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VITAL and HEALTH STATISTICS

DATA EVALUATION AND METHODS RESEARCH

Interview Response on Health Insurance Compared With Insurance Records

United States-1960

Description of a cooperative study measuring the accuracy of information obtained in interviews on health insurance coverage.

Washington, D.C. August 1966

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
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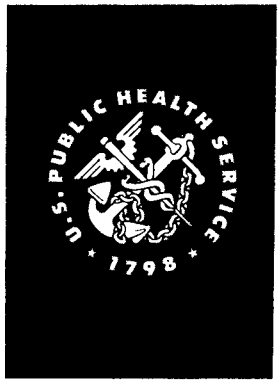

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CONTENTS

IN THIS REPORT *a methodological study designed to measure the accuracy of information on health insurance coverage obtained in health interviews is described. The study plan provided for checking information obtained in a subsample of households in the Current Population Survey against records maintained by insurance organizations. However, certain problems unforeseen during the planning phase of the study made it impossible to carry out all of the outlined procedures, thus preventing the full accomplishment of the study objectives.*

In addition to presenting the findings produced from the record-check procedure, this report includes information relating to the method of study, the problems encountered in the conduct of the study, and the characteristics of record-check studies in general.

SYMBOLS

Data not available	---
Category not applicable	...
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

INTERVIEW RESPONSES ON HEALTH INSURANCE COMPARED WITH INSURANCE RECORDS

This report describes a study carried out by personnel of the Division of Health Interview Statistics and the Statistical Research Division, U.S. Bureau of the Census. Assistance in the planning and conduct of the study was provided by the Blue Cross Association and member associations of the Health Insurance Council.

INTRODUCTION

In addition to its continuous program of data collection, the Health Interview Survey sponsors a number of research studies designed to evaluate the reliability of its collected data. During the past several years studies have been conducted in which information obtained by household interview was checked against records maintained by medical facilities. Information reported on hospitalizations, physician visits, and chronic conditions has been evaluated by record-check studies.

The study described in this report was concerned with health insurance coverage. A pilot project conducted during late 1959 and early 1960 led to procedures for a study which was planned for use in measuring the reliability of the health insurance data collected for the first time in the Health Interview Survey during the period July-December 1959. Because certain problems not foreseen during the planning phases precluded the complete fulfillment of the original objectives of the Health Insurance Record-Check Study, this report is chiefly concerned with the method of study as it exemplifies some of the advantages and disadvantages of evaluative studies of this kind.

Since the U.S. Bureau of the Census carries out collection and processing activities in the ongoing program of the Health Interview Survey, the Bureau is interested in evaluative and methodological studies relating to Survey data. In this study, resources of the Current Population Survey—a monthly survey conducted by the Bureau—were used in obtaining the household data on health insurance coverage. Personnel in the Statistical Research Division carried out the operational and analytical phases of the study.

Through the cooperation of the Blue Cross Association and the Health Insurance Council it was possible to obtain information from health insurance files maintained by the members of these organizations for the purpose of comparing the interview data to the record sources.

THE RESEARCH PROBLEM AND METHOD OF APPROACH

The initial purpose of this study was to assess the reliability and accuracy of data on health insurance coverage obtained from household respondents. In an attempt to accomplish this purpose, a subsample of households in the Current Population Survey was asked to complete a questionnaire on health insurance coverage. The information provided by respondents was then checked with records maintained by insurance organizations.

The original objectives of the Health Insurance Record-Check Study were as follows:

1. To provide estimates of the underreporting and overreporting of insurance coverage information collected by household interview.
2. Given the fact of coverage, to provide some information on the quality of the reporting of details about the coverage.
3. To provide some information on duplication of coverage for an individual by the various health insurance plans or companies.

A study plan was devised which consisted of checking the information on insurance coverage obtained from forms mailed in by families and individuals living in 4,500 households included in the Current Population Survey. All forms, whether coverage was reported or not, were to be checked against records maintained by the Blue Cross-Blue Shield Association. A subsample of the original group was to be checked against other record sources, namely, commercial insurance companies and carrier agencies such as insurance plans sponsored by employers or labor unions. It was hoped that a combination of record checks with these three sources would provide some measure of the duplication of insurance coverage.

Even though the procedures for this study had been carefully outlined, certain problems that had not been foreseen during the planning phase prevented the full accomplishment of the objectives. On the basis of a pilot study, it had been assumed that information obtained from self-enumeration forms completed by household respondents would be sufficient to permit an adequate check against health insurance records. Moreover, it was believed that insurance record files were maintained in such a way that the checking procedure could be carried out, even though some difficulty was anticipated in relation to group policies, union-sponsored policies, and dependent insureds.

Of the three sources used in the record check, information from only one, Blue Cross-Blue Shield, was completely evaluated, although findings from the other two sources were used in this evaluation when appropriate. Since the record-check procedure was controlled through a central source (the Blue Cross Association in New York), and because only Blue Cross had an opportunity to check all of the completed forms received from households, estimates have been prepared only for Blue Cross-Blue Shield coverage. Problems that arose with use of the other two sources will be described in a later section of this report.

Although the analysis was limited to the determination of whether or not persons in the study were covered by health insurance plans sponsored by the Blue Cross-Blue Shield organization, this determination could not be made for approximately one-sixth of the persons in the sample. The data have been adjusted on the basis of the distribution of persons whose status could be determined (see Appendix III for description of adjustment method). This adjustment made it difficult to assess the validity of the matching study results. For this reason, in the description of the project, major emphasis has been placed on the method of study, the problems encountered in the conduct of the study, and the shortcomings of record-check studies in general, rather than on the substantive findings produced from the record-check procedure.

The data from the sample survey and from the record source have been expanded to produce estimates of the insurance coverage rates in civilian, noninstitutional population of the United States. However, the procedures used in analyzing the material were set up primarily to determine the presence or absence of agreement between the information provided by the respondents and that provided by insurance records.

BACKGROUND MATERIAL RELATIVE TO THE RECORD CHECK

Health Insurance Council Estimates of Health Insurance

Prior to 1959 the annual report of the Health Insurance Council was the major source of estimates of health insurance in force in the United States.[1] The only other data came from occasional household interview surveys conducted by the Federal Government and private groups.

Data presented in the annual publication issued by the Health Insurance Council (HIC), "The Extent of Voluntary Health Insurance in the United States as of December 31, 19—," come from three sources: (1) Insurance carrier information is compiled by the Council itself. (2) Plans affiliated with Blue Cross-Blue Shield (Blue Plans) and the American Medical Association's Medical Service Council assemble statis-

[1]The following discussion of the Health Insurance Council's annual report is a summary of a paper, "The Measurement of Voluntary Health Insurance Coverage in the United States," presented in October 1958 by David Robbins, Assistant Director of Statistical Research for the Health Insurance Association of America. This paper appeared in the July 1959 issue of the *American Journal of Public Health*.

tics and forward them to the Council. (3) The Social Security Administration, Division of Program Research, compiles data on independent plans and transmits these data to the Council.

Insurance carrier information comes from a universe which is constructed on two related bases, a current census of companies and the total accident and health insurance premiums written in the United States. The response rate has always been high (86 percent of premiums written in 1958), and the Council feels that nonresponse has been properly taken into consideration.

The resulting data are broken down into three groups. The first is the total number of persons covered against hospital, surgical, regular medical expenses, major medical expenses, and loss of income; second, the total primary insureds and total dependents; and third, distributions by State.

The Blue Cross Commission receives from each of its recognized plans a quarterly report containing fiscal and enrollment information. The A.M.A. conducts a survey on an annual basis of enrollment under medical society sponsored or approved plans. A careful trend analysis is maintained for these statistics, and when necessary, followups are undertaken and verifications are obtained from the reporting agencies.

The Division of Program Research of the Social Security Administration conducts an annual survey of independent plans and furnishes the HIC with totals for each plan.

A major concern with this type of report is duplication of coverage. The Council conducts periodic examinations to measure this factor. In 1956 analyses were made of 1,000 consecutive applications for coverage and 1,000 consecutive claim applications, and the indications were that with individually purchased contracts, duplication amounted to about 22 percent. Another study of group insurance came up with 19 percent duplication among persons in group programs. Results of a third (and more recent) study consisting of an analysis of several thousand persons admitted to hospitals who were interviewed regarding multiple health insurance ownership confirmed the reasonableness of the estimates developed by the methods previously mentioned, according to the Council.

To determine the net coverage under group and individual insurance, the duplication factors are split on a judgment basis into duplication within the insurance business and duplication between insurance and other coverages.

There are various problems and limitations accompanying this type of study. First, there are two major sources of error: (1) the imputation procedures used to fill in data for nonresponding carriers and (2) the estimation procedures employed to adjust the counts of total insureds to eliminate double-counts for persons with two or more health insurance contracts.

Second, the HIC report breaks down coverage among many specific types of carriers by regions and States and by primary insureds and dependents, but by no other characteristics of the population (such as age, sex, color, or income).

In addition, the HIC definition of "regular medical expense" includes a great variety of plans providing widely differing extents of coverage. "Regular medical" policies apply primarily to inhospital physicians' services other than the more common surgical coverage. Such policies usually do not cover home and office visits. Also included in this category, along with the limited type of policy just described, is the far broader protection provided by the Kaiser Foundation Health Plans, the Health Insurance Plan of Greater New York, and other comprehensive prepayment plans.

Health Interview Survey Estimates of Health Insurance

In early 1959 it was proposed that the Health Interview Survey collect information on health insurance coverage during fiscal year 1960.

Several questions on health insurance were in fact added to the questionnaire for the two quarters including July-December 1959, although the continuing household questionnaire method for collecting such data was comparatively new and this procedure was in the nature of an experiment.

Questions were designed to elicit information as to whether individuals had hospital, surgical, or doctor visit insurance ("doctor visit" insurance meaning coverage for a doctor's visit to the home or a patient's routine visit to his office).

The source data were derived from a continuing household interview survey based on a probability sample of the civilian, noninstitutional population in the United States. From July through December 1959 approximately 19,000 households containing 62,000 persons were interviewed. For 52 percent of the population all of the information was obtained during the interview. For the other 48 percent, all of the illness and demographic information was obtained at the time of interview, and the health insurance information was collected by a special mail-in form which was left at the household for the head of the reporting unit to complete and return.

One of the limiting factors in the quality of data obtained by household interview may be the degree of nonresponse. Further limitations arise from the fact that the data are no better than the respondent's knowledge of and willingness to discuss his own affairs.

The total noninterview rate was 5 percent. Four percent was primarily due to the failure to find any eligible household respondent after repeated trials. Only 1 percent of the households scheduled for interview resulted in refusal to give any information. Of the persons for whom the regular interview was completed, 3.7 percent failed to give the information on health insurance. This additional nonresponse was due to the failure to return the mail-in form where one had been left.

Some impression of the second limiting factor, lack of knowledge, can also be gained from the data. For hospital insurance an estimated 1.9 percent of the population either did not know whether they were covered or else failed to understand the question. For surgical insurance the comparable figure was 4.8 percent, and for doctor visit insurance it was 6.3 percent. To compute the percentages of the various types of coverage shown in the NHS report, only those persons who responded "yes" or "no" as to whether they had health insurance were included.

