*

13. Is this *(condition in 3b)* the result of the same accident you already told me about?
☐ Yes *(Record condition page number where accident questions first completed.)* → _____ Page No. *(NC)*
☐ No

14. Where did the accident happen?
1☐ At home (inside house)
2☐ At home (adjacent premises)
3☐ Street and highway (includes roadway and public sidewalk)
4☐ Farm
5☐ Industrial place (includes premises)
6☐ School (includes premises)
7☐ Place of recreation and sports, except at school
8☐ Other *(Specify)* _____

Mark box if under 18. ☐ Under 18 *(16)*

15a. Was — — under 18 when the accident happened?
1☐ Yes *(16)* ☐ No

b. Was — — in the Armed Forces when the accident happened?
2☐ Yes *(16)* ☐ No

c. Was — — at work at — — job or business when the accident happened?
3☐ Yes 4☐ No

16a. Was a car, truck, bus, or other motor vehicle involved in the accident in any way?
1☐ Yes 2☐ No *(17)*

b. Was more than one vehicle involved?
1☐ Yes 2☐ No

c. Was [it/either one] moving at the time?
1☐ Yes 2☐ No

17a. At the time of the accident what part of the body was hurt? What kind of injury was it? Anything else?

Part(s) of body *	Kind of injury

Ask if box 3, 4, or 5 marked in Q.5:

b. What part of the body is affected now? How is — — *(part of body)* affected? Is — — affected in any other way?

Part(s) of body *	Present effects **

* Enter part of body in same detail as for 3g.
** If multiple present effects, enter in C2 each one that is not the same as 3b or C2 and complete a separate condition page for it.

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE 1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*
☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:
Does — — usually live somewhere else?

	1. First name / Mid. init. / Age	Sex 1☐M 2☐F
	Last name	
2.	Relationship **REFERENCE PERSON**	
3.	Date of birth Month / Date / Year	

C1	HOSP.	WORK	RD	2-WK. DV
	00☐ None	1☐ Wa	1☐ Yes	00☐ None
	Number	2☐ Wb	2☐ No	Number

C2

LA	IRA	DV	INJ.	CLLTR	HS	COND

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

REFERENCE PERIODS

A1
- **2-WEEK PERIOD**
- **12-MONTH DATE**
- **13-MONTH HOSPITAL DATE**

A2 **ASK CONDITION LISTS 1,2, and 3.**

CONDITION 7 | PERSON NO.____

1. Name of condition

Mark "2-wk. ref. pd." box without asking if "DV" or "HS" in C2 as source.

2. When did [— —/anyone] last see or talk to a doctor or assistant about — — *(condition)*?

0☐ Interview week *(Reask 2)*
1☐ 2-wk. ref. pd.
2☐ Over 2 weeks, less than 6 mos.
3☐ 6 mos., less than 1 yr.
4☐ 1 yr., less than 2 yrs.
5☐ 2 yrs., less than 5 yrs.
6☐ 5 yrs. or more
7☐ Dr. seen, DK when
8☐ DK if Dr. seen } *(3b)*
9☐ Dr. never seen }

3a. (Earlier you told me about — — *(condition)*) **Did the doctor or assistant call the** *(condition)* **by a more technical or specific name?**

1☐ Yes 2☐ No 9☐ DK

Ask 3b if "Yes" in 3a, otherwise transcribe condition name from item 1 without asking:

b. What did he or she call it? _____ *(Specify)*

1☐ Color Blindness *(NC)*
2☐ Cancer *(3e)*
3☐ Normal pregnancy, normal delivery, vasectomy } *(5)*
4☐ Old age *(NC)*
8☐ Other *(3c)*

c. What was the cause of — — *(condition in 3b)*? *(Specify)*

_____

Mark box if accident or injury. 0☐ Accident/injury *(5)*

d. Did the *(condition in 3b)* **result from an accident or injury?**

1☐ Yes *(5)* 2☐ No

Ask 3e if the condition name in 3b includes any of the following words:

Ailment	Cancer	Disease	Problem
Anemia	Condition	Disorder	Rupture
Asthma	Cyst	Growth	Trouble
Attack	Defect	Measles	Tumor
Bad			Ulcer

e. What kind of *(condition in 3b)* **is it?** _____ *(Specify)*

Ask 3f only if allergy or stroke in 3b—e:

f. How does the [allergy/stroke] NOW affect — —? *(Specify)*

_____

_____

For Stroke, fill remainder of this condition page for the first present effect. Enter in item C2 and complete a separate condition page for each additional present effect.

Ask 3g if there is an impairment (refer to Card CP2) or any of the following entries in 3b—f:

Abscess	Damage	Palsy
Ache (except head or ear)	Growth	Paralysis
Bleeding (except menstrual)	Hemorrhage	Rupture
Blood clot	Infection	Sore(ness)
Boil	Inflammation	Stiff(ness)
Cancer	Neuralgia	Tumor
Cramps (except menstrual)	Neuritis	Ulcer
Cyst	Pain	Varicose veins
		Weak(ness)

g. What part of the body is affected? _____ *(Specify)*

Show the following detail:

Head	skull, scalp, face
Back/spine/vertebrae	upper, middle, lower
Side	left or right
Ear	inner or outer; left, right, or both
Eye	left, right, or both
Arm	shoulder, upper, elbow, lower or wrist; left, right, or both
Hand	entire hand or fingers only; left, right, or both
Leg	hip, upper, knee, lower, or ankle; left, right, or both
Foot	entire foot, arch, or toes only; left, right, or both

Except for eyes, ears, or internal organs, ask 3h if there are any of the following entries in 3b—f:

Infection Sore Soreness

h. What part of the *(part of body in 3b—g)* **is affected by the [infection/sore/soreness] — the skin, muscle, bone, or some other part?**

(Specify) _____

Ask if there are any of the following entries in 3b—f:

Tumor Cyst Growth

4. Is this [tumor/cyst/growth] malignant or benign?

1☐ Malignant 2☐ Benign 9☐ DK

5
a. When was — — *(condition in 3b/3f)* **first noticed?**
b. When did — *(name of injury in 3b)*?

1☐ 2-wk. ref. pd.
2☐ Over 2 weeks to 3 months
3☐ Over 3 months to 1 year
4☐ Over 1 year to 5 years
5☐ Over 5 years

Ask probes as necessary:
(Was it on or since *(first date of 2-week ref. period)* **or was it before that date?)**
(Was it less than 3 months or more than 3 months ago?)
(Was it less than 1 year or more than 1 year ago?)
(Was it less than 5 years or more than 5 years ago?)

	2	3	4	5
	☐ Old age	☐ Old age	☐ Old age	☐ Old age
1.	First name Mid. init. Age	First name Mid. init. Age	First name Mid. init. Age	First name Mid. init. Age
	Last name Sex 1☐M 2☐F	Last name Sex 1☐M 2☐F	Last name Sex 1☐M 2☐F	Last name Sex 1☐M 2☐F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month Date Year	Date of birth Month Date Year	Date of birth Month Date Year	Date of birth Month Date Year
C1	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number	HOSP. 00☐None Number WORK 1☐Wa 2☐Wb RD 1☐Yes 2☐No 2-WK. DV 00☐None Number
C2	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.	LA RA DV INJ. CL LTR HS COND.

K1 *Refer to RD and C2.*
1☐ "Yes" in "RD" box AND more than 1 condition in C2 *(6)*
8☐ Other *(K2)*

6a. During the 2 weeks outlined in red on that calendar, did — — (condition) cause — — to cut down on the things — — usually does?
☐ Yes ☐ No *(K2)*

b. During that period, how many days did — — cut down for more than half of the day?
00☐None *(K2)* _____ Days

7. During those 2 weeks, how many days did — — stay in bed for more than half of the day because of this condition?
00☐None _____ Days

Ask if "Wa/Wb" box marked in C1:
8. During those 2 weeks, how many days did — — miss more than half of the day from — — job or business because of this condition?
00☐None _____ Days

Ask if age 5—17:
9. During those 2 weeks, how many days did — — miss more than half of the day from school because of this condition?
00☐None _____ Days

K2
☐ Condition has "CL LTR" in C2 as source *(10)*
☐ Condition does not have "CL LTR" in C2 as source *(K4)*

10. About how many days since *(12-month date)* a year ago, has this condition kept — — in bed more than half of the day? (Include days while an overnight patient in a hospital.)
000☐None _____ Days

