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VITAL and HEALTH STATISTICS

DATA EVALUATION AND METHODS RESEARCH

International Comparisons of Medical Care Utilization

A Feasibility Study

A study to test the feasibility of applying epidemiological methods based on scientific sampling survey techniques to cross-national research on medical care utilization.

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

This report describes an international feasibility study of medical care utilization, undertaken jointly by research teams in the United States, Yugoslavia, and the United Kingdom from 1964 to 1966. The groups involved were representatives of the Federal Institute of Public Health, Belgrade, Yugoslavia; the Medical Care Research Unit, University of Manchester, Manchester, and the Institute of Community Studies, London, England; the Department of Community Medicine, University of Vermont, Burlington, the Department of Medical Care and Hospitals, The Johns Hopkins University, Baltimore, and the National Center for Health Statistics, Public Health Service, U.S. Department of Health, Education, and Welfare, Washington, D.C., United States.

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National Center for Health Statistics, Survey Research Center, University of Michigan, Ann Arbor); and from the World Health Organization, R. F. Bridgman, M.D. (participant observer).

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Additional costs of travel to conferences, consultant service, and computer work were absorbed by the National Center for Health Statistics apart from the support provided by the research agreement with the Yugoslavia Federal Institute of Public Health. Each of the collaborative institutions contributed substantial support to the study by furnishing personnel, facilities, and a variety of services not financed by the explicit grants.

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THIS NEW REPORT from the National Center for Health Statistics describes a research undertaking to test the feasibility of epidemiological methods in a scientific sample survey to produce data on medical care utilization from which valid comparisons could be made between three different countries having different customs, systems of medical care, and demographic characteristics. This study was conducted jointly by research teams in the United Kingdom, the United States of America, and Yugoslavia. Identical procedures were used to simultaneously collect medical care utilization data on three carefully defined populations, one community in each country. Utilization of services from doctors, dentists, nurses, and other providers of care was the dependent variable, which was studied in relation to independent variables such as demographic factors, selected measures of perceived morbidity, the extent and accessibility of medical care personnel and facilities, and the people's attitudes toward medical care. Structured household interviews were conducted in a probability sample in each area of approximately 300 households, comprising about 1,000 persons. The report describes the conduct of the study, gives the findings and conclusions together with summary tables incorporating standardized rates.

In spite of substantial differences in ways of life, organization of health services, and reported morbidity and disability, people in the three study areas appear to consult doctors in much the same way, while patterns of hospital utilization vary substantially. Also, the amount of consultation for curative services is apparently unrelated to the supply of doctors in the three areas.

The research findings exhibit reassuring internal consistency. The independent validations done for certain parts of the interview information indicate satisfactory consistency between the interview data and other sources. The study concludes that epidemiologic methods employing household interviews are feasible in international and regional studies of medical care utilization.

SYMBOLS

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Quantity more than 0 but less than 0.05----	0.0
Figure does not meet standards of reliability or precision-----	*

INTERNATIONAL COMPARISONS OF MEDICAL CARE UTILIZATION

A FEASIBILITY STUDY

Kerr L. White, M.D., and Jane H. Murnaghan, B.A.¹

INTRODUCTION

Although the levels of economic development and scientific progress may be similar in a number of countries, it does not necessarily follow that their medical care systems are also similar, because the pattern of medical care in any one country is ultimately determined by its unique combination of political, social, and cultural forces. The study and comparison of medical care systems under differing circumstances can be of great value to the administrators, planners, and investigators of health services.

Comparison cannot be attempted, however, until the systems in the respective countries or regions have been defined in terms of an acceptable yardstick or common frame of reference. One approach to this problem is to measure and define the utilization pattern of a medical care system. The utilization pattern is not only determined by the extent of need to prevent or cure illness, but is also influenced by economic, social, educational, and cultural factors, as well as by the methods of payment, the organization, and the attitudes of the purveyors of medical care.

The traditional measurement of utilization has centered on the records of health services

facilities, such as hospitals and clinics; however, these records do not reflect the entire range of medical services utilized by a defined population. A household survey must be undertaken in order to obtain relatively complete estimates for large general populations. Areas which should be surveyed are physician visits, which are not recorded in all countries; information on the level of morbidity, complaints or conditions for which medical care is sought, deferred, or not utilized at all; and the attitudes and satisfactions associated with medical care.