The third source of error in the data obtained by interview during July-December 1959 was in the quality of information given by the respondent. The survey design did not provide for a direct measure of the reliability and accuracy of the data; however, two indirect means were utilized for checking responses. The first was a comparison with data from other sources, such as results from other surveys and the estimates made from insurance company records. The second was a check of a sample of questionnaires against published lists of insurance companies to determine whether such a company actually existed and whether it provided the type of insurance which had been reported. Only rarely did a respondent name a plan which was not on the published lists.

The three forms of health insurance included in the study were (1) hospital insurance, which pays all or part of the bill for a hospitalized person; (2) surgical insurance, which pays all or part of the bill of the operating doctor either in a hospital or at his office; and (3) doctor visit insurance, which pays the doctor's bill for nonsurgical care including home or office visits or other services related to illness.

Public welfare, Armed Forces care of dependents, Veterans Administration care, specified disease insurance, workmen's compensation, loss of income insurance, accident and "dread disease" policies, and the like were not included.

Insofar as types of insuring organizations were concerned, the responses were allocated among "Blue Plans," "other than Blue Plan," and "Blue Plan and other." For the most part, "other" included insurance offered by commercial carriers and by independent prepaid comprehensive plans.

The resulting data were broken down primarily by age and sex into tables of coverage by residence and region, family characteristics, health characteristics, and type of insuring organization. Population data for each of these classes were presented for use in computing sampling errors.

The statistics produced by the survey are a result of two stages of ratio estimation. The effect of this adjustment is to make the sample closely representative of the civilian, noninstitutional population of the United States by age, sex, color, and residence, thus reducing sampling variance.

Data are adjusted for nonresponse by a procedure which imputes to persons in a noninterview household the characteristics of the persons in interview households from the same segment (small cluster of households).

Preliminary Evaluation of the NHS Health Insurance Study

Late in July 1959, it was decided to drop the health insurance questions from the questionnaire as of January 1, 1960. The basis for this decision was that the two-quarter sample would be sufficient for preliminary evaluation purposes. At the same time it was agreed to wait until after an internal analysis of the data—and a comparison with data from independent sources—to decide whether the results should be published.

It was also agreed that studies would be carried out for evaluation purposes. Discussions with Blue Cross and other insurance companies were to be attempted to see what these groups could do in the way of providing check data. Pretesting was planned for the autumn of 1959, leading to procedures for an evaluation study of the health insurance data from the household survey.

Pilot Study of the Health Insurance Record Check

In November 1959, the Boston, Cincinnati, Detroit, Philadelphia, and Pittsburgh regional field directors of the Bureau of the Census, which assists the Public Health Service on all aspects of the National Health Survey, were instructed in the procedures for a pilot study. In late 1959 and early 1960 Blue Cross and member associations of the Health Insurance Council were contacted and involved in discussions regarding the testing of procedures for checking insurance coverage.

The conclusions based on evaluation of the pilot study were that Blue Cross and commercial insurance carrier checks could be made, although the carriers would not be able to undertake a large-scale investigation. The particular problem in checking against records of the commercial and independent carriers was that to insure completeness of the checking of every name in the household sample it was necessary to examine the files of a large number of carriers. For any one carrier, particularly a smaller one, to find a name would be a rare occurrence. To check for Blue Cross-Blue Shield coverage, on the other hand, required searching in the files of only one, two, or occasionally three plans covering the place of residence and the place of work of the individual.

From the results of the pilot study and conversations with the carriers, procedures were set up for the Health Insurance Record Check, the aim of which was to investigate the soundness of the household interview survey method for collecting data on health insurance.

THE STUDY PROCEDURE

Field Survey Procedures

The sample for the record-check study consisted of about 4,500 households included in the Current Population Survey (CPS). The households were selected in compact clusters averaging seven households throughout the United States.

At each of the households included in the sample a self-enumeration form (PHS-1) was left by the enumerator for each family and unrelated individual (see Appendix II). In Section A of the form the enumerator listed the line number, name, relationship to head of family, and date of birth for each member of the family. Section B consisted of probe questions about all possible kinds of health insurance the family might have. In Section C were detailed questions for the respondent to answer about each health plan claimed. Section D asked for employer and sick-pay information. Finally, Section E requested the assent, by signature of the respondent, to the Bureau's obtaining additional information about members of the family from insurance companies and employers.

Respondents were asked to mail the completed forms to regional offices of the Bureau of the Census and were provided with postage-free self-addressed envelopes. Two reminder notices—Form PHS-2 (identical to PHS-1 with the exception of rewording in the covering letter)—were sent by mail to households that had not re-

turned their forms. If a completed form had not been received at the time of the September 1960 Current Population Survey interview, the CPS interviewer tried to complete the form by visiting the household.

Record Checks

Following the initial processing, precoding, and identification of Blue Cross-Blue Shield and commercial plans, information for checking the reported insurance status of household members to insurance records was transcribed to another form and then forwarded to the Blue Cross-Blue Shield Association and to employers, unions, and other groups who might sponsor group insurance plans. A small subsample of the household members' names was also sent to nearly every commercial and independent carrier in the country, as a means by which individual or family coverage by these carriers could be ascertained. In no case was the carrier or employer informed of what coverage had been reported in the interview. These procedures, of course, were dependent on whether the sample person had granted permission for record checking.

Since the procedural steps followed in the conduct of the study are of limited interest except, perhaps, to those actually involved in the planning of such a study, the detailed description of this phase of the project is presented as supplementary material in Appendix I.

ANALYSIS OF THE DATA

Limitations of Record-Check Studies

In the methodological program of the Health Interview Survey, the record-check study as a method of assessing the accuracy of reported data and of identifying factors related to response errors has been used with limited success. In general, the degree of success in these studies has been dependent on the type of health factor under investigation. Some reasons for their limitations have been described as (1) the difficulties in replicating the procedures and population composition of the Health Interview Survey, (2) inadequacies in the material maintained in the record source, (3) inherent differences in the record information and the knowledge that has been made available to the respondent, and (4) the practice of carrying out a one-directional type of record check. References to the shortcomings of record-check studies as they apply to such health topics as chronic conditions, hospitalizations, and physician visits have been presented in *Vital and Health Statistics*, Series 2, Nos. 6 and 7 and Series 10, Nos. 18 and 19.

In the present study all of these problems were taken into account in setting up the study procedure. To obtain a representative population, the probability sample in the Current Population Survey was used. Record systems used by the insurance companies were investigated during the pilot phase of the study so that the household information could be collected in a format which would be convenient for checking purposes. The survey material was submitted by mail so respondents would have an opportunity to consult other family members and to examine their insurance policies. The procedure called for checking all household information with the record source regardless of whether insurance coverage was reported. However, as mentioned earlier, problems encountered in the record-check phase prevented the full accomplishment of the objectives, despite the careful detail that went into the planning of the study.

Some of the reasons advanced for the inadequacy of the checking procedure were the following:

1. In many cases, policy numbers were not available for checking against insurance company files which were maintained in numerical order rather than alphabetical.
2. Individual policy holders or dependent insureds were oftentimes not identified in group plans.
3. Sufficient staff and time were not always available for thorough checking of insurance files.
4. In instances where permission to obtain insurance information from the employer was not granted by the respondent, coverage status could not be determined for specific employees.

5. Respondents in some cases named employers as the carrier agency, when an employee union was in fact the sponsoring agency (or vice versa).
6. As in all studies where handwritten forms are involved, there was a certain amount of confusion due to incorrect names and addresses.

Allocation of Inconclusive Data From the Blue Cross-Blue Shield Record Check

The outcome of the Blue Cross-Blue Shield record check was inconclusive on hospital insurance coverage for 790, or 17.8 percent, of the households for which respondent data were submitted to the Blue Cross-Blue Shield organization. As shown below, the variation in inconclusive Blue Plan reports was quite marked from region to region:

Region	*Proportion of persons with inconclusive reports*
United States	16.8 percent
Northeast	2.2 percent
North Central	40.8 percent
South	14.0 percent
West	1.1 percent

The reports on surgical and doctor visit insurance coverage showed similar patterns, indicating that the inadequate reports were highly clustered.

Of the 790 forms with inconclusive reports, 561 had no indication of the coverage status from the record source (no check in question 5 on NHS-PHS-2; see Appendix II), nor was the signature of the person responsible for the checking entered in item 8 on the back of the form. On some of the other forms, there was a signature indicating that checking had been done, but there was no conclusive information about the insurance coverage status. On other forms there were notes indicating cancellation of the policy, inability to locate records, or transfer from group to other type of policy, but there was no signature on the form to indicate that the checking process had been completed.

Unfortunately, the tabulation and analysis of the record-check material were not carried out immediately following the receipt of the material from the record sources. This delay made it impossible to recheck the material with the record sources or to determine if the procedures outlined in the study plan had been followed.

Of the 16.8 percent of the persons for whom inconclusive results were obtained from the Blue Cross-Blue Shield record source, a high proportion (16.1 percent of the total records or 96.4 of the "inconclusives") were persons for whom no Blue coverage was reported from the respondent source. As a consequence, a correspondingly high proportion of these records were allocated to the category "no Blue coverage" (according to the record source) in the data-adjustment process used in the study (see Appendix III).

The allocation of inconclusive data is a difficult problem to handle in any statistical study. In a record-check study, the problem is compounded by the presence of such data in both sources, the respondent report and the check source. In the present study, a high percentage of the inconclusives from the check source were among persons for whom no Blue coverage had been reported on the respondent form. In the allocation procedure used in the study, it was assumed that the record search was not properly carried out for these persons; they were therefore allocated to coverage status in the same proportion as those for whom a record search was known to have been made.

If, on the other hand, it is assumed that the record search was carried out but the results were not recorded properly, an imputation procedure more inclined to this assumption would be appropriate. Such a procedure, based on the concept of the "best available response," was developed for comparative purposes during the analysis of the data. In this method of allocation, check-source information was accepted, but where it was not available the respondent information was substituted. Similarly, in cases where respondent data were not available, check-source information was substituted. This latter substi-

Table A. Estimates of hospital insurance coverage using alternative methods of allocating unknown coverage status, by geographic region: United States, 1960

Region	Inconclusive hospital insurance data allocated:		
	Proportionally		According to "best estimate of coverage"
	Respondent report	Check source	Check source
	Percent of persons with Blue Cross-Blue Shield		
United States	27.1	27.9	26.3
Northeast	43.0	41.0	41.0
North Central	29.2	32.7	27.8
South	18.0	19.5	18.9
West	15.7	14.4	14.4

tution was necessary in only a small number of cases. Where a response was not available from either source, the case was in effect regarded as a noninterview and was excluded from the calculation of error rates. While this procedure is biased in some respects, it does minimize the gross error and also the variance of the net error because it treats the inconclusive data as cases of agreement between respondent and check-source reports.

Since a high proportion of the inconclusives were in the check-source data, this alternate method of allocation did not affect the respondent information to any extent. Table A shows its effect on the Blue Cross-Blue Shield check-source data relating to hospital insurance coverage in the four geographic regions.

In the two regions where the amount of inconclusive data was large (North Central and South Regions), the allocation method based on "best estimate of coverage" reduced the rates considerably. In the Northeast and West Regions, where the amount of inconclusive information was negligible, there was no appreciable difference in the coverage rates produced by the alternative imputation procedures.