11. Was — — ever hospitalized for — — *(condition in 3b)*?
1☐Yes 2☐No

K3
☐ Missing extremity or organ *(K4)*
☐ Other *(12)*

12a. Does — — still have this condition?
1☐Yes *(K4)* ☐No

b. Is this condition completely cured or is it under control?
2☐Cured 8☐Other *(Specify)* ✍
3☐Under control *(K4)* _____ *(K4)*

c. About how long did — — have this condition before it was cured?
000☐Less than 1 month **OR** _____ Number { 1☐Months 2☐Years

d. Was this condition present at any time during the past 12 months?
1☐Yes 2☐No

K4
0☐ Not an accident/injury *(NC)*
1☐ First accident/injury for this person *(14)*
8☐ Other *(13)*

13. Is this *(condition in 3b)* the result of the same accident you already told me about?
☐ Yes *(Record condition page number where accident questions first completed.)* → _____ *(NC)* Page No.
☐ No

14. Where did the accident happen?
1☐ At home (inside house)
2☐ At home (adjacent premises)
3☐ Street and highway (includes roadway and public sidewalk)
4☐ Farm
5☐ Industrial place (includes premises)
6☐ School (includes premises)
7☐ Place of recreation and sports, except at school
8☐ Other *(Specify)* ✍

Mark box if under 18. ☐ Under 18 *(16)*

15a. Was — — under 18 when the accident happened?
1☐ Yes *(16)* ☐ No

b. Was — — in the Armed Forces when the accident happened?
2☐ Yes *(16)* ☐ No

c. Was — — at work at — — job or business when the accident happened?
3☐ Yes 4☐ No

16a. Was a car, truck, bus, or other motor vehicle involved in the accident in any way?
1☐ Yes 2☐ No *(17)*

b. Was more than one vehicle involved?
1☐ Yes 2☐ No

c. Was [it/either one] moving at the time?
1☐ Yes 2☐ No

17a. At the time of the accident what part of the body was hurt? What kind of injury was it? Anything else?

Part(s) of body *	Kind of injury

Ask if box 3, 4, or 5 marked in Q.5:

b. What part of the body is affected now? How is — — *(part of body)* affected? Is — — affected in any other way?

Part(s) of body *	Present effects **

* Enter part of body in same detail as for 3g.
** If multiple present effects, enter in C2 each one that is not the same as 3b or C2 and complete a separate condition page for it.

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE 1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)* ☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:

Does — — usually live somewhere else?

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

	REFERENCE PERIODS
A1	**2-WEEK PERIOD**
	12-MONTH DATE
	13-MONTH HOSPITAL DATE
A2	**ASK CONDITION LISTS 1,2, and 3.**

	1	2	3	4	5	6	7
1. First name / Mid. init. / Age; Last name / Sex 1☐M 2☐F							
2. Relationship REFERENCE PERSON							
3. Date of birth Month / Date / Year							
C1 HOSP. (00☐None, Number)							
WORK (1☐Wa 2☐Wb)							
RD (1☐Yes 2☐No)							
2-WK. DV (00☐None, Number)							
C2 LA IRA DV INJ. CL LTR HS COND							

L. DEMOGRAPHIC BACKGROUND PAGE

L1 *Refer to age.*

	L1
	☐ Under 5 *(NP)* ☐ 5—17 *(2)* ☐ 18 and over *(1)*

1a. Did — — EVER serve on active duty in the Armed Forces of the United States?

b. When did — — serve?

Mark box in descending order of priority. Thus, if person served in Vietnam and in Korea mark VN.

Vietnam Era (Aug. '64 to April '75) . . . . . VN
Korean War (June '50 to Jan. '55) . . . . . KW
World War II (Sept. '40 to July '47) . . . . . WWII
World War I (April '17 to Nov. '18) . . . . . WWI
Post Vietnam (May '75 to present) . . . . . PVN
Other Service (all other periods) . . . . . OS

c. Was — — EVER an active member of a National Guard or military reserve unit?

d. Was ALL of — — active duty service related to National Guard or military reserve training?

	1	2	3	4	5	6	7	8	9
1a.	1☐Yes 2☐No *(2)*								
b.	1☐VN 2☐KW 3☐WWII 4☐WWI				5☐PVN			8☐OS	9☐DK
c.	☐Yes	2☐No *(2)*					7☐DK *(2)*		
d.	1☐Yes		3☐No						9☐DK

2a. What is the highest grade or year of regular school — — has ever attended?

b. Did — — finish the *(number in 2a)* **[grade/year]?**

	2a.	b.
	00☐ Never attended or kindergarten *(NP)*	
	Elem: 1 2 3 4 5 6 7 8	
	High: 9 10 11 12	
	College: 1 2 3 4 5 6 +	
		1☐Yes 2☐No

Hand Card R. Ask first alternative for first person; ask second alternative for other persons.

3a. [What is the number of the group or groups which represents — — race?] What is — — race?

Circle all that apply
1 — Aleut, Eskimo, or American Indian
2 — Asian or Pacific Islander
3 — Black
4 — White
5 — Another group not listed — *Specify*

Ask if multiple entries:

b. Which of those groups; that is, *(entries in 3a)* **would you say BEST represents — — race?**

c. *Mark observed race of respondent(s) only.*

	1	2	3	4	5
3a.	1	2	3	4	5 ☞ (Specify)
b.	1	2	3	4	5 ☞ (Specify)
c.	1☐W	2☐B	3☐O		

Hand Card O.

4a. Are any of those groups — — national origin or ancestry? (Where did — — ancestors come from?)

b. Please give me the number of the group.
Circle all that apply.
1 — Puerto Rican
2 — Cuban
3 — Mexican/Mexicano
4 — Mexican American
5 — Chicano
6 — Other Latin American
7 — Other Spanish

	1	2	3	4	5	6	7
4a.	1☐Yes 2☐No *(NP)*						
b.	1	2	3	4	5	6	7

	☐ Old age	☐ Old age	☐ Old age	☐ Old age
	2	**3**	**4**	**5**
1.	First name Mid. init. Age Last name Sex 1☐ M 2☐ F	First name Mid. init. Age Last name Sex 1☐ M 2☐ F	First name Mid. init. Age Last name Sex 1☐ M 2☐ F	First name Mid. init. Age Last name Sex 1☐ M 2☐ F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month | Date | Year	Date of birth Month | Date | Year	Date of birth Month | Date | Year	Date of birth Month | Date | Year
C1	HOSP. 00☐ None Number | WORK 1☐ Wa 2☐ Wb | RD 1☐ Yes 2☐ No | 2-WK. DV 00☐ None Number	HOSP. 00☐ None Number | WORK 1☐ Wa 2☐ Wb | RD 1☐ Yes 2☐ No | 2-WK. DV 00☐ None Number	HOSP. 00☐ None Number | WORK 1☐ Wa 2☐ Wb | RD 1☐ Yes 2☐ No | 2-WK. DV 00☐ None Number	HOSP. 00☐ None Number | WORK 1☐ Wa 2☐ Wb | RD 1☐ Yes 2☐ No | 2-WK. DV 00☐ None Number
C2	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.
	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.
	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.
	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.
	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.	LA | RA | DV | INJ. | CL | LTR | HS | COND.
L1	☐ Under 5 *(NP)* ☐ 5–17 *(2)* ☐ 18 and over *(1)*	☐ Under 5 *(NP)* ☐ 5–17 *(2)* ☐ 18 and over *(1)*	☐ Under 5 *(NP)* ☐ 5–17 *(2)* ☐ 18 and over *(1)*	☐ Under 5 *(NP)* ☐ 5–17 *(2)* ☐ 18 and over *(1)*
1a.	1☐ Yes 2☐ No *(2)*	1☐ Yes 2☐ No *(2)*	1☐ Yes 2☐ No *(2)*	1☐ Yes 2☐ No *(2)*
b.	1☐ VN 5☐ PVN 2☐ KW 8☐ OS 3☐ WWII 9☐ DK 4☐ WWI	1☐ VN 5☐ PVN 2☐ KW 8☐ OS 3☐ WWII 9☐ DK 4☐ WWI	1☐ VN 5☐ PVN 2☐ KW 8☐ OS 3☐ WWII 9☐ DK 4☐ WWI	1☐ VN 5☐ PVN 2☐ KW 8☐ OS 3☐ WWII 9☐ DK 4☐ WWI
c.	☐ Yes 2☐ No *(2)* 7☐ DK *(2)*	☐ Yes 2☐ No *(2)* 7☐ DK *(2)*	☐ Yes 2☐ No *(2)* 7☐ DK *(2)*	☐ Yes 2☐ No *(2)* 7☐ DK *(2)*
d.	1☐ Yes 3☐ No 9☐ DK	1☐ Yes 3☐ No 9☐ DK	1☐ Yes 3☐ No 9☐ DK	1☐ Yes 3☐ No 9☐ DK
2a.	00☐ Never attended or kindergarten *(NP)* Elem: 1 2 3 4 5 6 7 8 High: 9 10 11 12 College: 1 2 3 4 5 6 +	00☐ Never attended or kindergarten *(NP)* Elem: 1 2 3 4 5 6 7 8 High: 9 10 11 12 College: 1 2 3 4 5 6 +	00☐ Never attended or kindergarten *(NP)* Elem: 1 2 3 4 5 6 7 8 High: 9 10 11 12 College: 1 2 3 4 5 6 +	00☐ Never attended or kindergarten *(NP)* Elem: 1 2 3 4 5 6 7 8 High: 9 10 11 12 College: 1 2 3 4 5 6 +
b.	1☐ Yes 2☐ No	1☐ Yes 2☐ No	1☐ Yes 2☐ No	1☐ Yes 2☐ No
3a.	1 2 3 4 5 ↘ *(Specify)*	1 2 3 4 5 ↘ *(Specify)*	1 2 3 4 5 ↘ *(Specify)*	1 2 3 4 5 ↘ *(Specify)*
b.	1 2 3 4 5 ↘ *(Specify)*	1 2 3 4 5 ↘ *(Specify)*	1 2 3 4 5 ↘ *(Specify)*	1 2 3 4 5 ↘ *(Specify)*
c.	1☐ W 2☐ B 3☐ O	1☐ W 2☐ B 3☐ O	1☐ W 2☐ B 3☐ O	1☐ W 2☐ B 3☐ O
4a.	1☐ Yes 2☐ No *(NP)*	1☐ Yes 2☐ No *(NP)*	1☐ Yes 2☐ No *(NP)*	1☐ Yes 2☐ No *(NP)*
b.	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE 1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who **USUALLY** lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here?
☐ Yes *(2)*
☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:
Does — — usually live somewhere else?