Studies of medical care utilization at the national level had been conducted in several countries in the 1950's, while active interest in research in this subject at the international level was stimulated by the World Health Organization. By 1963 medical care investigators in several countries were seriously considering an undertaking that would allow international comparison. The interest and ideas, as well as preliminary financial commitments, were formally exchanged at a meeting in Belgrade, Yugoslavia, in April 1964. Concrete plans were made for a feasibility study to prepare the way for future research of differential utilization of medical care facilities.

This report describes the main features of the feasibility study that resulted from the Belgrade meeting. It is the work of a group known as the Committee for the International Collaborative Study of Medical Care Utilization, representing 20 senior investigators and eight institutions in

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three participating countries—the United Kingdom, Yugoslavia, and the United States. The investigation was a unique experience in intense scientific collaboration between representatives of a variety of disciplines in several different countries. Apart from the specific contributions, the study paid intangible dividends in the intellectual stimulation, understanding of national and cultural differences, and the remarkable *esprit de corps* that developed within the committee.

The prime objective of the study was to ascertain whether valid, reliable, and comparable data on the use of doctors' and nurses' services and on hospitalization among a defined population during a given period of time could be collected simultaneously in several settings by standardized epidemiological procedures. In addition, as a corollary to this objective, certain important factors affecting utilization were selected and investigated as independent variables of utilization. The principal variables chosen for this purpose were demographic characteristics, selected measures of perceived morbidity, the extent and accessibility of medical care personnel and facilities, and the population's attitudes and satisfactions with the care received.

The compromises and decisions involved in defining the objectives of the study and the planning and organization for achieving those objectives are described in the following section.

The principal method employed to measure the utilization of medical care services was the household interview administered to a probability sample of about 300 households, or approximately 1,000 individuals, in each of three small areas in Northwest England, Serbia, Yugoslavia, and Vermont in the United States. The sampling designs and other aspects of the field work are summarized in the section titled "Field Work."

The specific information collected in the study and the summary tables showing sample frequencies and standardized rates with their standard errors are discussed under "Survey Results" followed by the conclusions. Twenty-three detailed tables, including population rates and additional sample frequencies, and an appendix presenting the questionnaires conclude the report.

On the basis of the feasibility study, the committee has concluded that epidemiological methods employing household interviews are suitable for arriving at useful and valid international

and regional comparisons of medical care utilization. Many of the variables were found to be comparable, although some require further refinement to achieve maximum comparability between the study areas. Encouraged by the success of the pilot study, the committee has revised the methods and questionnaires and expanded the scope of its activities to encompass 11 study areas in seven countries—Argentina, Canada, Finland, Poland, the United Kingdom, the United States, and Yugoslavia.

GENERAL PLANNING AND SURVEY DESIGN

OBJECTIVES

At the first conference held in Belgrade, April 14-20, 1964, the three countries represented—Yugoslavia, the United States, and the United Kingdom—agreed to undertake what was described in the minutes as "a modest program to permit methodological investigation and provide preliminary data ... as a first step towards planning more ambitious studies." The long-range objective was to explore the problems in obtaining comparable data on the utilization of medical care in the three countries and to examine the extent to which certain factors affecting utilization of medical care are or are not common to all three countries, and thus, eventually to examine associations between these factors and the methods of organizing medical care.

In order to achieve the objectives established at the first conference and to accommodate new participants, it was essential to come to grips with three major issues. The fact that no one was totally pleased or displeased with the decisions reached by the group suggests that a true consensus was achieved by the agencies, institutions, and individuals who collaborated in the enterprise.

Focus of the Study

The framework that guided discussions and planning included the following elements of the medical care process:

Need for medical care.—This includes "medical" needs as determined by physical examinations, screening tests, and interviews,

and "social" needs as determined by lay groups and society.

Attitudes and expectations about medical care.—This includes the personal, familial, and cultural factors that condition the demand for and the acceptance of medical care.

Demand for medical care.—The actual or potential expressed wish or request for medical care.

Utilization of medical care.—The actual use of services whether needed or not in the eyes of the health professions, including hospital and ambulatory care and professional, paramedical, and quasi-medical services.

Satisfaction with medical care.

Outcome of medical care.—End results of the quality of care.

There was great interest on the part of certain participants in assessing need and outcome and on the part of others in assessing attitudes and expectations. The final compromise placed the main emphasis on utilization with subsidiary interest on demands, attitudes, and satisfactions. There was little emphasis on need or on outcome. The rationale behind this decision was that (1) the appraisal of utilization was likely to be supported by the "hardest" data most susceptible to validation and (2) if one could not feel reasonably confident about the comparability of utilization data and about the existence of true similarities and differences between countries, there was little basis for examining possible explanations for any differences observed.