The material shown in table A exhibits clearly the importance of the imputation procedure and points up one of the reasons why it was considered appropriate to place emphasis in this report on the method of study rather than on the evaluation of the interview survey. It is evident from this table that one method of imputation implies that the estimate of insurance coverage based on interview data was an underestimate of the coverage rate derived from records, while the other method implies an overstatement from the interview data (see table 4).

SUMMARY

The estimates in tables 1-3 show the comparative coverage status of the study group by geographic region according to the respondent and check sources, using the proportional method of adjustment for inconclusive reports. For hospital, surgical, and doctor visit insurance, the gross differences in the two sources (summation of nonmatching records) approximated 11-14 percent for the United States, were slightly higher (14-19 percent) for the Northeast and the North Central Regions, and were considerably lower (6-9 percent) for the South and West Regions (table 4). Among those identified by the Blue Cross organization as insured, 78.9 percent of

Table B. Estimated percent of persons showing disagreement in the respondent report and the check source, by type of coverage: United States, 1960

Type of coverage	Blue coverage reported by respondent report, but not by record source (1)	Blue coverage reported by record source, but not by respondent report (2)	Gross difference rate (1) + (2)	Net difference rate (1) - (2)
	Percent			
Hospital insurance-----	5.1	5.9	11.0	-0.8
Surgical insurance-----	5.4	6.1	11.5	-0.7
Doctor visit insurance-	2.8	10.8	13.6	-8.0

the respondents reported hospital insurance coverage and 75.0 percent reported surgical insurance, but only 20.1 percent reported doctor visit insurance.

An interesting finding relation to doctor visit insurance was that the major source of disagreement between the respondent and check sources was among persons who reported no Blue coverage on the household form, yet were found in the record source to have Blue Plan insurance coverage for doctor visits (see table B).

The percentages shown in columns (1) and (2) of table B represent, in effect, estimates of the amount of underreporting and overreporting that could be expected on insurance coverage in a household survey. When the net difference rate is small, the underreporting is offset by the overreporting, with the gross difference rate serving as a measure of the variance. When the amount of underreporting is disproportionately higher than the overreporting, as is the case for doctor visit insurance coverage, the survey estimate for such an item will be markedly lower than the true estimate.

This finding may explain why the estimates obtained for hospital and surgical insurance coverage from the most recent data collected in the Health Interview Survey (July 1962-June 1963) were not appreciably different from those obtained from some other sources. On the other hand, the estimates for doctor visit insurance were so much lower than those from other sources that separate estimates for this type of health insurance were not published.

The counterbalancing effect of underreporting and overreporting may also shed some light on the fact that one-directional checks (those measuring underreporting only) on other topics, such as the frequency of physician visits, have indicated a marked degree of underreporting in the survey, even though estimates from the survey are quite similar to or even higher than those from certain other sources.

Individual tables showing comparative coverage information from the respondent and record sources (tables 5-7) are summarized and evaluated in table 8. Since the inconclusive check-source reports were allocated independently within geographic regions, recombining the estimates to the total U.S. level will not give the estimates shown in tables 1-3. No appreciable differences were noted in the comparative data for males and females. The net difference rates for hospital insurance indicate that respondent data for persons under 65 years underestimate coverage by a small amount. However, for persons 65 years and over, the respondent reports show an overestimate of coverage when compared with the check source data.

The general purpose of the record-check study was to provide estimates of the underreporting and overreporting of insurance in household interviews. More specifically, its goal was to provide some evaluation of the statistics on health insurance derived from the data collected in the Health Interview Survey during the period July-December 1959. However, the special Current Population Survey interviews conducted in August 1960 produced an estimate of

hospital insurance coverage that was more than 10 percent lower than the 1959 Health Interview Survey estimate. One of the chief contributors to the difference in the estimates derived from the two surveys was the introduction of data collection procedures in the CPS survey which would increase the feasibility of the record check itself. For example, respondents were asked more specific information on coverage—such as the names of insurance plans and companies and the identification of individual policies—than was asked in the Health Interview Survey interview.

The fact that the method of interview was modified to make the record check a feasible undertaking is perhaps the most severe limitation of the project. When added to the other limitations described above, it suggests that, as presently conceived, the record-check approach in this area may be of limited validity. The entire project certainly indicates that when a record-check study is undertaken, consideration should be given to (1) the preparation of procedures which will produce meaningful results, (2) arrangements with the check source that will be carried through to the completion of the study, and (3) a time schedule which is reasonable in relation to the scope of the study and which will maximize the likelihood of continuity of personnel involved in the study.

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DETAILED TABLES

Table 1. Blue Cross-Blue Shield hospital insurance coverage status according to respondent and check-source data, by geographic region: United States, 1960

Region and check-source data	Respondent data		
	All persons	Blue Plan	
		Covered	Not covered
	Percent distribution		
All regions			
All persons	100.0	27.1	72.9
Covered by Blue Plan	27.9	22.0	5.9
Not covered by Blue Plan	72.1	5.1	67.0
Northeast			
All persons	100.0	43.0	57.0
Covered by Blue Plan	41.0	34.5	6.6
Not covered by Blue Plan	59.0	8.5	50.5
North Central			
All persons	100.0	29.2	70.8
Covered by Blue Plan	32.7	24.0	8.7
Not covered by Blue Plan	67.3	5.2	62.1
South			
All persons	100.0	18.0	82.0
Covered by Blue Plan	19.5	14.9	4.5
Not covered by Blue Plan	80.5	3.0	77.5
West			
All persons	100.0	15.7	84.3
Covered by Blue Plan	14.4	12.2	2.3
Not covered by Blue Plan	85.6	3.6	82.0

Table 2. Blue Cross-Blue Shield surgical insurance coverage status according to respondent and check-source data, by geographic region: United States, 1960

Region and check-source data	Respondent data		
	All persons	Blue Plan	
		Covered	Not covered
	Percent distribution		
All regions			
All persons	100.0	23.6	76.4
Covered by Blue Plan	24.4	18.3	6.1
Not covered by Blue Plan	75.6	5.4	70.3
Northeast			
All persons	100.0	36.0	64.0
Covered by Blue Plan	34.4	27.9	6.5
Not covered by Blue Plan	65.6	8.1	57.5
North Central			
All persons	100.0	25.5	74.5
Covered by Blue Plan	28.7	19.6	9.0
Not covered by Blue Plan	71.3	5.9	65.5
South			
All persons	100.0	16.2	83.8
Covered by Blue Plan	17.7	12.8	5.0
Not covered by Blue Plan	82.3	3.5	78.8
West			
All persons	100.0	15.1	84.9
Covered by Blue Plan	13.4	11.2	2.2
Not covered by Blue Plan	86.6	3.9	82.7

Table 3. Blue Cross-Blue Shield doctor visit insurance coverage status according to respondent and check-source data, by geographic region: United States, 1960

Region and check-source data	Respondent data		
	All persons	Blue Plan	
		Covered	Not covered
	Percent distribution		
All regions			
All persons	100.0	5.5	94.5
Covered by Blue Plan	13.5	2.7	10.8
Not covered by Blue Plan	86.5	2.8	83.7
Northeast			
All persons	100.0	8.6	91.4
Covered by Blue Plan	17.2	3.7	13.4
Not covered by Blue Plan	82.9	4.9	78.0
North Central			
All persons	100.0	5.0	95.0
Covered by Blue Plan	18.7	2.5	16.2
Not covered by Blue Plan	81.3	2.6	78.7
South			
All persons	100.0	3.1	96.9
Covered by Blue Plan	9.5	2.0	7.6
Not covered by Blue Plan	90.5	1.2	89.3
West			
All persons	100.0	6.0	94.0
Covered by Blue Plan	5.7	3.0	2.7
Not covered by Blue Plan	94.3	3.1	91.2

Table 4. Indexes of net and gross error[1] among persons reported as having Blue Cross-Blue Shield insurance coverage in respondent report or in check source, by type of coverage and geographic region: United States, 1960

Type of coverage and region	Percent with Blue coverage		Net error indexes		Gross error indexes			Percent classified identically
	Respondent report	Check source	Net difference rate	Index of net shift	Gross difference rate	Index of gross shift	Index of inconsistency	
	$a+c$	$a+b$	$(a+c)-(a+b)$	$\frac{c-b}{a+b}$	$c+b$	$\frac{c+b}{a+b}$	$\frac{c+b}{2(a+b)(c+d)}$	$\frac{a}{a+b}$
	Percent							
Hospital								
All regions----	27.1	27.9	-0.8	-2.8	11.0	39.5	27.4	78.9
Northeast----------	43.0	41.0	1.9	4.7	15.0	36.7	31.1	84.0
North Central--------	29.2	32.7	-3.5	-10.6	14.0	42.7	31.7	73.3
South----------	18.0	19.5	-1.5	-7.7	7.6	38.9	24.1	76.7
West----------	15.7	14.4	1.3	8.8	5.8	40.3	23.6	84.3
Surgical								
All regions----	23.6	24.4	-0.7	-2.9	11.5	47.0	31.1	75.0
Northeast----------	36.0	34.4	1.6	4.7	14.5	42.2	32.2	81.2
North Central--------	25.5	28.7	-3.2	-11.1	14.9	51.9	36.4	68.5
South----------	16.2	17.7	-1.5	-8.4	8.4	47.5	28.9	72.0
West----------	15.1	13.4	1.7	12.5	6.2	46.0	26.6	83.2
Doctor visit								
All regions----	5.5	13.5	-8.0	-59.3	13.6	100.5	58.1	20.1
Northeast----------	8.6	17.2	-8.5	-49.8	18.3	106.6	64.3	21.8
North Central--------	5.0	18.7	-13.7	-73.1	18.8	100.4	61.8	13.2
South----------	3.1	9.5	-6.4	-67.3	8.7	91.6	50.6	20.5
West----------	6.0	5.7	0.3	5.3	5.8	100.9	53.5	52.2

[1]The indexes are based on results of the respondent report and the check source for identical persons. The letters on the following table, which represent proportions of the total civilian, noninstitutional population with a given characteristic, are used to indicate the measures basic to the indexes shown above:

Check source	Respondent report		
	Blue coverage	No Blue coverage	
Blue coverage---------	a	b	a + b
No Blue coverage-----	c	d	c + d
	a + c	b + d	100.0

1. The proportion of persons with Blue coverage according to respondent report is $p_1 = a+c$
2. The proportion of persons with Blue coverage according to the check source is $p_2 = a+b$
3. The net difference rate between the two proportions is $[(a+c)-(a+b)]$
4. The gross difference rate is $g = b+c$
5. The index of inconsistency is $\hat{I} = \left[\frac{b+c}{2(a+b)(c+d)}\right]$
6. The index of net shift is the net difference relative to the check source is $\frac{c-b}{a+b}$
7. The index of gross shift is the gross difference relative to the check source is $\frac{c+b}{a+b}$
8. The proportion classified identically as having Blue coverage is $\frac{a}{a+b}$

Under certain conditions, g (the gross difference rate) is a measure of response variability, and $\hat{I}$ (the index of inconsistency) measures the proportion of the total variability arising from the response variability. These conditions are described in "The Estimates and Interpretation of Gross Differences and the Simple Response Variance," by M. A. Hansen, W. N. Hurwitz, and L. Pritzker, *Contributions to Statistics Presented to Prof. P. C. Mahalanobis on the Occasion of His 70th Birthday,* Oxford, England, Pergamon Press, June 1963.