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

A1

REFERENCE PERIODS
2-WEEK PERIOD
12-MONTH DATE
13-MONTH HOSPITAL DATE

A2 ASK CONDITION LISTS 1,2, and 3.

1.	First name / Mid. init.	Age
	Last name	Sex 1☐M 2☐F
2.	Relationship **REFERENCE PERSON**	
3.	Date of birth Month / Date / Year	

C1

HOSP.	WORK	RD	2-WK. DV
00☐ None	1☐ Wa	1☐ Yes	00☐ None
Number	2☐ Wb	2☐ No	Number

C2

LA	IRA	DV	INJ.	CLLTR	HSTCOND.

L. DEMOGRAPHIC BACKGROUND PAGE, Continued

L2 *Refer to "Age" and "Wa/Wb" boxes in C1.*

L2
0☐ Under 18 *(NP)*
1☐ Wa box marked *(6a)*
2☐ Wb box marked *(5a)*
3☐ Neither box marked *(5b)*

5a. Earlier you said that — — has a job or business but did not work last week or the week before. Was — — looking for work or on layoff from a job during those 2 weeks?
5a. 1☐ Yes *(5c)* 2☐ No *(6b)*

b. Earlier you said that — — didn't have a job or business last week or the week before. Was — — looking for work or on layoff from a job during those 2 weeks?
b. 1☐ Yes 2☐ No *(NP)*

c. Which, looking for work or on layoff from a job?
c. 1☐ Looking *(6c)* 3☐ Both *(6b)* 2☐ Layoff *(6b)*

6a. Earlier you said that — — worked last week or the week before. *Ask 6b.*

b. For whom did — — work? *Enter name of company, business, organization, or other employer.*

c. For whom did — — work at — — last full-time job or business lasting 2 consecutive weeks or more? *Enter name of company, business, organization, or other employer, or mark "NEV" or "AF" box in person's column.*

6b. and c. Employer ☐ NEV *(6g)* ☐ AF *(6a)*

d. What kind of business or industry is this? *For example, TV and radio manufacturing, retail shoe store, State Labor Department, farm.*

d. Industry

If "AF" in 6b/c, mark "AF" box in person's column without asking.

e. What kind of work was — — doing? *For example, electrical engineer, stock clerk, typist, farmer.*

e. Occupation ☐ AF *(NP)*

f. What were — — most important activities or duties at that job? *For example, types, keeps account books, files, sells cars, operates printing press, finishes concrete.*

f. Duties

Complete from entries in 6b—f. If not clear, ask:

g. Was — —
An employee of a PRIVATE company, business or individual for wages, salary, or commission . . . . . P
A FEDERAL government employee? . . . . . F
A STATE government employee? . . . . . S
A LOCAL government employee? L
Self-employed in OWN business, professional practice, or farm?
Ask: **Is the business incorporated?**
Yes I
No . . . . . SE
Working WITHOUT PAY in family business or farm? . . . . . WP
— **NEVER WORKED or never worked at a full-time job lasting 2 weeks or more** . . . . . NEV

g. Class of worker
1☐ P 5☐ I
2☐ F 6☐ SE
3☐ S 7☐ WP
4☐ L 8☐ NEV

FOOTNOTES

	☐ Old age	☐ Old age	☐ Old age	☐ Old age
	2	**3**	**4**	**5**
1.	First name / Mid. init. / Age	First name / Mid. init. / Age	First name / Mid. init. / Age	First name / Mid. init. / Age
	Last name / Sex 1☐M 2☐F	Last name / Sex 1☐M 2☐F	Last name / Sex 1☐M 2☐F	Last name / Sex 1☐M 2☐F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year
C1	HOSP. 00☐None Number / WORK 1☐Wa 2☐Wb / RD 1☐Yes 2☐No / 2-WK. DV 00☐None Number	HOSP. 00☐None Number / WORK 1☐Wa 2☐Wb / RD 1☐Yes 2☐No / 2-WK. DV 00☐None Number	HOSP. 00☐None Number / WORK 1☐Wa 2☐Wb / RD 1☐Yes 2☐No / 2-WK. DV 00☐None Number	HOSP. 00☐None Number / WORK 1☐Wa 2☐Wb / RD 1☐Yes 2☐No / 2-WK. DV 00☐None Number
C2	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)	LA RA DV INJ. CL LTR HS COND. (5 rows)
L2	0☐Under 18 *(NP)* 1☐Wa box marked *(6a)* 2☐Wb box marked *(5a)* 3☐Neither box marked *(5b)*	0☐Under 18 *(NP)* 1☐Wa box marked *(6a)* 2☐Wb box marked *(5a)* 3☐Neither box marked *(5b)*	0☐Under 18 *(NP)* 1☐Wa box marked *(6a)* 2☐Wb box marked *(5a)* 3☐Neither box marked *(5b)*	0☐Under 18 *(NP)* 1☐Wa box marked *(6a)* 2☐Wb box marked *(5a)* 3☐Neither box marked *(5b)*
5a.	1☐Yes *(5c)* 2☐No *(6b)*	1☐Yes *(5c)* 2☐No *(6b)*	1☐Yes *(5c)* 2☐No *(6b)*	1☐Yes *(5c)* 2☐No *(6b)*
b.	1☐Yes 2☐No *(NP)*	1☐Yes 2☐No *(NP)*	1☐Yes 2☐No *(NP)*	1☐Yes 2☐No *(NP)*
c.	1☐Looking *(6c)* 2☐Layoff *(6b)* 3☐Both *(6b)*	1☐Looking *(6c)* 2☐Layoff *(6b)* 3☐Both *(6b)*	1☐Looking *(6c)* 2☐Layoff *(6b)* 3☐Both *(6b)*	1☐Looking *(6c)* 2☐Layoff *(6b)* 3☐Both *(6b)*
6b. and c.	Employer ☐NEV *(6g)* ☐AF *(6e)*	Employer ☐NEV *(6g)* ☐AF *(6e)*	Employer ☐NEV *(6g)* ☐AF *(6e)*	Employer ☐NEV *(6g)* ☐AF *(6e)*
d.	Industry	Industry	Industry	Industry
e.	Occupation ☐AF *(NP)*	Occupation ☐AF *(NP)*	Occupation ☐AF *(NP)*	Occupation ☐AF *(NP)*
f.	Duties	Duties	Duties	Duties
g.	Class of worker 1☐P 2☐F 3☐S 4☐L 5☐I 6☐SE 7☐WP 8☐NEV	Class of worker 1☐P 2☐F 3☐S 4☐L 5☐I 6☐SE 7☐WP 8☐NEV	Class of worker 1☐P 2☐F 3☐S 4☐L 5☐I 6☐SE 7☐WP 8☐NEV	Class of worker 1☐P 2☐F 3☐S 4☐L 5☐I 6☐SE 7☐WP 8☐NEV

FOOTNOTES

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE

1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who **USUALLY** lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here?