Nature of the Study

Three types of studies were considered—descriptive, analytical, and hypothesis-testing. At the descriptive level the proposed study held little of interest for many of the participants. Others argued that until it had been demonstrated that reliable and comparative data could be collected, it was premature to encourage extensive analysis of the data or to undertake a study in which hypothesis-testing of sociological variables was a prominent consideration. At the

other end of the spectrum were those who believed that the testing of hypotheses was the best method to advance the field and insure rigor in the methods used, and that a cross-national study afforded an unusual opportunity to examine certain hypotheses of great interest to social scientists, particularly attitudinal and familial determinants of medical care utilization.

In the end, the major emphasis was placed on a modified analytical study, with the statement of a number of hypotheses that were not to be tested in the formal sense, but were designed to sharpen the direction and specificity of the study and to gain experience for later full-scale studies. The following are some initial hypotheses developed for this purpose.

Basic Postulate

The use and nonuse of health services in a defined population varies with (1) perception of the symptom and conditions or health situation for which use or nonuse occurs; (2) demographic characteristics; (3) the accessibility of physicians, nurses, other health workers, and hospital and nursing-home beds available to that population; and (4) respondents' selected perceptions of, and attitudes toward, their personal physicians.

Hypothesis 1

The physician consultation rate per 1,000 population per unit time of a defined population varies directly with the number of physicians per 1,000 population.

Hypothesis 2

The physician consultation rate per 1,000 population per unit time of a defined population varies inversely with the travel time required to contact a physician.

Hypothesis 3

The proportion of persons in a defined population not consulting a physician for "certain conditions" that can be alleviated through such consultation varies directly with the degree of coverage of medical and hospital insurance.

Hypothesis 4

The proportion of persons in a defined population not consulting a physician for "certain

conditions" that can be alleviated through consultation is related to the patients' and families' expectations about medical treatment.

Hypothesis 5

The physician consultation rate per 1,000 population per unit time varies in a different way in the three countries and varies directly with the amount of education received.

Finally, it was agreed that each area could use additional short questionnaires to gather data of particular interest to it. In point of fact this was done in two areas.

Method of Tabulation and Analysis

The third area of discussion concerned the extent to which the computer was to dictate the approach to the tabulation and analysis of the data. Under ordinary circumstances it would have been desirable to examine the raw frequency distributions of the responses to the questionnaire items before deciding upon the cross-tabulations. Such an approach would delay the analysis and would run the risk that errors in the punched cards both within and between countries would only be detected late in the whole process.

An additional consideration was the extent to which the raw sample frequencies would be published in contrast to the population estimates based on expansion of data for individual cells which took into account both sampling fractions and nonresponse. There were strong feelings that the possibilities of further cross-tabulations as well as the precision of the data could best be determined if raw sample frequencies were available. On the other hand, it was felt that because a defined population was being studied, population estimates and rates accompanied by their standard errors to indicate their reliability were the most suitable and useful figures for presentation, and further, that sample frequencies would be misleading in cases like Chester, England, where the nonresponse rates proved to be relatively high and varied in different age and sex groups. The expanded population estimates and rates could be adjusted to allow for these differences, but the expansion factors varied widely for different age and sex groups; from 1

in 60 to 1 in 110, instead of the total 1 in 92 factor. Thus sample frequencies could not readily be converted to population figures, and showing two sets of figures could be confusing. In this report both sample frequencies and population estimates, together with certain standardized rates and standard errors, are published.

A further policy decision concerned the extent to which urban-rural categories should be used in tabulating and analyzing the survey results. The difficulty arose from the fact that the term "rural" did not have the same meaning for the study populations in the United Kingdom and the United States as it did for the population in Yugoslavia. This was due to the fact that the population in the United States and the United Kingdom usually were not dependent on agriculture for their support and frequently commuted to urban areas for their livelihood. To approach comparability, the Chittenden unit planned originally to allocate one-third of each of their sampling units to rural farm households, rural nonfarm households, and urban households. However, the final decision was to postpone rural-urban comparisons between the three areas until more experience had been gained from the feasibility study.

It was agreed to structure the final tabulations in forms that recognized traditional influences on medical care utilization. Data would be presented by urban, rural, and total population categories, and by sex and major age breaks. Most analyses would be done in terms of "persons" as the basic count. Raw sample frequencies, expanded population frequencies, rates per 1,000 for the individual area population, and rates per 1,000 standardized to the Swedish midyear population of 1962 would be published.