Table 5. Blue Cross-Blue Shield hospital insurance coverage status according to respondent and check-source data, by sex and age: United States, 1960

Sex, age, and check-source data	Respondent data		
	All persons	Blue Plan	
		Covered	Not covered
	Percent distribution		
MALE			
All ages			
All persons	100.0	27.0	73.0
Covered by Blue Plan	27.7	22.0	5.7
Not covered by Blue Plan	72.3	5.0	67.3
Under 65 years			
All persons	100.0	27.8	72.2
Covered by Blue Plan	28.7	22.8	5.9
Not covered by Blue Plan	71.3	5.0	66.4
65 years and over			
All persons	100.0	19.7	80.3
Covered by Blue Plan	18.5	14.3	4.2
Not covered by Blue Plan	81.5	5.5	76.0
FEMALE			
All ages			
All persons	100.0	27.1	72.9
Covered by Blue Plan	27.0	21.9	5.1
Not covered by Blue Plan	73.0	5.2	67.8
Under 65 years			
All persons	100.0	28.3	71.7
Covered by Blue Plan	28.4	23.1	5.3
Not covered by Blue Plan	71.6	5.3	66.3
65 years and over			
All persons	100.0	17.4	82.6
Covered by Blue Plan	14.9	12.4	2.5
Not covered by Blue Plan	85.1	5.0	80.1

Table 6. Blue Cross-Blue Shield surgical insurance coverage status according to respondent and check-source data, by sex and age: United States, 1960

Sex, age, and check-source data	Respondent data		
	All persons	Blue plan	
		Covered	Not covered
	Percent distribution		
MALE			
All ages			
All persons	100.0	23.7	76.3
Covered by Blue Plan	24.3	18.4	5.9
Not covered by Blue Plan	75.7	5.3	70.5
Under 65 years			
All persons	100.0	24.6	75.4
Covered by Blue Plan	25.2	19.2	6.0
Not covered by Blue Plan	74.8	5.4	69.4
65 years and over			
All persons	100.0	14.4	85.6
Covered by Blue Plan	14.8	10.2	4.6
Not covered by Blue Plan	85.2	4.2	81.0
FEMALE			
All ages			
All persons	100.0	23.6	76.4
Covered by Blue Plan	23.4	18.1	5.3
Not covered by Blue Plan	76.6	5.4	71.1
Under 65 years			
All persons	100.0	24.8	75.1
Covered by Blue Plan	24.9	19.2	5.7
Not covered by Blue Plan	75.1	5.6	69.4
65 years and over			
All persons	100.0	12.6	87.4
Covered by Blue Plan	10.0	8.6	1.4
Not covered by Blue Plan	90.0	4.0	86.0

Table 7. Blue Cross-Blue Shield doctor visit insurance coverage status according to respondent and check-source data, by sex and age: United States, 1960

Sex, age, and check-source data	Respondent data		
	All persons	Blue Plan	
		Covered	Not covered
	Percent distribution		
MALE			
All ages			
All persons	100.0	5.6	94.4
Covered by Blue Plan	13.0	2.8	10.2
Not covered by Blue Plan	87.0	2.8	84.2
Under 65 years			
All persons	100.0	5.9	94.1
Covered by Blue Plan	13.7	3.0	10.6
Not covered by Blue Plan	86.3	2.9	83.4
65 years and over			
All persons	100.0	2.1	97.9
Covered by Blue Plan	6.0	0.5	5.5
Not covered by Blue Plan	94.0	1.6	92.4
FEMALE			
All ages			
All persons	100.0	5.4	94.6
Covered by Blue Plan	12.6	2.7	9.9
Not covered by Blue Plan	87.4	2.8	84.7
Under 65 years			
All persons	100.0	5.8	94.2
Covered by Blue Plan	13.4	2.8	10.6
Not covered by Blue Plan	86.6	3.0	83.6
65 years and over			
All persons	100.0	1.9	98.1
Covered by Blue Plan	4.7	0.9	3.8
Not covered by Blue Plan	95.3	1.0	94.3

Table 8. Indexes of net and gross error[1] among persons reported as having Blue Cross-Blue Shield insurance coverage in respondent report or in check source, by type of coverage, sex, and age: United States, 1960

Type of coverage, sex, and age	Percent with Blue coverage		Net error indexes		Gross error indexes			Percent classified identically
	Respondent report	Check source	Net difference rate	Index of net shift	Gross difference rate	Index of gross shift	Index of inconsistency	
	$\frac{a+c}{}$	$\frac{a+b}{}$	$(a+c)-(a+b)$	$\frac{c-b}{a+b}$	$\frac{c+b}{}$	$\frac{c+b}{a+b}$	$\frac{c+b}{2(a+b)(c+d)}$	$\frac{a}{a+b}$
	Percent							
HOSPITAL								
Male								
All ages-------	27.0	27.7	-0.7	-2.5	10.7	38.7	26.8	79.4
Under 65 years-------	27.8	28.7	-0.9	-3.1	10.8	37.8	26.5	79.6
65 years and over----	19.7	18.5	1.2	6.6	9.7	52.3	32.1	77.2
Female								
All ages-------	27.1	27.0	0.1	0.5	10.3	38.0	26.1	81.2
Under 65 years-------	28.3	28.4	-0.1	-0.3	10.6	37.3	26.1	81.2
65 years and over----	17.4	14.9	2.5	16.6	7.5	50.0	29.4	83.3
SURGICAL								
Male								
All ages-------	23.7	24.3	-0.6	-2.4	11.1	45.8	30.3	75.9
Under 65 years-------	24.6	25.2	-0.6	-2.4	11.4	45.0	30.1	76.3
65 years and over----	14.4	14.8	-0.4	-2.9	8.8	59.5	34.9	68.8
Female								
All ages-------	23.6	23.4	0.1	0.5	10.7	45.8	29.9	77.4
Under 65 years-------	24.8	24.9	-0.1	-0.3	11.3	45.4	30.3	77.1
65 years and over----	12.6	10.0	2.6	25.8	5.5	54.5	30.3	85.7
DOCTOR VISIT								
Male								
All ages-------	5.6	13.0	-7.4	-57.0	13.0	99.9	57.4	21.5
Under 65 years-------	5.9	13.7	-7.7	-56.7	13.5	99.0	57.4	22.1
65 years and over----	2.1	6.0	-3.9	-65.0	7.2	119.0	63.3	8.0
Female								
All ages-------	5.4	12.6	-7.1	-56.9	12.7	100.9	57.7	21.1
Under 65 years-------	5.8	13.4	-7.6	-56.8	13.6	101.3	58.5	20.9
65 years and over----	1.9	4.7	-2.8	-60.3	4.8	102.1	53.6	18.8

[1]See table 4.

APPENDIX I

DETAILED DESCRIPTION OF THE PROCEDURES OUTLINED FOR THE STUDY

Preliminary Processing of Household Data

After the household questionnaires were received in the regional field offices they were forwarded to the Bureau of the Census for screening and precoding. There were seven steps in the preliminary processing:

1. Incoming forms (PHS-1 or PHS-2; see Appendix II) were examined to determine whether more than one form had been left at the household.
2. When there were two or more families in a household, a check was made to ascertain that relationships were to the head of the family and not to the head of the household.
3. The third step was to determine whether plans reported on Section C of the form were Blue Plans, non-Blue but on the universe carrier list, not a Blue Plan and not on the universe carrier list, not identifiable as Blue or non-Blue, or not a health plan at all.
4. The fourth check point was Section C, item 3(d), method of paying premiums. The respondent's answer to this question for each claimed plan was coded according to whether premiums were paid at a place of work, directly to the insurance company, or some other way.
5. Next, Section E of the form was coded according to whether or not it contained the signature (or initials) of the person filling out the form.
6. The sixth precode was to distinguish claimed non-Blue universe plans from other types and individual or family plans from group plans (see the third and fourth steps above). The purpose here was to determine whether a carrier inquiry was to be made.
7. Finally, Section D was examined to determine whether any employers were to be queried. If the person named in Section D was also the policyholder of a Blue Plan in Section C for which premiums were paid at work, and no other plan of a non-Blue type was carried at work by this person, the employer was not checked. If the above was not the case in all respects, Section E was examined for a signature authorizing the necessary record checks to be undertaken. If there was no name or address of an employer in Section D or if "self-employed" was written in, X was entered by the precoder for this item.

Preparation for Record Checks

Blue Cross-Blue Shield.—Blue Plans include any health plans connected to Blue Cross or Blue Shield. The State and local Blue Cross Plans are coordinated by the Blue Cross Association in New York. The local units of Blue Shield are coordinated by the Blue Shield Medical Care Plans organization. For administrative purposes, most Blue Shield Plans are associated with the Blue Cross organization in the same geographic area.

Following the initial processing, precoding, and identification of Blue and commercial plans, a form—Blue Cross-Blue Shield Questionnaire (see NHS-PHS-2 in Appendix II)—was created by the Census Bureau for every known family and unrelated individual in the sample.

This form contained, first, a guarantee of confidentiality. Filled in were the address and control number of the family, the names, relationships, and dates of birth for all family members, and supplemental employment information where applicable and available. There was a coverage question and a place for Blue Cross to mark the persons covered by each certificate issued. On the back of the form were questions dealing with the details of any plans in effect, such as name of subscriber, group or nongroup contract, major medical expense attachment, and benefits for hospital room and board and surgeons' fees in hospital.

An original and two copies of the form were sent to the Blue Cross Association in New York City. On the original and control copy, the Blue Cross or Blue Shield Plan and policy number, if a plan was claimed and such information was given, were recorded for the Blue Cross Association's use in reconciling cases in which a plan was claimed by the respondent and not confirmed by the local Blue Plan organization.

Seventy-eight Blue Cross and fifteen Blue Shield organizations, as well as the Federal Employees

Master Tape at Camp Hill, Pa., were involved in this operation.

Employer, union, or other group.—Employers of persons in the sample were queried to determine whether there was health insurance coverage and whether it was available through the place of employment (Form NHS-PHS-3). In some cases a carrier agency other than an employer (such as a union or other group) might have been mentioned on the reporting form, in which case a query (Form NHS-PHS-1) was mailed to this source.

If a person was self-employed there was no employer inquiry. In addition, when a Blue Plan was carried at work by a person and no other plan of a non-Blue type was carried at work by the same person, there was no employer inquiry.

In instances where permission to check records had been given by the respondent, the form used for employer query (NHS-PHS-3) was similar to the form sent to Blue Cross-Blue Shield, although no supplementary information on the characteristics of the person was supplied and there was an additional question on the method of handling insurance claims (cash indemnity or service). The employer was asked to list dependents covered by the employee's insurance if there was, in fact, coverage.

When permission for record checking had not been given by the respondent, a different kind of form was mailed to employers (or unions or other groups). No mention was made of the employee (or member) by name. The coverage question asked whether health insurance was available to employees. An additional question sought to determine what types of employees were eligible if coverage was not available to all.