☐ Yes *(2)*

☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:

Does — — usually live somewhere else?

Ask for all persons beginning with column 2:

2. What is — — relationship to *(reference person)*?

3. What is — — date of birth? *(Enter date and age and mark sex.)*

	REFERENCE PERIODS
A1	**2-WEEK PERIOD**
	12-MONTH DATE
	13-MONTH HOSPITAL DATE
A2	**ASK CONDITION LISTS 1,2, and 3.**

1.	First name / Last name	Mid. init. / Age / Sex 1☐M 2☐F
2.	Relationship **REFERENCE PERSON**	
3.	Date of birth Month / Date / Year	
C1	HOSP. 00☐None Number	WORK 1☐Wa 2☐Wb
	RD 1☐Yes 2☐No	2-WK. DV 00☐None Number
C2	LA IRA DV INJ. CLLTR HSTCOND.	
	LA IRA DV INJ. CLLTR HSTCOND.	
	LA IRA DV INJ. CLLTR HSTCOND.	
	LA IRA DV INJ. CLLTR HSTCOND.	
	LA IRA DV INJ. CLLTR HSTCOND.	

L. DEMOGRAPHIC BACKGROUND PAGE, Continued

Mark box if under 14. If "Married" refer to household composition and mark accordingly.

7. Is — — now married, widowed, divorced, separated, or has — — never been married?

7.
0☐ Under 14
1☐ Married — spouse in HH
2☐ Married — spouse not in HH
3☐ Widowed
4☐ Divorced
5☐ Separated
6☐ Never married

8a. Was the total combined FAMILY income during the past 12 months — that is, yours, *(read names, including Armed Forces members living at home)* **more or less than $20,000? Include money from jobs, social security, retirement income, unemployment payments, public assistance, and so forth. Also include income from interest, dividends, net income from business, farm, or rent, and any other money income received.**

Read if necessary: **Income is important in analyzing the health information we collect. For example, this information helps us to learn whether persons in one income group use certain types of medical care services or have certain conditions more or less often than those in another group.**

8a.
1☐ $20,000 or more *(Hand Card I)*
2☐ Less than $20,000 *(Hand Card J)*

Read parenthetical phrase if Armed Forces member living at home or if necessary.

b. Of those income groups, which letter best represents the total combined FAMILY income during the past 12 months (that is, yours, *(read names, including Armed Forces members living at home)*)? **Include wages, salaries, and other items we just talked about.**

Read if necessary: **Income is important in analyzing the health information we collect. For example, this information helps us to learn whether persons in one income group use certain types of medical care services or have certain conditions more or less often than those in another group.**

b.
00☐ A 10☐ K 20☐ U
01☐ B 11☐ L 21☐ V
02☐ C 12☐ M 22☐ W
03☐ D 13☐ N 23☐ X
04☐ E 14☐ O 24☐ Y
05☐ F 15☐ P 25☐ Z
06☐ G 16☐ Q 26☐ ZZ
07☐ H 17☐ R
08☐ I 18☐ S
09☐ J 19☐ T

R	a. *Mark first appropriate box.*	Ra. 0☐ Under 17; 1☐ Present for all questions; 2☐ Present for some questions; 3☐ Not present
	b. *Enter person number of respondent.*	b. Person number(s) of respondent(s)
L3	*Enter person number of first parent listed or mark box.*	L3 Person number of parent; 00☐ None in household
L4	*Enter person number of spouse or mark box.*	L4 Person number of spouse; 00☐ None in household
GHA	a. Is - - currently a member of GHA?	a. 1☐ Yes *(NP)* 2☐ No *(b)*
	b. At any time since October 1988, has - - been a member of GHA?	b. 1☐ Yes 2☐ No

	2	3	4	5
	☐ Old age	☐ Old age	☐ Old age	☐ Old age
1.	First name Mid. init. Age Last name Sex 1 ☐ M 2 ☐ F	First name Mid. init. Age Last name Sex 1 ☐ M 2 ☐ F	First name Mid. init. Age Last name Sex 1 ☐ M 2 ☐ F	First name Mid. init. Age Last name Sex 1 ☐ M 2 ☐ F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month | Date | Year	Date of birth Month | Date | Year	Date of birth Month | Date | Year	Date of birth Month | Date | Year
C1	HOSP.: 00 ☐ None, Number WORK: 1 ☐ Wa, 2 ☐ Wb RD: 1 ☐ Yes, 2 ☐ No 2-WK. DV: 00 ☐ None, Number	HOSP.: 00 ☐ None, Number WORK: 1 ☐ Wa, 2 ☐ Wb RD: 1 ☐ Yes, 2 ☐ No 2-WK. DV: 00 ☐ None, Number	HOSP.: 00 ☐ None, Number WORK: 1 ☐ Wa, 2 ☐ Wb RD: 1 ☐ Yes, 2 ☐ No 2-WK. DV: 00 ☐ None, Number	HOSP.: 00 ☐ None, Number WORK: 1 ☐ Wa, 2 ☐ Wb RD: 1 ☐ Yes, 2 ☐ No 2-WK. DV: 00 ☐ None, Number
C2	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.
	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.
	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.
	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.
	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.	LA | RA | DV | INJ. | CL LTR | HS | COND.
7.	0 ☐ Under 14 1 ☐ Married — spouse in HH 2 ☐ Married — spouse not in HH 3 ☐ Widowed 4 ☐ Divorced 5 ☐ Separated 6 ☐ Never married	0 ☐ Under 14 1 ☐ Married — spouse in HH 2 ☐ Married — spouse not in HH 3 ☐ Widowed 4 ☐ Divorced 5 ☐ Separated 6 ☐ Never married	0 ☐ Under 14 1 ☐ Married — spouse in HH 2 ☐ Married — spouse not in HH 3 ☐ Widowed 4 ☐ Divorced 5 ☐ Separated 6 ☐ Never married	0 ☐ Under 14 1 ☐ Married — spouse in HH 2 ☐ Married — spouse not in HH 3 ☐ Widowed 4 ☐ Divorced 5 ☐ Separated 6 ☐ Never married
Ra.	0 ☐ Under 17 1 ☐ Present for all questions 2 ☐ Present for some questions 3 ☐ Not present	0 ☐ Under 17 1 ☐ Present for all questions 2 ☐ Present for some questions 3 ☐ Not present	0 ☐ Under 17 1 ☐ Present for all questions 2 ☐ Present for some questions 3 ☐ Not present	0 ☐ Under 17 1 ☐ Present for all questions 2 ☐ Present for some questions 3 ☐ Not present
b.	Person number(s) of respondent(s)	Person number(s) of respondent(s)	Person number(s) of respondent(s)	Person number(s) of respondent(s)
L3	Person number of parent 00 ☐ None in household	Person number of parent 00 ☐ None in household	Person number of parent 00 ☐ None in household	Person number of parent 00 ☐ None in household
L4	Person number of spouse 00 ☐ None in household	Person number of spouse 00 ☐ None in household	Person number of spouse 00 ☐ None in household	Person number of spouse 00 ☐ None in household
a.	1 ☐ Yes *(NP)* 2 ☐ No *(b)*	1 ☐ Yes *(NP)* 2 ☐ No *(b)*	1 ☐ Yes *(NP)* 2 ☐ No *(b)*	1 ☐ Yes *(NP)* 2 ☐ No *(b)*
b.	1 ☐ Yes 2 ☐ No	1 ☐ Yes 2 ☐ No	1 ☐ Yes 2 ☐ No	1 ☐ Yes 2 ☐ No

☐ Old age

A. HOUSEHOLD COMPOSITION PAGE 1

1a. What are the names of all persons living or staying here? Start with the name of the person or one of the persons who owns or rents this home. *Enter name in* **REFERENCE PERSON** *column.*

b. What are the names of all other persons living or staying here? *Enter names in columns.*

c. I have listed *(read names)*. **Have I missed:**

	If "Yes," enter names in columns	
	Yes	No
— any babies or small children?	☐	☐
— any lodgers, boarders, or persons you employ who live here?	☐	☐
— anyone who USUALLY lives here but is now away from home traveling or in a hospital?	☐	☐
— anyone else staying here?	☐	☐

d. Do all of the persons you have named usually live here? ☐ Yes *(2)*

☐ No *(APPLY HOUSEHOLD MEMBERSHIP RULES. Delete nonhousehold members by an "X" from 1—C2 and enter reason.)*

Probe if necessary:

Does —— usually live somewhere else?