Magnetic tapes were prepared at the National Center for Health Statistics where the programming and tabulation were completed. Tapes, printouts, and tables were made available to each agency or institution for additional analyses.

ORGANIZATION

No formal organization was set up beyond designating a general chairman and at least one individual in each study area who would assume primary responsibility and devote the major part

of his research efforts to the project. The entire exercise was notable for its flexibility, permitting the participants to consult each other directly in any combination dictated by the problem at hand, unhampered by a fixed chain of command or protocol.

The study required the collaboration of experts in a number of fields; represented on the committee were physicians, statisticians, sociologists, and psychologists, and they were assisted in the field by numerous specialists in sampling and computer techniques. No one country or group of experts possessed a monopoly of skills or knowledge necessary for the study; the project can be truly characterized as both interdisciplinary and international.

Prompt and thorough communication was achieved through eight 1-week working conferences and six additional visits by members of the team, together with extensive use of conference minutes, memoranda, correspondence, reports, numerous cables, and 10 transatlantic telephone calls. Special mention should be made of the use of itinerant consultants who played an extremely important role in solving problems in the field and in insuring comparability in the interviewing and coding.

At the outset 1 year was thought to be enough for preparation, field work, and analysis; in the end over 2 years were required. Even so, a superhuman effort was made by some of the members and field workers to meet the schedule.

General planning, sampling procedures, and preparation of the questionnaires and Interviewers' and Coders' Manuals required the better part of a year. Field work was conducted in May, June, and July of 1965. Punchcard layouts, dummy tables, and the computer program were prepared in the spring and summer of 1965. Editing, coding, key punching, and verification were completed by September 1965 and the cards sent to the National Center for Health Statistics. Final tabulations were examined at a conference in April 1966; from these, the tables in this report have been prepared.

STUDY AREAS

It was agreed by the committee that the study areas for the pilot project would be limited

to regions with populations in the range of 70,000 to 90,000, although it was clearly recognized that there is an inherent disadvantage in any small study area, especially when the health services available to a defined population constitute one of the variables under investigation.

The study areas agreed upon were:

United Kingdom: Chester, Cheshire County, England (Population, 87,592 in 1961)

United States: Burlington, Chittenden County, Vermont (Population, 74,425 in 1960)

Yugoslavia: Smederevo, Smederevo Commune, Serbia (Population, 83,862 in 1961)

These communities were chosen because they: (1) were of the appropriate size, (2) constituted medical catchment² areas that were fairly well circumscribed geographically, (3) had both rural and urban components with one town of 25,000 or more, (4) contained or were close to a medical center, and (5) were within reasonable distance (40 miles) of the investigators' institutions in each country.

Population estimates for the noninstitutionalized residents of the three sample areas by age, sex, and urban-rural classification are given in table 6.

Chester

The Medical Research Unit of the University of Manchester was already committed to an investigation involving household surveys for the Liverpool Regional Hospitals Board and planned to integrate the Liverpool study with the international collaborative study. Chester City combined with Chester Rural District was the only area within the Liverpool Hospitals Board region meeting the agreed specifications. Chester City, with a population of 59,268 in the 1961 decennial census, is situated in the Cheshire plain across

²A geographic territory, the great majority of whose population obtains its medical services within that territory

the River Dee from Wales and is 18 miles from Liverpool and 38 miles from Manchester which are both medical centers. It is surrounded by good dairy farming country for which it acts as a market center.

The Chester Rural District surrounds the city for three-quarters of a mile of its perimeter, the remaining one-quarter being adjacent to Wales across the Dee. The maximum dimensions of the rural district are 12 by 10 miles. The population in 1961 was 28,300. It is made up of 51 parishes of which three have no inhabitants and only six have more than 1,000 inhabitants. The district is a local administrative one within the county of Cheshire and has its own complement of administrative, health, and welfare people. The area is good farming land; however, it is becoming increasingly suburbanized and its population is growing at a faster rate than that of the city; only 6 percent of the residential accommodation is rated as being occupied by agricultural workers.

The city and rural districts together are comparatively wealthy, with average individual and household incomes well above the national average and above the average in other parts of the Liverpool Hospitals Board region.