Insurance companies.—The record sources were essentially of two types from the point of view of the record check: (1) Those for which there was, in effect, no limitation of the number of cases from the household survey which could be checked. These sources included employers and the Blue Plan organizations. The reason why no limitation was involved for these sources was that the number of persons required to be checked by any one employer or Blue Plan organization was small. (2) Those for which the number of cases that could be checked was sharply limited. These sources included the commercial insurance companies and independent plans. Because these organizations operate in a number or all of the States, any member of the sample could have been covered by a policy issued by any company or plan. It would have been virtually impossible for each of these organizations to check every member of the sample. Thus, only a relatively small subsample could be investigated.

In order to check on coverage claimed by respondents and to check a subsample of the respondents with all commercial and independent carriers for purposes of estimating underreporting, the Universe List of Commercial Insurance Companies was compiled from the 1960 Survey Number of *Accident and Sickness Review* prepared by National Underwriters. It comprised, in general, companies writing more than $500,000 of accident and health premiums during 1959. The Universe List of Independent Medical and Hospitalization Plans comprised, in general, those plans on the master list maintained by the Social Security Administration, Division of Program Research, which had total earned income of over $500,000 during 1959.

A subsample of 200 families was selected from the household sample. Each insurance company was queried about these 200 families as well as any families reporting insurance coverage with the specific company. The company was not informed as to which families reported coverage with the company.

Record-Check Procedure

Blue Cross-Blue Shield.—The Blue Cross Association in New York directed the search by the local Blue Plans for all the families in the sample. The general approach was to query the plan having jurisdiction in the place of employment as a first possibility. The plan in the area of residence was the second primary possibility, although this querying may, in some cases, have been done simultaneously with that in the area of employment.

Early in 1961 the Blue Cross-Blue Shield Questionnaires were mailed to the local plans by the Blue Cross Association. Accompanying the questionnaires was a covering letter which explained to the local plans the purposes and procedures of the Health Insurance Record Check.

The local Blue Cross Plans were requested to investigate the possibility that any member of the family listed on the questionnaire was enrolled, and a thorough search was encouraged. There was also a request for a brief summary of the methods used to complete the search and the time involved. If the local Blue Cross records did not indicate whether the enrollees had Blue Shield as well, the plan was asked to notify the headquarters office so that the local Blue Shield Plan could be requested to undertake a similar investigation.

In addition, the covering letter sought to clarify some of the items on the questionnaire. The local plans were asked to respond not later than February 28, 1961.

During the spring of 1961, the Blue Cross Association created a followup letter and check list to be mailed to the local plans with questionnaires requiring further clarification due to disagreement between the household respondents' answers on the original forms and the answers reported by the local plans.

Prior to commencing the record-check work, the Blue Cross Association anticipated possible problems with certain population groups. These included (1)

dependent children over age 19, (2) areas in which two or more plans had jurisdiction, (3) national accounts, e.g., persons with Blue Cross insurance maintained by large companies to cover their employees throughout the country, (4) coverage maintained by retired and other mobile population groups, and (5) persons residing in Nevada, where no individual Blue Cross policies were available. However, the percentage of those with coverage status undetermined from the record sources was not appreciably higher than comparable percentages in other population segments.

Employer, union, or other group.—Employer Health Insurance Questionnaires (NHS-PHS-3, Appendix II) were sent, in general, to the employers of all working persons except those who claimed only Blue Cross or Blue Shield group coverage. In some cases these forms were sent to unions or other groups if mentioned by the respondent on the form mailed in or by another source in the course of record check.

The letter to the employer (on the front of each form) briefly explained the special health insurance survey and requested that the back of the form be filled in and returned within 5 days. No questions were asked about the methods of investigation used or about files kept by the employers on their employees (if health insurance coverage was available), so no analysis of methodology is possible.

On approximately 3,200 of the 4,500 households in the sample, permission for contacting insurance companies and employers was given; these households were involved in the employer record check. Nonresponse was quite small—less than 100. About 250 forms were sent out on those households where permission for record checking had not been given, and about 240 were returned by the employers.

Insurance companies.—The Health Insurance Carrier Questionnaire (see Appendix II) was used to check on respondents who claimed coverage with a particular carrier on the self-enumeration form and, in addition, to check on a subsample (consisting of 200 households) of the entire sample with all carriers on the universe lists plus 19 nonuniverse plans which were reported by respondents. A letter enclosed with the Health Insurance Carrier Questionnaire explained the Health Insurance Record Check and the questionnaire. In addition, an endorsement of the study in the form of a letter from the general manager of the Health Insurance Association of America was enclosed. A guide was also attached for the insurance companies to follow in determining whether any family members held individual or family health insurance policies.

A similar letter was mailed to the independent plans, and enclosed were endorsements from the president and general manager of the Group Health Association of America, Inc. Also attached was a similar check list for these plans to follow in determining whether persons had coverage.

Matching of Household Forms to Record Source

A limited amount of precoding had been carried out after the initial questionnaires were received from the respondents. The primary purpose of this initial processing was to determine what types of record checks were to be made for each family.

After the record-check work was completed, additional coding was done in preparation for transcription.

The questionnaires were screened and coded as follows:

1. The final status of the schedules was indicated in Section 6 of the form (PHS-1) as follows: no followup required, one mail followup, two mail followups, personal visit required, refused, no one home, moved, no information on control sheet.
2. Each section of the questionnaire (B, C, D, and E) was edited for completeness; "edit failure" meant that the schedule was returned to the field. The results were shown in Section 6 following the final status of the questionnaire.
3. If there was more than one family or unrelated individual in the household, a white index card was attached to the face of each questionnaire bearing the same control number indicating the number of families or individuals involved. The white card facilitated the identification of such cases from among the many questionnaires involved in the survey.
4. The questionnaires selected for the subsample were suitably identified.
5. A two-digit code was assigned to each person shown in Section A of the questionnaire. The first digit reflected claimed insurance coverage for that person in Section C. The second digit represented employer check-source information on the work status of the person at the time of the survey.
6. Section D was partially precoded in the initial processing steps; coding was apparently completed at this time. Some of the codes reflect the results of NHS-PHS-5 (see Appendix II) mailings to get additional employer information from respondents. In addition, the line numbers from Section A were placed under the entries for each person named in Section D in order to simplify identification in the transcription process.
7. The line number of the person named as policyholder and the numbers for other persons covered by each plan in Section C were placed next to each name, again to aid the transcription process.
8. A three-digit code corresponding to the name of the commercial company, independent plan,

Blue Plan, or other insurance carrier claimed in Section C was placed above Question 3-d.

9. Finally, a seven-digit summary code of recheck information obtained from the respondent on Form NHS-PHS-7 (see Appendix II) was entered at the bottom of Section C for each claimed plan. The first digit represented the reason for mailing an NHS-PHS-7. The second digit reflected whether the form was, in fact, mailed. The third digit represented the type of answer reported on the NHS-PHS-7. The fourth digit indicated whether the policy contract numbers reported on the PHS-1 and 2 and the NHS-PHS-7 agreed. The last three digits represented the name of the insurance plan reported on the NHS-PHS-7.

In addition to the coding of the questionnaires received from households, each check-source form was coded.

1. The check-source form number (NHS-PHS-1, 2, 3, or 4) was left unchanged if the form was sent out and returned in a way not included in the variations mentioned below. If the form was not sent out for any reason, the form number was modified to indicate the reason. The basic form number was altered to indicate if the form was sent out but (1) the form was sent in behalf of a policyholder who was not a family member, (2) the form turned up unclaimed coverage in the course of the subsample check, (3) the form was not returned or was undeliverable by the Post Office, (4) the NHS-PHS-5 was the source of the check-source name and address, or (5) the check-source form was completed by the initial sample respondent.
2. For check-source forms sent (or not sent) to employers, the line number of the person about whom the inquiry was made was coded on the form.
3. For forms sent to insurance companies and Blue Cross a code was added indicating whether the form was completed and returned on the first or second attempt, whether it was a dummy substituted for a missing Blue Plan form, whether the company had refused to search its files, or whether the form was not returned at all.
4. On all forms sent out a four-digit code was added indicating whether claimed coverage was confirmed, whether another plan was reported by the check source, what column in Section C of the questionnaire the plan being checked on was claimed, and the name of the company issuing the policy if coverage was confirmed.
5. An additional code was entered on check source forms sent to employers indicating differences in benefits between plans or between persons, and the first and last steps in the chain of check source contacts for this claimed plan.
6. If the check source reported that there was coverage, the line numbers for all family members and other persons, if any, were entered on the form indicating whether the person was the policyholder and whether or not he was covered under the reported plan.

In addition to the coding procedures listed above the coders did a certain amount of consistency checking and made some alterations in the information as reported for transcribing purposes.

When the coding procedures had been completed on the respondent and record data, the forms were sent to the Census Operations Office at Jeffersonville, Ind., for transcription to FOSDIC in preparation for computer processing.

Preparation for Tabulating the Data

Records in the two sets of data, the household information and the record-check material, were transferred to computer tapes. In the rearrangement of the matching records into identical locations on the two tapes, a certain amount of editing was necessary to correct erroneous identifications, to delete records of blank transcription sheets, and to resequence records that were out of numerical order.

An additional edit was performed to determine if all available data for each sample person was on the tapes and if each person was assigned to the appropriate family record. Checking with the Current Population Survey data was necessary to identify families according to color. In order to take advantage of all the information on the source documents in determining the insurance status for the family, printouts were made of all family records with impossible, unknown, or doubtful insurance plan identification codes. The rechecking of these records with the source documents was a painstaking professional review, which utilized all the information on both the respondent and the check-source forms to revise the check-source codes, and all the information of the original respondent forms to revise the respondent codes.

At this point in the processing, a separate record was created for each person in the sample. After 310 noninterview households were removed, the remaining households of the original sample of 4,500 were the basis for 13,377 person-records. A tape was prepared for each of the four major geographic regions. Assigned to each person-record was a poststratified weight constructed from the U.S. civilian, noninstitutional population count (1960 census) by region, color, sex, and age (under 65 years, 65 years and older).

A final examination and recode procedure was performed before actual tabulation of the data was attempted. In the examination phase, incomplete or

superfluous data were identified and correction procedures were implemented within the edit run. In the recode phase, a code was assigned for each of the three types of health insurance (hospital, surgery, and doctor visit) to identify the Blue Plan coverage categories to be used in the tabulations, as follows:

I. Respondent report of insurance coverage
   A. *Covered by Blue Plan.*—Persons reporting one or more Blue policies with specified benefits, with premiums paid through place of work, directly to insurance company, or in some other way.
   B. *Not covered by Blue Plan.*—Persons not reporting Blue Plan or policy of unknown type, but reporting one or more non-Blue Plans; persons not covered by any policy.
   C. *Coverage not determined.*— Persons not reporting Blue Plan, but reporting one or more policies of unknown type; persons who may or may not have been covered by some policy.

II. Record source report of insurance coverage
   A. *Covered by Blue Plan.*— Persons for whom Blue Plans reported coverage; those for whom Blue Plan reports showed noncoverage or were inconclusive, but other sources reported Blue insurance.
   B. *Not covered by Blue Plan.*— Persons for whom Blue Plan reported noncoverage, but there was some other indication of coverage other than Blue insurance or there was no other indication of coverage.
   C. *Coverage not determined.*— Persons for whom Blue Plan report was inconclusive, but there was either some other indication or no other indication of coverage other than Blue insurance.