	1. First name / Mid. init. / Age	Last name / Sex (1 ☐ M, 2 ☐ F)	2. Relationship **REFERENCE PERSON**	3. Date of birth Month / Date / Year

C1

HOSP.	WORK	RD	2-WK. DV
00 ☐ None	1 ☐ Wa	1 ☐ Yes	00 ☐ None
Number	2 ☐ Wb	2 ☐ No	Number

C2

LA	IRA	DV	INJ.	CL LTR	HST	COND.

Ask for all persons beginning with column 2:

2. What is —— relationship to *(reference person)*?

3. What is —— date of birth? *(Enter date and age and mark sex.)*

A1 REFERENCE PERIODS

- 2-WEEK PERIOD
- 12-MONTH DATE
- 13-MONTH HOSPITAL DATE

A2 ASK CONDITION LISTS 1,2, and 3.

L. DEMOGRAPHIC BACKGROUND PAGE, Continued

RT01

L5 *Refer to age. Complete a separate column for each nondeleted person aged 18 and over.* — 3–4

L5 PERSON NUMBER _____

Read to respondent(s): **In order to determine how health practices and conditions are related to how long people live, we would like to refer to statistical records maintained by the National Center for Health Statistics.**

L6 *Enter date of birth from question 3 on Household Composition page.* — 5–11

L6 Date of birth: Month / Date / Year

9a. In what State or country was —— born? — 12–13

Print the full name of the State or mark the appropriate box if the person was not born in the United States.

9a. 99 ☐ DK *(NP)*

_____ State

01 ☐ Puerto Rico
02 ☐ Virgin Islands
03 ☐ Guam
04 ☐ Canada
05 ☐ Cuba
06 ☐ Mexico
98 ☐ All other countries

If born in U.S., ask 9b; if born in foreign country, ask 9c.

b. Altogether, how many years has —— lived in *(State of present residence)*? — 14

b. 1 ☐ Less than 1 yr. 2 ☐ 1 yr., less than 5 3 ☐ 5 yrs., less than 10 4 ☐ 10 yrs., less than 15 5 ☐ 15 yrs. or more 9 ☐ DK

c. Altogether, how many years has —— lived in the United States? — 15

c. 1 ☐ Less than 1 yr. 2 ☐ 1 yr., less than 5 3 ☐ 5 yrs., less than 10 4 ☐ 10 yrs., less than 15 5 ☐ 15 yrs. or more 9 ☐ DK

	2	3	4	5
	☐ Old age	☐ Old age	☐ Old age	☐ Old age
1.	First name / Mid. init. / Age	First name / Mid. init. / Age	First name / Mid. init. / Age	First name / Mid. init. / Age
	Last name / Sex 1 ☐ M 2 ☐ F	Last name / Sex 1 ☐ M 2 ☐ F	Last name / Sex 1 ☐ M 2 ☐ F	Last name / Sex 1 ☐ M 2 ☐ F
2.	Relationship	Relationship	Relationship	Relationship
3.	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year	Date of birth Month / Date / Year
C1	HOSP. 00 ☐ None, Number / WORK 1 ☐ Wa 2 ☐ Wb / RD 1 ☐ Yes 2 ☐ No / 2-WK. DV 00 ☐ None, Number	HOSP. 00 ☐ None, Number / WORK 1 ☐ Wa 2 ☐ Wb / RD 1 ☐ Yes 2 ☐ No / 2-WK. DV 00 ☐ None, Number	HOSP. 00 ☐ None, Number / WORK 1 ☐ Wa 2 ☐ Wb / RD 1 ☐ Yes 2 ☐ No / 2-WK. DV 00 ☐ None, Number	HOSP. 00 ☐ None, Number / WORK 1 ☐ Wa 2 ☐ Wb / RD 1 ☐ Yes 2 ☐ No / 2-WK. DV 00 ☐ None, Number
C2	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.
	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.
	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.
	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.
	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.	LA / RA / DV / INJ. / CL LTR / HS / COND.

	RT61	RT61	RT61
L5	3–4 PERSON NUMBER ______	3–4 PERSON NUMBER ______	3–4 PERSON NUMBER ______
L6	Date of birth 5–11 Month / Date / Year	Date of birth 5–11 Month / Date / Year	Date of birth 5–11 Month / Date / Year
9a.	12–13 99 ☐ DK *(NP)* ______ State; 01 ☐ Puerto Rico 02 ☐ Virgin Islands 03 ☐ Guam 04 ☐ Canada 05 ☐ Cuba 06 ☐ Mexico 98 ☐ All other countries	12–13 99 ☐ DK *(NP)* ______ State; 01 ☐ Puerto Rico 02 ☐ Virgin Islands 03 ☐ Guam 04 ☐ Canada 05 ☐ Cuba 06 ☐ Mexico 98 ☐ All other countries	12–13 99 ☐ DK *(NP)* ______ State; 01 ☐ Puerto Rico 02 ☐ Virgin Islands 03 ☐ Guam 04 ☐ Canada 05 ☐ Cuba 06 ☐ Mexico 98 ☐ All other countries
b.	14 1 ☐ Less than 1 yr. 2 ☐ 1 yr., less than 5 3 ☐ 5 yrs., less than 10 4 ☐ 10 yrs., less than 15 5 ☐ 15 yrs. or more 9 ☐ DK	14 1 ☐ Less than 1 yr. 2 ☐ 1 yr., less than 5 3 ☐ 5 yrs., less than 10 4 ☐ 10 yrs., less than 15 5 ☐ 15 yrs. or more 9 ☐ DK	14 1 ☐ Less than 1 yr. 2 ☐ 1 yr., less than 5 3 ☐ 5 yrs., less than 10 4 ☐ 10 yrs., less than 15 5 ☐ 15 yrs. or more 9 ☐ DK
c.	15 1 ☐ Less than 1 yr. 2 ☐ 1 yr., less than 5 3 ☐ 5 yrs., less than 10 4 ☐ 10 yrs., less than 15 5 ☐ 15 yrs. or more 9 ☐ DK	15 1 ☐ Less than 1 yr. 2 ☐ 1 yr., less than 5 3 ☐ 5 yrs., less than 10 4 ☐ 10 yrs., less than 15 5 ☐ 15 yrs. or more 9 ☐ DK	15 1 ☐ Less than 1 yr. 2 ☐ 1 yr., less than 5 3 ☐ 5 yrs., less than 10 4 ☐ 10 yrs., less than 15 5 ☐ 15 yrs. or more 9 ☐ DK

SUGGESTED SCRIPT TO INTRODUCE PERMISSION FORMS: As I mentioned earlier, GHA is working with Westat on this study. As part of the data collection, we would like to obtain some additional information from your medical records at GHA. One of the purposes of this study is to see how certain national health statistics would be different if they were made from medical records rather than from interviewing people in households. To do this, we need your written permission. I remind you that any information that would identify you or members of your family will be destroyed after the data collection.

Hand permission form to respondent. If additional GHA members in household, fill out permission forms for them, and arrange to have them signed as well.

			PERSON 1	PERSON 2	PERSON 3		PERSON 4	PERSON 5
PF1	*Enter status of permission form for each person*	**PF1**	0 ☐ Not Required 1 ☐ Signed 2 ☐ Not Obtained; Left at Household 3 ☐ Refused 4 ☐ Other	0 ☐ Not Required 1 ☐ Signed 2 ☐ Not Obtained; Left at Household 3 ☐ Refused 4 ☐ Other	0 ☐ Not Required 1 ☐ Signed 2 ☐ Not Obtained; Left at Household 3 ☐ Refused 4 ☐ Other	**PF1**	0 ☐ Not Required 1 ☐ Signed 2 ☐ Not Obtained; Left at Household 3 ☐ Refused 4 ☐ Other	0 ☐ Not Required 1 ☐ Signed 2 ☐ Not Obtained; Left at Household 3 ☐ Refused 4 ☐ Other

Appendix II
Health Interview Evaluation Survey abstracting procedures

HEALTH INTERVIEW EVALUATION SURVEY
MEDICAL RECORD CODING GUIDELINES

General Coding Rules

Medical coding for the GHA medical records will utilize the Ninth Revision of the International Classification of Diseases and the Modifications and Special Instructions used for the Health Interview Survey in conjunction with guidelines provided by NCHS.

GHA medical records to be coded have been copied in their entirety from October 1988 through the interview date. These records include GHA clinic visits, telephone encounters, referrals to GHA and non-GHA specialists, pathology reports, special procedure reports and hospitalization records.