Chittenden

Chittenden County, with a population of 74,425, of which 20,838 was rural according to the 1960 census, occupies a central location on the eastern shore of Lake Champlain in the long narrow valley with the Adirondack Mountains to the west and the Green Mountains to the east. It is an important educational, agricultural, and year-round recreational center. Burlington is the major city in the county and also its medical center. Burlington is the largest port on the eastern shore of Lake Champlain, is connected by ferry with the New York side of the lake, and is the meeting point of the main north-south route along the east side of the lake and the route across the mountains to the east. This strategic location has added greatly to its industrial and commercial prosperity.

The obvious advantage of Chittenden County as a study area was its accessibility to the unit from the University of Vermont, which is in

Burlington. The mountainous terrain, sparse distribution of population in some areas, and a high number of seasonal residents posed special sampling and interviewing problems.

Smederevo

The predominately urban commune of Smederevo (39,793 in the 1961 census) was combined with its rural subregions, Saraorci and Mala Krsna (44,069), to form the study area in Yugoslavia. Smederevo is situated on the Danube, 30 miles southeast of Belgrade, the nearest medical center. It is a noted historical town of tourist interest, famed for its vineyards and orchards. In contrast to the other two study areas, the rural population of the Smederevo area is largely engaged in farming; living conditions are more primitive and some of the remote villages are inaccessible by vehicle during heavy rains.

The disadvantage of choosing Smederevo was that a certain proportion of the population obtains medical care at a neighboring town just outside the study area, so that it is probably less self-contained in this respect than the other study areas. The advantages were that (1) it is not atypical of the country as a whole, (2) it contains a sufficient proportion of working population to provide an insight into utilization of medical care by that category of insured people (a point of special interest to the Belgrade unit), (3) the accessibility and distribution of health personnel within the study area varies considerably, permitting internal comparisons of the influence of these factors on utilization, and (4) it was close enough to Belgrade to simplify communications and staff problems and to keep down expenditures.

DEVELOPMENT OF QUESTIONNAIRES

The interview questionnaires drew heavily on the experience of the U.S. National Health Survey and on other questionnaires developed by members of the group. A separate but similar questionnaire was constructed for children. The questionnaires were designed to permit two independent coding operations on the form, except for the coding of certain tabular material, for which separate code sheets were used.

Four different approaches to the problem of relating utilization of medical care services to the level of morbidity of the population were incorporated in the questionnaires: measures of reported general morbidity in the population; measures of more specific morbidity as reflected by reported prevalence of certain "symptom-condition" complexes recently associated with "great discomfort" (table A); measures of relatively stable objective "indicators" of morbidity, such as reported selected visual impairments; and measures of "activity limitation" and "bed disability."

The utilization measures employed were doctor consultations, nurse consultations, and hospital and nursing home admissions. All measures were for a 2-week-recall period except those on general morbidity and eye examination, which were for a 12-month-recall period, and hospitalization, which was recorded for a recall period of 16 to 18 months but tabulated for only a 12-month period. Related topics, such as the availability of "personal" doctors, the patients' attitudes and satisfaction with the care received, and the use of drugs, were also investigated.

The desire to achieve comparable data from respondents of three different nationalities re-

quired unusually careful attention to the phrasing of questions and to the definition of terms. The questionnaires, together with the Interviewers' Manual and a Coders' Manual, were translated into Serbo-Croatian. Independent translations back into English by two persons unfamiliar with the questionnaires, including one unfamiliar with medical terminology, revealed almost complete comparability. Two questions (Q. 1.1 and Q. 31.2) had to be omitted from the final Serbo-Croatian version, since the pretesting showed that the Yugoslav respondents understood them in a different way than originally meant. For the same reason, several categories of health workers that do not exist in Yugoslavia were omitted as well. The inadvertent omission of part of one "symptom-condition" complex probably resulted in the underreporting of one condition (diarrhea) in adults in Smederevo (table A).

Two pretests of the questionnaires in each study area, with subsequent revisions, preceded the final field work.

The English version of the household folder, the adult questionnaire, and the child questionnaire are reproduced in appendix I of the report. Appendix II presents technical notes on statistical procedures.