As previously mentioned, persons whose coverage status could not be determined were distributed in the same proportion as those for whom status was known. The procedures used in adjusting the data, as well as the formulas used in developing the net and gross error indexes, are shown in Appendix III.

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APPENDIX II

FORMS USED IN THE COLLECTION OF DATA IN THE RECORD-CHECK STUDY

FORM PHS-1
(7-6-60)

OFFICE OF
THE DIRECTOR

U. S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
WASHINGTON 25, D. C.

Dear Friend:

The Bureau of the Census is conducting a special survey on health insurance as collecting agent for the U. S. Public Health Service. This study, when combined with other information, will serve to answer important questions about health and medical care in our Nation.

The Census enumerator who called at your household was asked to leave this form in order that all of the family members could take part in answering these questions.

Please mail the completed form within five days. A self-addressed envelope which requires no postage has been provided for your convenience.

The questions inside are about Health Insurance Policies and other Plans that help to pay your medical bills or pay for time lost from work when you are sick. Some Policies you pay for by having the costs taken out of your wages; others you pay for directly to the Company or Plan. Sometimes the employer pays the entire cost of the insurance. **We are interested in all kinds.**

Your cooperation in answering these questions will be a definite public service. The information will be given confidential treatment by the Bureau of the Census and the Public Health Service. Nothing will be published except statistical summaries.

Thank you.

Sincerely yours,

Robert W. Burgess

Robert W. Burgess
Director
Bureau of the Census

CONFIDENTIAL - This information is collected for the U.S. Public Health Service under authority of Public Law 652 of the 84th Congress (70 Stat 489; 42 U.S.C. 305). All information which would permit identification of the individual will be held strictly confidential, will be used only by persons engaged in and for the purposes of the survey, and will not be disclosed or released to others for any other purposes (22 FR 1687).

USCOMM-DC 10310-P60

Budget Bureau No. 41-R1214.4P
Approval Expires December 31, 1960

SECTION A

1. Listed below are the members of your family living here ---

Line No. (a)	Name (b)	Relationship (c)	Date of Birth (Month, Day, Year) (d)

Census Enumerator: Enter names of persons for Section D and fill item 6 (a), (b), (c), or (d), if required, on Page 4.

Please answer the questions in Section "B" below and continue with Sections C, D, and E.

SECTION B

2. Do any of the persons listed in Section A have, or are they covered by, any of the following kinds of Health Insurance Plans ---

Check "Yes" or "No" for EACH part:

a. A Blue Cross or Blue Shield Plan? ☐ Yes ☐ No

b. An Insurance Company Plan that pays for hospital, surgical or other medical bills? ☐ Yes ☐ No

c. A Medical Care Plan run by an employer for whom a member of the family works? ☐ Yes ☐ No

d. A Medical Care Plan run by a union, lodge or fraternal organization to which a member of the family belongs? ☐ Yes ☐ No

e. Any other Medical Care Plan run by a group of doctors, or by a cooperative, where you pay monthly premiums or other regular payments for medical care? ☐ Yes ☐ No

f. Any kind of plan where you pay monthly premiums or other regular payments for dental care? ☐ Yes ☐ No

g. Any other type of Health Insurance Policy or Plan? ☐ Yes ☐ No

- If you have checked "Yes" to any part of question 2, answer the questions in Section C on the next page.
- If you have checked "No" to <u>all</u> parts of question 2, turn to Sections D and E on the back of this form.

Notes:

SECTION C

3. Fill out one column for **each separate Plan** which any member of the family has. Enter the name of the Plan at the top of column. Answer the questions for each Plan in the column in which you have written the name of the Plan. If more than three Plans, use extra sheet of paper to describe additional Plans.

	Health Insurance Plan #1	Health Insurance Plan #2	Health Insurance Plan #3
(a) What is the name of the Plan or Insurance Policy? If Insurance Company Policy, give name of Company and type of Policy.	Name of Plan:	Name of Plan:	Name of Plan:
(b) In whose name is the Plan or Policy listed?	Name of Policy holder:	Name of Policy holder:	Name of Policy holder:
(c) Which members of the family listed in Section A does this Plan cover? Enter names of all persons covered; be sure to enter your own name if the Plan covers you.	Names of all persons covered:	Names of all persons covered:	Names of all persons covered:
(d) Are the premiums paid through your place of work, directly to the Insurance Company, or some other way? Check one box, If "some other way" please explain.	☐ Place of work ☐ Directly to Insurance Company ☐ Some other way:	☐ Place of work ☐ Directly to Insurance Company ☐ Some other way:	☐ Place of work ☐ Directly to Insurance Company ☐ Some other way:
(e) Does this Insurance Policy or Plan: **(1) Cover any part of the hospital costs when a person goes to the hospital?**	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
(2) Cover any part of the costs for the surgeon when a person is operated on?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
(3) Cover any part of the costs when a person goes to the doctor or the doctor comes to the home?	☐ Yes, but only if there was surgery. ☐ Yes, whether or not there was surgery. ☐ No	☐ Yes, but only if there was surgery. ☐ Yes, whether or not there was surgery. ☐ No	☐ Yes, but only if there was surgery. ☐ Yes, whether or not there was surgery. ☐ No
(4) Cover any part of the costs for dentists' services?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
(5) Does it pay you a certain amount of money per day or per week when you are sick and can't work? If "Yes," check one of the boxes below to show type of payment.	☐ Yes ☐ No *Check one:* ☐ Pays extra money when in hospital. ☐ Pays same money whether or not in hospital.	☐ Yes ☐ No *Check one:* ☐ Pays extra money when in hospital. ☐ Pays same money whether or not in hospital.	☐ Yes ☐ No *Check one:* ☐ Pays extra money when in hospital. ☐ Pays same money whether or not in hospital.
(f) Is this Plan or Insurance one of those plans where you pay the first $100 or $300 and then the Plan pays 70 or 80 percent of the rest of the medical expenses? (These Plans are often called "Major Medical Expense" Plans.)	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
(g) Does this Policy cover expenses just for accident or for illness and accidents both?	☐ Accidents only ☐ Illness and accident	☐ Accidents only ☐ Illness and accident	☐ Accidents only ☐ Illness and accident
(h) Does this Policy cover only one or two special diseases such as polio or cancer?	☐ Special diseases ☐ Most illnesses	☐ Special diseases ☐ Most illnesses	☐ Special diseases ☐ Most illnesses
(i) What is the Contract Number or Policy Number? (This number is the one usually printed on the membership card or on the front of the Policy .)	Contract Number:	Contract Number:	Contract Number:

● Turn to Sections D and E on the back of this form.

USCOMM-DC 10310-P60

SECTION D

Answer the questions in Section D for each person whose name appears below:

Names of persons to answer questions 4 and 5 →	Name:	Name:	Name:
4. What is the name and address of the employer (company or business) where this person works? If more than one employer, give name of main employer. If not now employed, give name of last employer.	Name of employer: Address:	Name of employer: Address:	Name of employer: Address:
5. (a) Is this person entitled to any pay from his employer for time lost from work when he is sick?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
If "Yes" **(b) Does this person receive this sick pay under a regular arrangement covering employees working there or is it something the employer makes up his mind about when it happens?** If more than one job, answer for main job. If not now employed, answer for last employer.	☐ Regular arrangements ☐ Other	☐ Regular arrangements ☐ Other	☐ Regular arrangements ☐ Other

SECTION E

In some cases, the U. S. Public Health Service may need to obtain some additional information about the details of Health Insurance Plans from the records of the Insurance Company or from the place where you or members of the family work. Please indicate by your signature below that you would have no objection to this. All such information will be held in strict confidence and used for statistical purposes only.

_____
Signature of person filling this form

Notes

6. TO BE FILLED IN BY CENSUS ENUMERATOR:

(a) Control No.	(b) Mailing Address: House No. Street	
	City	State
(c) Form _____ of _____ Forms	(d) ☐ Mark this box for households noninterview in August because NOH, TA, or OT-OCC.	

Budget Bureau No. 68-6012; Approval Expires March 31, 1961

CONFIDENTIAL - The information below is furnished under the provisions of Public Law 652 of the 84th Congress (70 Stat. 489; 42 U. S. C. 305) which authorizes the National Health Survey. All information which would permit identification of the individual will be held strictly confidential, will be used only by persons engaged in and for the purposes of the survey, and will not be disclosed or released to others for any other purposes (22 FR 1687).

FORM NHS-PHS-1
(9-7-60)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
U.S. PUBLIC HEALTH SERVICE

NATIONAL HEALTH SURVEY

HEALTH INSURANCE CARRIER QUESTIONNAIRE

1. Carrier

2 (a). Family	2 (b). Control No.

3. List of persons recorded as members of this family:

Name of person	Relationship to head	Date of birth			Health insurance coverage ("X" for persons covered)			
					Policy			
		Month	Day	Year	No. 1	No. 2	No. 3	No. 4

ITEMS 4-9 TO BE COMPLETED BY INSURANCE CARRIER

4. Are any of the persons listed in Item 3 covered by any individual or family hospital, medical, or surgical policies issued by you?
(Exclude policies which pay only for accidents or only for dread diseases)

☐ No -- Fill Items 8 and 9 on the reverse of this form.

☐ Yes-- (a) In the listing in Item 3 above, show the coverage of each such policy by marking an "X" in the proper column on the line for each person covered. If the persons covered by the policy are not specifically identified by name, give in the space in Item 7 the rules for determining eligibility of persons.

(b) Add to the listing in Item 3 the names of any persons covered by the policy who are not shown as members of this family.

(c) Describe each policy in Items 5-7 on the reverse of this form, and complete Items 8 and 9.

(FORM CONTINUED ON REVERSE)

USCOMM-DC 11221-P60

5. Description of policy or contract and selected benefits covered for insured persons:

	Policy No. 1	Policy No. 2	Policy No. 3	Policy No. 4
(a) Name of policy or type of contract				
(b) Name of policy holder				
(c) Are benefits paid on a service basis, cash indemnity basis, or both? *(Check applicable boxes)*	☐ Service ☐ Cash indemnity	☐ Service ☐ Cash indemnity	☐ Service ☐ Cash indemnity	☐ Service ☐ Cash indemnity
(d) Is there any "major medical expense" provision in this policy?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

COVERAGE OF SELECTED BENEFITS *(For each policy, check one block for each type of benefit to show whether covered or not covered. Check "covered" if any benefits in the category are covered for the insured persons.)*

	Covered	Not covered	Covered	Not covered	Covered	Not covered	Covered	Not covered
(e) Hospital room and board								
(f) Surgeons' fees in hospital								
(g) Surgical expense in doctor's office								
(h) Physician services in hospital *(Exclude surgery)*								
(i) Physician services either in office, or both home and office *(Exclude surgery)*								
(j) Dentists' services other than oral surgery								

6. If any of the persons shown in Item 3 as covered by a policy are not entitled to all the benefits of the policy checked above, note the exclusions.