A Medical Record Coding Face Sheet (Exhibit 1) has been prepared for each respondent reporting a medical condition and is attached to the medical record. Before coding the record, verify that the name and ID numbers on the face sheet match those on the medical record.

Coding of the record will be done in red pencil on the Medical Record Coding Sheet (Exhibit 2). Enter the batch number from the batch sheet. Enter the Westat ID number, medical record number and the GHA subscriber + family number as they appear on the Medical Record Coding Face Sheet.

One encounter section of the form should be completed for each GHA and non-GHA encounter prior to the interview date, including hospital stays.

Alternate Coding Method

This refers to coding encounters within the two-month reference period only, i.e., two months prior to the interview date, and hospital stays occurring within 19 months of the interview date.

Exhibit 1

HEALTH INTERVIEW EVALUATION SURVEY
MEDICAL RECORD CODING FACE SHEET
March 7, 1991

Patient Name: Jane Doe

Westat ID+Column	Medical record #	Subscriber+Family
430265-01	694723	864250-10

Date of Interview: 06/12/90

2-month reference period: 04/13/90

19-month reference period: 11/14/88

Number of pages in the medical record: _____

Inventory of attached coding sheets:

_____ Encounter form coding sheets

_____ Condition lists

Exhibit 2

943731 Cod-Sht.frm April 10, 1991

BATCH |_|_|_|

HEALTH INTERVIEW EVALUATION SURVEY
MEDICAL RECORD CODING SHEET

WESTAT ID	MEDICAL RECORD #	SUBSCRIBER + FAMILY
|_|_|_|_|_|_|-|_|_|	|_|_|_|_|_|_|	|_|_|_|_|_|_|_|-|_|_|

TOTAL ENCOUNTERS: |_|_|_| EACH ENCOUNTER CODED: |_|

ENCOUNTER: |_|_|_| REASON: |_| FORM TYPE: |_|_| HA: |_|

ENCOUNTER/ADM DATE: |_|_|-|_|_|-19|_|_| HOSPITAL DISCH DATE: |_|_|-|_|_|-19|_|_|

PROVIDER ID NO: 1. |_|_|_|_| 2. |_|_|_|_| 3. |_|_|_|_|

NO. DX: |_|_| DIAGNOSIS CODE HX

_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_	_	_	·	_		_
_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_	_	_	·	_		_
_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_	_	_	·	_		_
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_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_	_	_	·	_		_

ENCOUNTER: |_|_|_| REASON: |_| FORM TYPE: |_|_| HA: |_|

ENCOUNTER/ADM DATE: |_|_|-|_|_|-19|_|_| HOSPITAL DISCH DATE: |_|_|-|_|_|-19|_|_|

PROVIDER ID NO: 1. |_|_|_|_| 2. |_|_|_|_| 3. |_|_|_|_|

NO. DX: |_|_| DIAGNOSIS CODE HX

_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_	_	_	·	_		_
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ENCOUNTER: |_|_|_| REASON: |_| FORM TYPE: |_|_| HA: |_|

ENCOUNTER/ADM DATE: |_|_|-|_|_|-19|_|_| HOSPITAL DISCH DATE: |_|_|-|_|_|-19|_|_|

PROVIDER ID NO: 1. |_|_|_|_| 2. |_|_|_|_| 3. |_|_|_|_|

NO. DX: |_|_| DIAGNOSIS CODE HX

_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_	_	_	·	_		_
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ENCOUNTER: |_|_|_| REASON: |_| FORM TYPE: |_|_| HA: |_|

ENCOUNTER/ADM DATE: |_|_|-|_|_|-19|_|_| HOSPITAL DISCH DATE: |_|_|-|_|_|-19|_|_|

PROVIDER ID NO: 1. |_|_|_|_| 2. |_|_|_|_| 3. |_|_|_|_|

NO. DX: |_|_| DIAGNOSIS CODE HX

_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_	_	_	·	_		_
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_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_		_	_	_	·	_		_

For this method, an encounter section of the coding sheet would be completed for each encounter within the two-month period preceding the interview date. If there are no encounters during the two-month reference period, the most recent encounter prior to the interview date would be coded.

Any "Health Assessment" or "Initial HA New to MD" on the Adult Medicine form (Exhibit 3) would be coded regardless of date.

All hospital stays, or possible hospital stays, occurring within the 19-month period preceding the date of interview would be coded.

The entire medical record would be reviewed for additional diagnoses or conditions not recorded on the above encounters. These diagnoses would be entered on a supplemental form and coded according to NHIS rules.

Coding Specifications

The first two items on the Medical Record Coding Sheet appear in the first section only and serve as a summary.

- TOTAL ENCOUNTERS -- When the medical record has been coded, enter the total number of encounter sections completed. Zero fill lead box(es) if number is less than three digits. The purpose of this item is to provide an edit check.

- EACH ENCOUNTER CODED -- Enter "0" (No) if the Alternate Coding Method is used. Enter "1" (Yes) if each encounter prior to the interview date is coded.

Exhibit 3

05 15 89

[redacted]

[redacted]

[redacted] [redacted]

DEPT. 04

CENTER: 1 2 3 (4) 5 6 8

APPT. STATUS

- 1 [X] Scheduled
- 2 [ ] Walk-in
- 3 [ ] Write-in
- 8 [ ] Other

[redacted]

Tel. (Home)

Tel. (Office)

PROVIDERS

1- [redacted]

2-

3- [redacted]

Appt Time 9:00

Arr. Time 8:55

Appt. Length ○15 ○20 ⊗30 Min.

Providers this Prob.

(PLEASE USE BALLPOINT PEN AND PRINT FIRMLY. DO NOT WRITE IN GREY BLOCKS)

ADULT MEDICINE

NUMBER	PROB. TITLE/DX	STATUS
	INITIAL HA + 65	[ ] N [ ] C [ ] R
		[ ] [ ] [ ]
		[ ] [ ] [ ]

PROCEDURES & SERVS:

- [✓] Initial HA new to MD
- [✓] Health Assessment
- [ ] Prob. Workup-Followup
- [ ] Specialty Consultation New
- [ ] Specialty Consultation-F/U
- [ ] Cardiology [ ] Oncology
- [ ] Pulmonary [ ] G.I.
- [ ] Proctoscopy
- [ ] Chemotherapy
- [✓] Patient + 65
- [ ] Suture/Suture Removal
- [ ] Other Procedures
- [ ] Inj/Aspir. Bursa/Joint
- [ ] Inj/Aspir. Body Cavity
- [ ] Bronchoscopy
- [ ] Colonoscopy
- [ ] Upper GI Endoscopy
- [ ] Liver Biopsy

LAB ORDERS:

- [✓] CBC-Hgb, Hct, WBC
- [ ] Diff.
- [ ] CSR (Sed. rate)
- [ ] Sickle prep.
- [ ] Platelets
- [ ] Blood group
- [ ] Prothrombin
- [ ] PTT
- [✓] SMA 9: Cal. Phos. BUN Uric Acid Creat. Bili. Alk. phos. GOT
- [ ] Elec: Na K CO_2 Cl.
- [ ] Gluc. Tol. 0 1 2 3 __ R
- [✓] Lipoprot.: Chol. Trig.
- [ ] SGPT
- [✓] Other TSH, HDL
- [ ] Prot. Electrophoresis
- [ ] Hgb-Electrophoresis
- [✓] T_3 T_4
- [ ] Culture (Source):
- [ ] Gram stain
- [ ] Wet mount
- [✓] Feces occult blood
- [✓] Urinalysis-Routine
- [ ] Mono test (mono spot)
- [ ] Preg test
- [ ] RPR
- [ ] Pap smear

Pap-outside GHA

OTHER ORDERS: [✓] EKG [ ] Chest [ ] Abdomen [X] Other ① routine mammogram ② T spine

SUPPLY ITEMS USED (type)

Prescriptions:

[ ] No Charge
[ ] No Charge
[ ] No Charge
[ ] No Charge

Chol 1981 = 20?

Mammo 6/88

EKG 1978

Age 69 Sex: M (F) Ht 5'3½ Wt 145½ B/P 130/80 P 70 T ____

MD ____ Contraception ____ Last Pap 2wks ago LMP ?

DISPOSITION: ○ Return in [ ] days [ ] wks. [ ] mos. [ ] yrs./or ○ PRN for ○ 15 or [ ] mins.