Table A. Selected "symptom-condition" complexes for adults and children¹

Adults	Children
1. Rupture or hernia	1. Rupture or hernia
2. Varicose veins	2. Whooping cough
3. Unusual shortness of breath, wheezing, or cough	3. Unusual shortness of breath, wheezing, or cough
4. Frequent stomach trouble, vomiting, or diarrhea	4. Frequent stomach trouble, vomiting, or diarrhea
5. Repeated attacks of backache, back-strain, lumbago, or sciatica	5. Measles (regular or German)
6. Repeated attacks of rheumatism, arthritis, or other joint pain	6. Chickenpox
7. Frequent nervousness, worry, depression, or trouble sleeping	7. Burn or scald
8. Skin rash	8. Skin rash
9. Boils	9. Boils
10. Hemorrhoids or rectal bleeding	10. Joint pain
11. Frequent sore throats or colds	11. Frequent sore throats or colds
12. Frequent severe headaches	12. Frequent severe headaches

¹See conditions listed in adult and child questionnaires, appendix I, pages 62 and 70, table III.

FIELD WORK

SAMPLING DESIGN

Special requirements and local conditions, including the availability of census and other sampling information, dictated the choice of different sampling designs and sampling fractions in each of the three study areas. The one overall requirement was that the samples be true probability samples of approximately the same number of households. In Chester, a random sample based on the real estate tax rolls was used and the sampling fraction was 1/92; in Smederevo, a two-stage stratified sample was drawn from electoral rolls and a special urban household census and the sampling fractions were 1/66 for the urban population and 1/83 for the rural; and in Chittenden, area sampling was employed with a sampling fraction of 1/66. Residents of institutions, including general hospitals, were excluded from the sample.

Population estimates and sampling characteristics are summarized in table B.

Chester

It was agreed internationally that the sample chosen would be a household sample and not a sample of individuals. The best and simplest form from which such sampling may be done in the United Kingdom is from the rating lists of each administrative district. A sample drawn from the rating lists contains not only houses, flats, and other places where people live, but also other ratable units such as warehouses, workshops, and garages. The proportions of each

are published annually and it is possible by taking a large enough sample of ratable units to achieve the number of households required.

The international agreement at the time the sampling was drawn in Chester (in February 1965) was that 200 households would be sampled in the urban area and 100 in the rural area. According to the latest proportions published (April 1964), 85.2 percent of the ratable units were domestic units in Chester City and 89.2 percent in Chester Rural District. This meant that 234 ratable units would need to be drawn to produce 200 dwelling units in the city, and 111 ratable units in the rural district to produce 100 dwelling units. Further allowance was made in the city for an estimated 800 demolished ratable units still on the lists by adding nine to the sample. In the rural district there were practically no demolished houses on the lists, but between 200 and 300 additional houses had been added since the 1964 count; accordingly the number of ratable units to be sampled in the rural district was not changed.

A systematic sample was drawn from each of the rating lists; the sampling ratio in the city was every 95th unit; and the sampling ratio in the rural district was every 90th unit. Random numbers were used to start the sampling in each case (25 and 17, respectively). At the conclusion of drawing, the sample had 243 ratable units in the city and 107 in the rural district. The description of the units showed that of these, 212 in the city and 95 in the rural district should be dwelling units.

The interviewers found that 12 units in the city and one in the rural district had been demolished or were vacant awaiting demolition.

Table B. Noninstitutional population estimates and sample characteristics for the study areas

Area	Estimated population	Sampling fraction		Sample size	Percentage interviewed
		Urban	Rural		
Chester, U.K-----	81,790	1:92	1:92	890	87
Smederevo, Yug-----	90,370	1:66	1:83	1,198	98
Chittenden, U.S.A-----	73,800	1:66	1:66	1,118	97

This left 200 dwelling units in the city and 94 in the rural district at which interviews could be hoped for; the total in the sample was therefore 294. In addition, however, four units were vacant throughout the time of the survey, three in the city and one in the rural district, so that the sample denominator used in assessment of results was 290 household units (table C).

Validation of the sample with the electoral lists compiled in October 1964 showed that 86 percent of the adults 21 years or over in the sample were on the lists at the same address.

The sampling frame used is readily accessible and is often chosen by the British Social Survey (the major household interviewing organization in Britain), so that its defects have been studied. Each ratable unit has an equal chance of being included in the sample, and there are no difficulties introduced by different sizes of households, as there would be if either of the other available list sampling frames (Electoral Lists and Executive Council Lists) had been chosen.