Name of person(s)	Policy No.	Benefits not covered *(Indicate type of benefit by letters (d)-(j) as applicable)*

7. Notes

8. Name of person who completed this form	9. Date

FORM NHS-PHS-1 (9-7-60)

USCOMM-DC 11331-P60

Budget Bureau No. 68-6012; Approval Expires March 31, 1961

CONFIDENTIAL - The information below is furnished under the provisions of Public Law 652 of the 84th Congress (70 Stat. 489; 42 U.S.C. 305) which authorizes the National Health Survey. All information which would permit identification of the individual will be held strictly confidential, will be used only by persons engaged in and for the purposes of the survey, and will not be disclosed or released to others for any other purposes (22 FR 1687).

FORM NHS-PHS-2
(9-7-60)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
U.S. PUBLIC HEALTH SERVICE

NATIONAL HEALTH SURVEY

BLUE CROSS - BLUE SHIELD QUESTIONNAIRE

1. Plan

2(a). Family

2(b). Control No.

3. List of persons recorded as members of this family:

Name of person	Relationship to head	Date of birth			Health insurance coverage ("X" for persons covered)			
		Month	Day	Year	Certificate No. 1	No. 2	No. 3	No. 4

4. Supplemental information for employed persons:

Name of person	Name and address of employer

ITEMS 5-9 TO BE COMPLETED BY PLAN

5. Are any of the persons listed in Item 3 covered by any hospital, medical, or surgical contracts or certificates issued by you?

☐ No -- Fill Items 8 and 9 on the reverse of this form.

☐ Yes -- (a) In the listing in Item 3 above, show the coverage of each certificate by marking an "X" in the proper column on the line for each person covered. If the persons covered by the certificate are not specifically identified by name, give in the space in Item 7 the rules for determining eligibility of persons.

(b) Add to the listing in Item 3 the names of any persons covered by the certificate who are not shown as members of this family.

(c) Describe each contract in Items 6 and 7 on the reverse of this form, and complete Items 8 and 9.

(FORM CONTINUED ON REVERSE)

USCOMM-DC 11383-P60

6. Description of certificate and benefits covered for members:

	Certificate No. 1	Certificate No. 2	Certificate No. 3	Certificate No. 4
(a) Name or type of certificate				
(b) Name of subscriber				
(c) Is this a group contract? *(Check one box, and if "group" give name)*	☐ Group: ☐ Non-group	☐ Group: ☐ Non-group	☐ Group: ☐ Non-group	☐ Group: ☐ Non-group
(d) Is there any "major medical expense" attached?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No

COVERAGE OF SELECTED BENEFITS *(For each certificate, check one block for each type of benefit to show whether covered or not covered. Check "covered" if any benefits in the category are covered for the members)*

	Covered	Not covered	Covered	Not covered	Covered	Not covered	Covered	Not covered
(e) Hospital room and board								
(f) Surgeons' fees in hospital								
(g) Surgical expense in doctor's office								
(h) Physician services in hospital *(Exclude surgery)*								
(i) Physician services either in office, or both home and office *(Exclude surgery)*								
(j) Dentists' services other than oral surgery								

7. Notes

8. Name of person who completed this form	9. Date

FORM NHS-PHS-2 (9-7-60)

USCOMM-DC 11282-P60

FORM NHS-PHS-3
(9-28-60)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
U.S. PUBLIC HEALTH SERVICE

NATIONAL HEALTH SURVEY

EMPLOYER HEALTH INSURANCE QUESTIONNAIRE

The Bureau of the Census is conducting a special survey on health insurance for the U.S. Public Health Service.

Certain basic facts about health insurance coverage will come from a survey we have just completed for a national sample of households. However, in order to obtain all the information required as to coverage and benefits, it is necessary that we have additional information from employers to supplement that given by the persons in the survey. We have obtained signed authorizations from the households in the survey to ask employers for this information.

One of your employees:

is in our national sample. Please fill out the information for this person as requested on the back of this form, and return the completed form to us within five days. A self-addressed reply envelope which requires no postage is enclosed for your convenience.

Sincerely yours,

Robert W. Burgess

Robert W. Burgess
Director
Bureau of the Census

CONFIDENTIAL - This information is furnished under the provisions of Public Law 652 of the 84th Congress (70 Stat. 489; 42 U.S.C. 305) which authorizes the National Health Survey. All information which would permit identification of the individual will be held strictly confidential, will be used only by persons engaged in and for the purposes of the survey, and will not be disclosed or released to others for any other purposes (22 FR 1687).

USCOMM-DC 11632-P60

Budget Bureau No. 68-6012
Approval Expires March 31, 1961

1. During August or September 1960 was this employee covered by any hospital, medical or surgical insurance available to your employees?

Exclude Workmen's Compensation and policies which pay only for accidents.

☐ No -- Fill in items 9 and 10 at the bottom of the page and return this form

☐ Yes -- Answer items 2–10 as completely as possible. If there is any information you do not have (for example, because the plan is union-operated), please give in the space in item 8 below the name and address from which the U.S. Public Health Service may obtain that information.

2. Name and address of the plan or insurance company:

3. Was this employee covered under a group contract or an individual policy?

If a group contract, give name of group.

☐ Group contract

_____

☐ Individual policy

4. Does this contract or policy pay benefits on a service basis, a cash indemnity basis, or both?

Check one or both boxes as applicable.

☐ Service basis

☐ Cash indemnity basis

5. Is there any "major medical expense" provision in this contract or policy? (That is, any provision under which you or the employee pay the first $100 or $300 and then the insurance pays 70 or 80 percent of the rest of the medical expenses.)

☐ Yes ☐ No

6. Coverage of selected benefits for this employee:

Check one box for each type of benefit. Check "Covered" if any benefits of the type named can be paid for this employee.

	Covered	Not Covered
(a) Hospital room and board		
(b) Surgeons' fees, in hospital		
(c) Surgical expense in doctor's office		
(d) Physician services in hospital *(Exclude surgery)*		
(e) Physician services either in office, or both home and office *(Exclude surgery)*		
(f) Dentists' services other than oral surgery		

7. Dependents covered by this employee's insurance:

List in the first column below the names of all dependents for whom any benefits can be paid under this contract or policy. Then, in the second column show the benefits covered for each person listed. If the person is entitled to all of the types of benefits as this employee is even though for different amounts, check the box for "same as employee". If there are any types of benefits covered for this employee but not covered at all for the person list these exceptions.

If the dependents entitled to benefits under the policy are not specifically identified by name, give the rules for determining eligibility. (For example, "wife and children under 18 years of age.")

Name of person	Types of benefits covered for this person	
	Same as employee	Exceptions
	☐	
	☐	
	☐	
	☐	
	☐	
	☐	

8. Notes

9. Name of person who filled out this form

10. Date

FORM NHS-PHS-3 (9-28-60) USCOMM-DC 11632-P60

FORM NHS-PHS-4
(1-3-61)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
U.S. PUBLIC HEALTH SERVICE

NATIONAL HEALTH SURVEY

EMPLOYER HEALTH INSURANCE QUESTIONNAIRE

The Bureau of the Census is conducting a special survey on health insurance for the U. S. Public Health Service.

Certain basic facts about health insurance coverage will come from a survey we have just completed for a national sample of households. However, in order to obtain all the information required as to coverage and benefits, it is necessary that we have additional information from employers to supplement that given by persons in the survey.

Please fill out the information requested on the back of this form, and return the completed form to us within five days. A self-addressed reply envelope which requires no postage is enclosed for your convenience.

Sincerely yours,

Robert W. Burgess

Robert W. Burgess
Director
Bureau of the Census

CONFIDENTIAL - This information is furnished under the provisions of Public Law 652 of the 84th Congress (70 Stat. 489; 42 U.S.C. 305) which authorizes the National Health Survey. All information which would permit identification of the individual will be held strictly confidential, will be used only by persons engaged in and for the purposes of the survey, and will not be disclosed or released to others for any other purposes (22 FR 1687).

USCOMM-DC 12878-P60

Budget Bureau No. 68-6012
Approval Expires March 31, 1961

1. During August or September 1960 was any hospital, medical or surgical insurance available to your employees?

Exclude Workmen's Compensation and policies which pay only for accidents.

☐ No -- Fill in Items 8 and 9 at the bottom of the page and return this form.

☐ Yes -- Answer Items 2-6 as completely as possible for each plan available to your employees. Then fill in Items 8 and 9 and return this form. If there is any information you do not have (for example, because the plan is union-operated), please give in the space in Item 7 below the name and address from which the U.S. Public Health Service may obtain that information.

PLAN 1	PLAN 2
2. Name and address of the plan or insurance company:	2. Name and address of the plan or insurance company:
3. Does this contract or policy pay benefits on a service basis, a cash indemnity basis, or both? Check one or both boxes as applicable. ☐ Service basis ☐ Cash indemnity basis	3. Does this contract or policy pay benefits on a service basis, a cash indemnity basis, or both? Check one or both boxes as applicable. ☐ Service basis ☐ Cash indemnity basis
4. Is there any "major medical expense" provision in this contract or policy? (That is, any provision under which you or the employee pay the first $100 or $300 and then the insurance pays 70 or 80 percent of the rest of the medical expenses.) ☐ Yes ☐ No	4. Is there any "major medical expense" provision in this contract or policy? (That is, any provision under which you or the employee pay the first $100 or $300 and then the insurance pays 70 or 80 percent of the rest of the medical expenses.) ☐ Yes ☐ No
5. Coverage of selected benefits: Check one box for each type of benefit. Check "Covered" if any benefits of the type named can be paid under this contract or policy.	5. Coverage of selected benefits: Check one box for each type of benefit. Check "Covered" if any benefits of the type named can be paid under this contract or policy.

	Covered	Not Covered		Covered	Not Covered
(a) Hospital room and board			(a) Hospital room and board		
(b) Surgeons' fees, in hospital			(b) Surgeons' fees, in hospital		
(c) Surgical expense in doctor's office			(c) Surgical expense in doctor's office		
(d) Physician services in hospital *(Exclude surgery)*			(d) Physician services in hospital *(Exclude surgery)*		
(e) Physician services either in office, or both home and office *(Exclude surgery)*			(e) Physician services either in office, or both home and office *(Exclude surgery)*		
(f) Dentists' services other than oral surgery			(f) Dentists' services other than oral surgery		

6. Is this plan available to all your employees? ☐ Yes ☐ No -- Describe the types of employees eligible. For example: "Production workers," "Full-time employees," "Supervisory employees."	6. Is this plan available to all your employees? ☐ Yes ☐ No -- Describe the types of employees eligible. For example: "Production workers," "Full-time employees," "Supervisory employees."
7. Notes	7. Notes

8. Name of person who filled out this form	9. Date

FORM NHS-PHS-4 (1-3-61) USCOMM-DC 12875-P60

FORM NHS-PHS-S
(3-2-61)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
U.S. PUBLIC HEALTH SERVICE

Budget Bureau No. 41-R1214.41
Approval Expires April 30, 1961

NATIONAL HEALTH SURVEY

EMPLOYER HEALTH INSURANCE QUESTIONNAIRE

Dear

The Bureau of the Census is conducting a special survey on health insurance as collecting agent for the U. S. Public Health Service. This study, when combined with other information will serve to answer important questions about health and medical care in our nation.

Last September your household was visited by a Census enumerator and you were asked questions about Health Insurance Policies and other Plans that help to pay your medical bills. Your cooperation in answering these questions was a definite public service.