○ Tel. to/from Patient ⊗ Referral to: flex sig

OTHER PROBLEMS SEEN:

Prob. # **CLINICAL NOTE:**

allergies - ASA

meds { occ. Provera, Premarin vag 3x weekly cream pr., ITC, Ca++ TID

tobacco - ∅

etoh - occas.

vision - 1989 glasses

dental - 1989

(last seen 1986)

- chronic blepharitis
- III pap / colposcopy 1979
- sees outside GYN (Scibella)
- DJD - hands.

surgery - ∅ TTA x2, D+C x3

tetanus - 1985

G4 P4

ill/hosp none

- Fx (R) ankle 1976
- Fx (R) ribs 1981

(SOC) [redacted]

(FH) mother CHF. Father 95 alive.

(ROS) gen feel well. wt stable. Tinnitus. no CP, AP, SOB, no GI sx. Procto "long time." urethral caruncle - occ. bleeds. Back occ feels "prickly"!

(PE) healthy. [illegible] [redacted]

[ ] Continued

Group Health Association, Inc., Washington, D.C. 20037

Form No. 2-04002 (Rev. 1/84)

Encounter

This is a serial number identifying the specific encounter. The first section will be 001, the second 002, etc. The number from the last encounter section will be entered in TOTAL ENCOUNTERS when the medical record is completed.

Reason

This refers to the specific reason for coding the encounter.

1 = Encounter within two months of interview date. Alternate method

If the alternate method of coding is used, enter "1" for each encounter, excluding hospital stays, occurring within the two-month reference period. Reference dates are on the Medical Record Coding Face Sheet.

2 = Most recent encounter if none within the two-month reference period. Alternate method.

If the alternate method of coding is used and there are no encounters within the two-month reference period, excluding hospital stays, enter "2" for the encounter with the most recent date. For example, if the interview date is 06/07/90, the two-month reference period is 04/08/90 and there are Adult Medicine encounters dated 06/15/90 and 02/21/90, the visit of 02/21/90 would be entered.

3 = Health Assessment.

It is important to identify all Health Assessments found on the Adult Medicine form only. This might be identified by "HA" in the Prob. Title/Dx and/or checked under Procedures and Services as "Initial HA new to MD" or as "Health Assessment." Health Assessments of other specialties are not included in this code, e.g., OB/GYN HA.

Enter "3" if the record indicates it is an Adult Medicine HA.

4 = Hospital stay within 19 months of interview date.

Hospital stay is defined as an overnight stay in a hospital. This must be documented by a discharge summary or other hospital records. If the only reference to a hospital stay is found on the Hosp. Adm/ER/In and Out Surgery form or other GHA encounter forms, code the GHA form only, not a hospital stay.

Enter "4" if an overnight hospital stay is present.

5 = Possible overnight hospital stay within 19 months of interview date.

This code should only be used if there is documentation of a hospital stay but no discharge date is available and the Hosp. Adm/ER/In and Out Surgery form does not confirm an overnight stay.

Enter "5" if a possible overnight hospital stay is present.

6 = No eligible encounter form.

Enter "6" if there are no eligible encounter forms in the record, i.e., prior to the interview date, stop coding and enter "001" in "Total Encounter" boxes.

7 = Other. Each encounter coded.

This code will identify encounters, excluding Health Assessments, hospital stays and possible hospital stays, when the alternate coding method is not used.

Enter "7" for all other encounters prior to the interview date ignoring the two-month reference period.

Form Type

ADULT MEDICINE 01
ADVICE/PRESCRIPTION 02
ALLERGY/IMMUNOLOGY 03
ANTICOAGULATION THERAPY 04
CONSULTATION/REFERRAL GHA (IN-HOUSE) 05
CONTACT LENS FORM 06
CONTINUING CARE 07
DERMATOLOGY 08
EAR, NOSE AND THROAT 09
EYE CARE 10
HOSPITAL ADM/ER/IN AND OUT SURGERY 11
MINOR INJURY UNIT (MIU) 12
NEUROLOGY 13
NUTRITION 14

This item refers to the GHA form in the medical record documenting the reason for the visit/encounter. Forms are labeled on the side or at the top. Typed GHA clinical notes should be matched by date to the appropriate form for coding purposes. Clinical notes are not entered as a separate encounter. Enter the correct code from the above list. Zero fill the lead box if needed. Reports from outside specialists should be coded "other non-GHA," "28." If other GHA forms not listed here are encountered, complete a problem sheet so the next available number can be assigned.

Forms to be excluded are laboratory/pathology reports, consent forms, return-to-work forms, and encounter forms marked "NS" (no show).

Health Assessment (HA)

This item is important if the alternate coding method is used and serves to identify a Health Assessment when it is an encounter within the two-month reference period or is the most recent encounter prior to the two-month reference period. This item must be completed for all encounters regardless of the coding method used.

Enter "0" (No) if the encounter is not a Health Assessment.

Enter "1" (Yes) if the encounter is a Health Assessment.

Encounter/Admission Date

Enter the month, day and year of the date of the encounter or hospital admission. This date cannot be later than the interview date. If the alternate method is used, this date must be within the two-month reference period unless it is a Health Assessment, a hospital stay or most recent encounter if none within the two-month reference period. For dates which are missing or illegible, assume the records are in chronologic order and use the preceding and subsequent forms in an effort to establish a date. If this is not successful, enter "99" for the missing parts of the date. Fill the leading box with a zero as needed.

Hospital Discharge Date

This item is completed when records of an overnight hospital stay are available. Enter "99" for missing parts of the date. Zero fill the leading box as needed. If the encounter is not a hospital stay, leave the item blank.

Provider ID Number

Enter the provider ID numbers in the order of appearance on the GHA form. For example, if Providers 1 and 2 are blank on the form and 3 is 775, enter 0775 in the third set of coding boxes. The first two sets of coding boxes will be blank. Zero fill lead boxes as needed. If there is no Provider number on the GHA form, enter "9999" in the first set of boxes. For non-GHA encounters, leave the boxes blank.

Diagnosis

The diagnosis will usually be found on the GHA encounter form in the Prob. Title/Dx section. However, it will be necessary to skim the clinical notes for clarification of a diagnosis or to capture additional diagnoses, entering the primary reason(s) for the visit first. Enter the

diagnostic verbiage in the boxes using only one line for each diagnosis to be coded. Use abbreviations to conserve space and time. For operations occurring within one year of the interview date, a diagnosis or condition should be entered.

For hospitalizations, the diagnoses should be on the discharge summary. The contents of the summary should be reviewed for additional diagnoses.

Some encounters will not have a diagnosis or condition mentioned. Refer to the section on Code for recording a diagnosis for these encounters.

Code

Select the appropriate code for the diagnosis by consulting the special instructions used for the Health Interview Survey as well as Vol. 1 and 2 of the Ninth Revision of ICD. Enter the four-digit code in the boxes provided. For diagnoses not requiring a fourth digit, enter "+" in the last box. There should be no blank boxes.

Some encounters will not have a diagnosis, e.g., routine examination on a healthy person or a telephone call requesting a prescription refill. For these encounters, use one of the following codes:

NCO.1 = General checkup or examination

NCO.2 = Tests only

NCO.3 = Immunization only

NCO.4 = Other (specify the reason)

Enter the verbiage in the diagnosis boxes.

Problem Sheets

The medical coder should complete a Problem Sheet (Exhibit 4) when there is a question regarding the medical record forms or diagnostic codes.

History (Hx)

The intent of this item is to capture significant medical conditions which were present at some time in the past but have been treated and may not be present at the time of the current encounter, e.g., a respondent has a history of prostatectomy due to cancer of the prostate. HIS rules do not permit the use of history, "V," codes so the diagnostic code will be flagged to indicate a "history of" condition. For operations more than one year prior to the interview date and the cause is stated, enter the diagnosis, code and indicate this is a history of the condition.

0 = No. Enter "0" if the diagnosis is still present or is an operation within one year of the interview date.

1 = Yes. Enter "1" if the diagnosis is stated as a history of the condition and is no longer present.

Record Overflow

If more than one coding sheet is required, continue coding on as many sheets as necessary. For continuation sheets, remember to complete the Batch, Westat ID, Medical Record and Subscriber + Family numbers. Enter "+ + +" in the boxes for Total Encounters and "+" in the box for Each Encounter Coded.

For encounters having more than five diagnoses, enter the overflow in the next encounter secton. The total number of diagnoses is entered in the original section. It is not necessary to repeat any of the encounter identification information. Draw a line through the blank boxes from "ENCOUNTER" through "NO. DX."

Overflow diagnoses for the Alternate Coding Method will be entered on a supplemental coding form.