The disadvantages are as follows. (1) It is not a household sample but a sample of ratable units which may contain several households. The Social Survey has developed a method to deal with this problem which was also used in this survey. The basic rules are that whenever a ratable unit contains two households, both are interviewed. Then the interviewer drops from the sample the next one or two ratable units on the assignment sheet that have not already been contacted in any way (one unit when there are two households, and two when there are three or more). In this survey five units were dropped for this reason. (2) Because the ratable units include nondomestic housing units, arrangement for getting the exact number of households needed is not possible. At one point it appeared that the sample would be too large; but when more demolished houses were found than expected it became clear that in the end the sample would be too small. (3) The sampling method left some responsibility in the hands of the interviewers to discover all the people living at the ratable units; they were instructed to ask at the end of the enumeration, "Now, is that everyone who lives in this (house), (bungalow with garage), (first floor flat), (etc.)?" and presumably they did so. Nevertheless this is a possible source of error, which could not be checked.

Table C. Sampling procedure: Chester, U.K.

Item	Urban	Rural
All ratable units-----	22,843	9,819
Domestic units-----	19,454	8,759
Percent domestic-----	85.2	89.2
Number needed to get desired number of do- mestic units-----	234	111
Correction for demol- ished units-----	9	-
Sampling fraction of units-----	1/95	1/90
Actual number drawn---	243	107
Domestic units-----	212	95
Occupiable-----	200	94
Estimated total number of domestic units----	¹ 18,353	² 8,667
Final sampling fraction-----	1/92	1/92

$$\frac{1200}{212} \times 19,454 = 18,353.$$

$$\frac{294}{95} \times 8,759 = 8,667.$$

Chittenden

The Vermont unit used the area sampling method, along the general lines described by Monroe and Finkner.³ The area was divided into two zones, town and open country. The two zones were subdivided geographically into equal-sized, contiguous strata. A sampling ratio of 1/66 was applied to both zones. The allocation of sampling units is shown in table D.

Assignment of the town zone sampling units required the use of aerial photography, the city directory, and cruise counts. Of the 20 sample segments in the open country zone, 10 required a count unit prelisting before they could be identified, seven could be identified from Chittenden County road maps, and three from aerial photographs.

Seasonal residents were excluded through the use of standard U.S. Bureau of the Census questions at the beginning of each interview. The other exclusions were those usually living in group quarters (students, nursing home and certain hospital inmates, etc.) and active members of the Armed Forces.

³Monroe, J. and Finkner, A. L.: *Handbook of Area Sampling*. New York. Chilton Company-Book Division, 1959.

Table D. Allocation of sampling units: Chittenden, U.S.A.

Item	Total	Town	Country
Population (1960)-----	74,425	55,075	18,350
Occupied dwelling units (1960)-----	19,724	15,677	4,047
Strata-----	50	40	10
Sample units:			
Per strata-----	-	132	132
Per zone-----	6,600	5,280	1,320
Sample segments:			
Per strata-----	-	2	2
Per zone-----	100	80	20
Sample unit size-----	-	2.9691	3.0659

The chief problems encountered were : (1) more cruising was necessary than expected; (2) segment or "cluster" sampling involved an occasional interviewing problem in that after the first interview in a segment, neighbors and other family members anticipated the interviewer's coming and some interview content; and (3) interpretation of some sketch maps proved difficult for inexperienced interviewers.

Smederevo

The Yugoslav group used a two-stage stratified sample of a relatively homogeneous population consisting of 150 urban households and 150 rural ones. As a basis for sampling they used the voting lists of the relevant area. They were considered the most accurate sources of data, for the elections in the whole of Yugoslavia had been held as recently as April 1965.

In the rural subregion of Smederevo, there were no difficulties at all in finding the sample households by following the dwellings given on the voting lists. This was done by three statisticians and took about 1 week. Using the voting lists and consulting the heads of the so-called local offices (territorial administrative offices), they looked for the sample households in each of the villages in the study area. It is possible to say, therefore, that the households from the rural subregion were found quickly and the coverage was almost 100 percent.

In the urban region, however, the team was faced with a number of unexpected difficulties. The voting lists were not as accurate as in the rural area, and addresses of the sampled house-

holds were often incorrect. Having no other choice, they decided to engage five statisticians instead of three and to have them and the heads of the local offices in each town quarter check the dwellings of the sampled households. The checking took about 15 days. It amounted in the end to almost a complete census of the urban population in Smederevo and demonstrated that the technique used in finding the sample households on the basis of the voting lists is not very practicable so that other methods of sampling should probably be used in future studies.