We find that the Census enumerator failed to obtain the name and address of the employer for the members of your family listed on the back of this form. We are therefore asking that you fill out this information on the back of this form. A self-addressed envelope which requires no postage is enclosed for your convenience. Please mail the complete form within five days.

Your information will be given confidential treatment by the Bureau of the Census and the Public Health Service. Nothing will be published except statistical summaries.

Thank you.

Sincerely yours,

A. Ross Eckler

A. Ross Eckler
Acting Director
Bureau of the Census

CONFIDENTIAL - This information is collected for the U.S. Public Health Service under authority of Public Law 652 of the 84th Congress (70 Stat 489; 42 U.S.C. 305). All information which would permit identification of the individual will be held strictly confidential, will be used only by persons engaged in and for the purposes of the survey, and will not be disclosed or released to others for any other purposes (22 FR 1687).

USCOMM-DC 13837-P61

Answer question for each person whose name appears below:

What is the name and address of the employer (company or business) where this person worked during the WEEK OF AUGUST 7 - 13, 1960?

If more than one employer during that week, give name and address of main employer.

	Name of person, to answer question	Name of employer	Address of employer
1			

	Name of person to answer question	Name of employer	Address of employer
2			

	Name of person to answer question	Name of employer	Address of employer
3			

FORM NHS-PHS-5 (3-2-61)

USCOMM-DC 13827-P61

FORM NHS-PHS-6
(3-24-61)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
U.S. PUBLIC HEALTH SERVICE

Budget Bureau No. 41-R1214.41
Approval Expires June 30, 1961

NATIONAL HEALTH SURVEY

The Bureau of the Census is conducting a special survey on health insurance as collecting agent for the U.S. Public Health Service. This study, when combined with other information will serve to answer important questions about health and medical care in our nation.

Last September your household was visited by a Census enumerator and you were asked questions about Health Insurance Policies and other Plans that help to pay your medical bills. Your cooperation in answering these questions was a definite public service.

To complete our work, we need certain additional information about Health Insurance Policies and other Plans reported for members of your family. We are therefore asking that you fill out this information on the enclosed form. A self-addressed envelope which requires no postage is enclosed for your convenience. Please mail the completed form within five days.

Your information will be given confidential treatment by the Bureau of the Census and the Public Health Service. Nothing will be published except statistical summaries.

Thank you.

Sincerely yours,

A. Ross Eckler

A. Ross Eckler
Acting Director
Bureau of the Census

CONFIDENTIAL - This information is collected for the U.S. Public Health Service under authority of Public Law 652 of the 84th Congress (70 Stat 489; 42 U.S.C. 305). All information which would permit identification of the individual will be held strictly confidential, will be used only by persons engaged in and for the purposes of the survey, and will not be disclosed or released to others for any other purposes (22 FR 1687).

USCOMM-DC 14272 P-61

Budget Bureau No. 41-R1214.41; Approval Expires June 30, 1961

FORM NHS-PHS-7
(3-24-61)

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
ACTING AS COLLECTING AGENT FOR THE
U.S. PUBLIC HEALTH SERVICE

NATIONAL HEALTH SURVEY

HEALTH INSURANCE INFORMATION

INSTRUCTIONS - A separate column on this form is used for each Health Insurance Plan or Policy for which additional information is needed.

In Section A of the column is entered information about the Plan or Policy that was reported in the National Health Survey at your household in September 1960. This information is to show the Plan or Policy for which additional information is needed. Please correct any mistakes in spelling of names of persons we may have made.

Please answer the questions in Section B of the column about the Plan or Policy described in Section A, as of AUGUST - SEPTEMBER 1960.

HEALTH INSURANCE PLAN NO. 1	HEALTH INSURANCE PLAN NO. 2
Section A *(Information reported about Plan or policy in SEPTEMBER 1960)*	**Section A** *(Information reported about Plan or Policy in SEPTEMBER 1960)*
1. Plan or Policy in name of:	1. Plan or Policy in name of:
2. Members of the family shown as covered by this Plan or Policy as of AUGUST - SEPTEMBER, 1960:	2. Members of the family shown as covered by this Plan or Policy as of AUGUST - SEPTEMBER, 1960:
3. Name of Plan or Insurance Policy: ☐ Name not shown	3. Name of Plan or Insurance Policy: ☐ Name not shown
4. Method of payment of premiums: ☐ Place of work ☐ Some other way: ☐ Directly to insurance company ☐ Method of payment not shown	4. Method of payment of premiums: ☐ Place of work ☐ Some other way: ☐ Directly to insurance company ☐ Method of payment not shown
Section B *(Additional information needed about Plan No. 1)*	**Section B** *(Additional information needed about Plan No. 2)*
5. Name of Plan or Insurance Policy: a. Please look at your policy or membership (identification) card and copy the FULL name of the Plan or Insurance Company which issued this policy *(Please print):* What other names appear on the policy?	5. Name of Plan or Insurance Policy: a. Please look at your policy or membership (identification) card and copy the FULL name of the Plan or Insurance Company which issued this policy *(Please print):* What other names appear on the policy?
b. Please copy all the policy numbers or other identification numbers that appear on your policy or membership (identification) card:	b. Please copy all the policy numbers or other identification numbers that appear on your policy or membership (identification) card:
No. on policy (or card) / What is this number? *(For example, "policy number," "certificate number," "control number," etc.)*	No. on policy (or card) / What is this number? *(For example, "policy number," "certificate number," "control number," etc.)*
6. Did the person who carried this policy in AUGUST - SEPTEMBER, 1960 (person named in Item 1 of Section A, above) join this plan or get this policy through a group such as at his place of work, a union, fraternal organization, etc? *(Check "Yes" or "No")* ☐ Yes -- Please give the name of the group ☐ No	6. Did the person who carried this policy in AUGUST - SEPTEMBER, 1960 (person named in Item 1 of Section A, above) join this plan or get this policy through a group such as at his place of work, a union, fraternal organization, etc? *(Check "Yes" or "No")* ☐ Yes -- Please give the name of the group ☐ No

Continue on reverse side of this form

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HEALTH INSURANCE PLAN NO. 3	HEALTH INSURANCE PLAN NO. 4
Section A *(Information reported about Plan or Policy in SEPTEMBER 1960)*	**Section A** *(Information reported about Plan of Policy in SEPTEMBER 1960)*
1. Plan or Policy in name of:	1. Plan or Policy in name of:
2. Members of the family shown as covered by this Plan or Policy as of AUGUST - SEPTEMBER, 1960:	2. Members of the family shown as covered by this Plan or Policy as of AUGUST - SEPTEMBER, 1960:
3. Name of Plan or Insurance Policy: ☐ Name not shown	3. Name of Plan or Insurance Policy: ☐ Name not shown
4. Method of payment of premiums: ☐ Place of work ☐ Some other way: ☐ Directly to insurance company ☐ Method of payment not shown	4. Method of payment of premiums: ☐ Place of work ☐ Some other way: ☐ Directly to insurance company ☐ Method of payment not shown
Section B *(Additional information needed about Plan No. 3)*	**Section B** *(Additional information needed about Plan No. 4)*
5. Name of Plan or Insurance Policy: a. Please look at your policy or membership (identification) card and copy the FULL name of the Plan or Insurance Company which issued this policy *(Please print):* What other names appear on the policy? b. Please copy all the policy numbers or other identification numbers that appear on your policy or membership (identification) card:	5. Name of Plan or Insurance Policy: a. Please look at your policy or membership (identification) card and copy the FULL name of the Plan or Insurance Company which issued this policy *(Please print):* What other names appear on the policy? b. Please copy all the policy numbers or other identification numbers that appear on your policy or membership (identification) card:
No. on policy (or card) / What is this number? *(For example, "policy number," "certificate number," "control number," etc.)*	No. on policy (or card) / What is this number? *(For example, "policy number," "certificate number," "control number," etc.)*
6. Did the person who carried this policy in AUGUST - SEPTEMBER, 1960 (person named in Item 1 of Section A, above) join this plan or get this policy through a group such as at his place of work, a union, fraternal organization, etc? *(Check "Yes" or "No")* ☐ Yes -- Please give the name of the group ☐ No	6. Did the person who carried this policy in AUGUST - SEPTEMBER, 1960 (person named in Item 1 of Section A, above) join this plan or get this policy through a group such as at his place of work, a union, fraternal organization, etc? *(Check "Yes" or "No")* ☐ Yes -- Please give the name of the group ☐ No

Notes

Name of person who filled out this form	Date	FOR CENSUS OFFICE USE Control No.

APPENDIX III

ALLOCATION OF UNKNOWN DATA

An illustration of the proportional method of allocating records for which insurance coverage could not be determined in the respondent and/or the record source is shown below:

Record source \ Respondent	Blue coverage	No Blue coverage	Coverage undetermined	
Blue coverage	A	B	G	A+B+G
No Blue coverage	C	D	H	C+D+H
Coverage undetermined	E	F	J	E+F+J
	A+C+E	B+D+F	G+H+J	[1]100.0

↓

Record source \ Respondent	Blue coverage	No Blue coverage	
Blue coverage	a	b	a+b
No Blue coverage	c	d	c+d
	a+c	b+d	100.0

Where $a = \left[A + \frac{EA}{A+C} + \frac{GA}{A+B} \right] \frac{1}{1-J}$ $\quad b = \left[B + \frac{FB}{B+D} + \frac{GB}{A+B} \right] \frac{1}{1-J}$

$c = \left[C + \frac{EC}{A+C} + \frac{HC}{C+D} \right] \frac{1}{1-J}$ $\quad d = \left[D + \frac{FD}{B+D} + \frac{HD}{C+D} \right] \frac{1}{1-J}$

[1] In assigning poststratified weights to persons in the sample, a common factor was applied to all weights to make the total persons sum to 100 percent. As a consequence, all tables can be read directly as proportions of the total civilian, noninstitutional population with a given characteristic.

For example, the following tables show hospital insurance coverage status where the proportional method of allocation has been used:

Check source \ Respondent report	Total persons	Blue coverage	No Blue coverage	Coverage undetermined
Total persons	100.0	26.8	72.4	0.8
Blue coverage	25.7	21.3	4.2	0.3
No Blue coverage	57.5	5.0	52.2	0.4
Coverage undetermined	16.8	0.5	16.1	0.1

↓

Check source \ Respondent report	Total persons	Blue coverage	No Blue coverage
Total persons	100.0	27.1	72.9
Blue coverage	27.9	22.0	5.9
No Blue coverage	72.1	5.1	67.0

Significant indexes of net and gross errors have been derived from the tables in the following manner:

Record source \ Respondent	Blue coverage	No Blue coverage	
Blue coverage	a	b	a+b
No Blue coverage	c	d	c+d
	a+c	b+d	100.0

	Net error indexes		Gross error indexes			Proportion classified identically
	Net difference rate	Index of net shift	Gross difference rate	Index of gross shift	Index of inconsistency	
Covered by Blue Plan	$(a+c)-(a+b)$	$\frac{c-b}{a+b}$	$b+c$	$\frac{b+c}{a+b}$	$\frac{b+c}{2(a+b)\ (c+d)}$	$\frac{a}{a+b}$

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