When the entire medical record has been coded, visually edit your work, making sure encounter numbers are sequenced correctly and all boxes requiring an entry have been completed. Enter the total number of encounters in the first section of page one and staple the forms in the upper left-hand corner.

Exhibit 4

HEALTH INTERVIEW EVALUATION SURVEY
GHA MEDICAL RECORD EFFORT
PROBLEM SHEET

943731

WESTAT ID#: |__|__|__|__|__|__|-|__|__| MEDICAL RECORD #: |__|__|__|__|__|__|

GHA #: |__|__|__|__|__|__|-|__|__| ENCOUNTER/CONDITION DATE: _____

DIAGNOSIS/CONDITION #: _____

SENT FROM: _____ DATE: _____

PROBLEM: _____

SOLUTION: _____

DECISION BY: _____ DATE: _____

Appendix III
Loose match recommendations

It was decided to exclude conditions on the medical record for which the "History" indicator was flagged, except those conditions on the "Ever" list (condition list 2). On this list are: Hardening of the arteries or arteriosclerosis; congenital heart disease; coronary heart disease; hypertension/high blood pressure; angina pectoris; myocardial infarction; and any other heart attack. That is, for these conditions on the medical record, those for which a history was indicated will be kept.

Arthritis

Add:

274.0 Gouty arthropathy
274.1 Gouty nephropathy
274.8 Gout with other manifestations

710.2 Sjogrens Disease

717.7 Chondromalacia, knee

720.9 Unspecified inflammatory spondylopathy
720.2 Sacroiliitis, not elsewhere classified

722.9 Disc disorder,*Recode C 105
722.4 Lumbosacral/cervical degeneration, *Recode C 105
722.5 SAME

723.4 Cervical radiculopathy

724.3 Sciatica, *Recode C 104
724.4 Neuritis/radiculitis

Rheumatism

This category was not considered because of the low incidence (N = 1).

Dermatitis

Add:
039.0 Actinomycotic infections, cutaneous
110.4 Dermatophytosis of foot, athlete's foot
110.0 Of scalp and beard
110.1 Of nail
110.2 Of hand
110.3 Of groin and perianal area
110.5 Of the body
110.8 Of other sites
110.9 Of unspecified site
111.0 Pityriasis versicolor (tinea)
111.9 Dermatomycosis, unspecified (BARN DOOR?)
111.8 Dermatomycosis, other (BARN DOOR?)

373.0 Blepharitis
373.3 Noninfectious dermatoses of eyelid
373.1 Hordeolum and other deep inflammation of eyelid
373.2 Chalazion
373.9 Unspecified inflammation of eyelid

682.9 Cellulitis and abscess, unspecified site
682.0 Face
682.2 Trunk
682.3 Upper arm and forearm
682.4 Hand, except fingers
682.5 Buttock
682.6 Legs, except foot
682.7 Foot, except toes

686.9 Unspecified local infection of skin and subcutaneous tissue
686.1 Pyogenic granuloma
686.8 Other local infections of skin and subcutaneous tissue

696.1 Other psoriasis, *Recode C 112
696.3 Pityriasis rosea
696.5 Other and unspecified pityriasis

707.9 Chronic ulcer of skin, unspecified site
707.0 Decubitus ulcer
707.1 Ulcer of lower limbs
707.8 Chronic ulcer of other specified sites

782.1 Rash and other nonspecific skin eruption
782.2 Localized superficial swelling, mass or lump
782.7 Spontaneous ecchymoses
782.8 Changes in skin texture

Impairments

There is no loose match for impairments, because the loose match is essentially a critique of Recode C, and matching conditions to impairments does not make sense in that context.

Tinnitus

There are no recommendations for a loose match.

Cataracts
There are no recommendations for a loose match.

Constipation

There are no recommendations for a loose match.

Diabetes

There are no recommendations for a loose match.

Migraine

No recommendations for a loose match were made.

Heart conditions (ischemic, tachycardia, heart murmurs, other and unspecified rhythm disorders, congenital heart disease, other selected diseases of heart)

There is no loose match, but heart conditions are aggregated as they appear in the NHIS prevalence reports.

Hardening of the arteries
413 Angina pectoris
414 Other forms of chronic ischemic heart disease
437.0 Cerebral atherosclerosis
443.9 Other peripheral vascular disease, unspecified (usually claudication)

Varicose veins of lower extremities

There are no recommendations for a loose match.

Hemorrhoids

There are no recommendations for a loose match.

Hypertension

There are no recommendations for a loose match.

Chronic bronchitis

Chronic obstructive pulmonary disease, 496, is added to the 601 group.

Asthma

There are no recommendations for a loose match.

Allergic rhinitis and chronic sinusitis

There is a general upper respiratory category that includes:

Recode C 603, Allergic rhinitis
Recode C 605, Chronic sinusitis
472.0, Chronic rhinitis
472.2, Chronic Nasopharyngitis

Appendix IV
Definitions of terms used in this report

AB design—Study design for survey validity check in which population survey is conducted, then records are checked for characteristics elicited from survey.

AC design—Study design for survey validity check in which cases containing characteristics of interest are selected from medical records, then interviews are conducted with those people and data compared; also called a "reverse record check."

Accuracy—Tendency of test measurement to center around the true value.

Bias—Persistent or systematic error.

Condition-level prevalence[1]—The number of different conditions within a National Health Interview Survey (NHIS) recode group per 1,000 population, as reported in a survey. More than one condition in the NHIS recode group may be counted per survey participant.

Criterion validity—Measure of correctness of survey responses compared with true values.

False negative—Failure of the survey to report a condition mentioned in the medical record, assuming the medical record to be true.

False positive—A survey report not confirmed by the medical record, assuming the medical record to be true.

Field bias—Systematic error arising from the difference between the information derived from survey respondents and that from verification sources.

Full design—Study design for survey validity check in which population is sampled independently of characteristic of interest, and survey and record information are obtained and compared for each sampled element.

Household member[1]—A person living in the same household as a list-sample person, for whom data were collected in the Health Interview Evaluation Survey (HIES) interview and from Group Health Association (GHA) medical records.

Kappa statistic—A statistic measuring agreement between two sources of classification of the same phenomenon; the Kappa statistic is superior to "percent agreement" because the former takes into account the likelihood of chance agreement.

List-sample person[1]—A person selected from GHA records to participate in the HIES.

Net overreport[1]—The net difference between prevalence derived from two sources; specifically, the rate derived from the HIES interview minus the rate derived from GHA records.

NHIS recode group—Groups of chronic conditions aggregated from codes assigned according to the NHIS modifications to the International Classification of Diseases, Ninth Revision, Clinical Modification; Recode C is the aggregation used for producing prevalence estimates of chronic conditions from the NHIS.

Nonresponse—The failure of a unit or units to respond to a survey entirely (unit nonresponse) or to particular items on a survey (item nonresponse).

Nonsampling error—Difference between a survey estimate and the true value not due to sample design; includes response, processing, and interpretation errors.

Percent overreport[1]—The relative difference between prevalence derived from two sources; specifically, the rate derived from the HIES interview divided by the rate derived from GHA records.

Person-level prevalence[1]—The number of persons per 1,000 population having one or more conditions in a particular NHIS recode group, as reported in a survey.

Reliability—Tendency of repeated measurements on the same sample to yield the same result, providing consistent answers in comparable situations and without random errors.

Response error—Errors, not due to sampling, introduced during the course of data collection because of such things as interviewing, enumerating, and counting or measuring problems.

Sensitivity—True positive rate or proportion of cases known to be positive (confirmed by medical record), for which a positive household response is obtained.

Specificity—True negative rate or proportion of cases known to be negative (absent from medical record), for which negative household responses are obtained.

Type A match[1]—Match of positive response by household interview and medical record, a "positive match."

Type B mismatch[1]—Mismatch caused by positive household response on a specific item and negative or no medical record notation for the same item, an apparent "false positive."

Type C mismatch[1]—Mismatch caused by negative or no household response to a specific condition and a positive medical record notation for the same condition, an apparent "false negative."

Type D match[1]—Match of negative response by household interview for specific item and no medical record notation for that item, a "negative match."

Validity—Tendency of responses to a survey question to correspond to what the question is intended to measure.

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[1]Term defined specifically for this study.

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Data Dissemination Branch
National Center for Health Statistics
Centers for Disease Control and Prevention
Public Health Service
6525 Belcrest Road, Room 1064
Hyattsville, MD 20782

(301) 436–8500

DEPARTMENT OF
HEALTH & HUMAN SERVICES

Public Health Service
Centers for Disease Control and Prevention
National Center for Health Statistics
6525 Belcrest Road
Hyattsville, Maryland 20782

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