INTERVIEWING

To increase comparability, women 30 to 50 years of age with at least a high school education and no medical or nursing experience were recruited as interviewers, and one of the principal investigators visited all three areas to observe and assist in the interviewer training. Some 10 or 11 interviewers and two supervisors were enlisted in each area. About 10 days were devoted to instruction and practice interviewing, following, in general, the methods of the University of Michigan Survey Research Center. Training continued in varying degrees in each area during the course of the field work with periodic meetings of the interviewers and supervisors to discuss problems encountered in the field and the errors found by the supervisors in editing the completed questionnaires. In Yugoslavia, the whole team spent 2 hours together every day discussing and evaluating the previous day's work. The occurrence of the same questions, the same problems, and even the same jokes in all

three areas makes it likely that a fair degree of comparability was achieved through training.

The assignments of the interviewers were randomized to cover both urban and rural households in Chittenden and Smederevo, but this was not practicable, although admittedly desirable, in Chester because not all interviewers had cars at their disposal and the cost of interviewing would have placed a great strain on the limited budget.

Field work was conducted simultaneously in May, June, and July of 1965. All persons 18 years and over and all married persons under 18 were interviewed individually. Two-thirds of all respondents were interviewed privately. A separate but similar questionnaire was used for children, with the mother or another related, responsible adult acting as the respondent. Except for children and a few persons with language barriers, proxy interviews were not accepted; this led to some underreporting for a small number of senile, terminally ill, or mentally incompetent persons.

Three "call-backs" for incompleted interviews were made where necessary, and in Vermont and Yugoslavia available resources permitted additional "call-backs" in a large number of cases. This effort explains in part the higher response rates in those two areas—98 percent in Yugoslavia and 97 percent in Vermont, compared with 87 percent in England.

As would be expected, the interviewing of the agricultural population in Smederevo required the greatest expenditure of effort. It was often necessary to make repeated calls to reach the adult population before 6 a.m. or late at night. Since the working hours of the interviewers had to be adapted to the free time of the respondents, they were of necessity extremely long, which tends to increase the percentage of omissions and errors in the interviews.

In an effort to maintain a high level of quality in the field work, informal checks of the interviewers' work were made by the supervisors in all three areas, and in two areas, Chittenden and Smederevo, about 10 percent of the respondents in the samples were reinterviewed.

Ninety-three percent of the reported hospital admissions in Chester and Chittenden were checked in the local hospitals and no unreported

hospital admissions were found. Validation of physicians' consultations was attempted, but physicians' medical record systems were not sufficiently adequate in any of the three areas to permit this study.

It was observed that in all three areas there were, on the average, about 25 percent fewer doctor consultations, persons consulting doctors, and "activity limitation" and "bed disability" days reported for the "week before last" than for "last week." "Procedures" performed, such as injections and X-rays, did not show as marked or consistent discrepancies between the 2 weeks.

EDITING, CODING, AND KEY PUNCHING

Comparability in the coding was increased by having one member of the team assist in the training of coders in the three areas. Duplicate coding by independent coders was done on all questionnaires; discrepancies, usually reconciled by a supervisor, were less than 2 percent of all coded items.

Medical coding was handled by physicians or medical coders; it presented many problems that were never successfully overcome.

Between-county studies of the reliability of medical and nonmedical coding were attempted, but the problems of observer variations proved difficult to resolve by mail. Occupational coding presented the greatest problem as far as comparability between the data from the three study areas was concerned. One reason was the use of several different classifications: the Hollingshead scale in Chittenden and Chester, supplemented by the English Registrar General's Classification of Occupations in the case of Chester; and the Yugoslav Short List of Occupations in Smederevo. Future plans call for the uniform use of a new two-digit International Labor Organization code.

The key punching of every card was verified; error rates for this operation were kept at less than 1 percent.

The completed cards were sent to the National Center for Health Statistics where they were put on magnetic tape. Errors and inconsistencies in the tapes were detected by the computer in Washington and corrected from information obtained by airmail and cable.

SURVEY RESULTS

Since one of the objectives of the study was to relate medical care utilization to the resources available, it was important to estimate the ratios of practicing doctors, active nurses, and hospital and nursing home beds available to the defined populations. These figures take into account the use of doctors, nurses, and hospital beds within the areas by both residents and nonresidents of the areas, as well as the use of such services outside the areas by residents of the areas. The population ratios in each area are shown in table E. It is apparent that the population to doctor ratio in Chittenden is roughly half that in the other two areas, i.e., 1:470 in contrast to 1:950 in Chester and 1:1,170 in Smederevo. There are far fewer nurses available to the population in Smederevo than in the other two areas, i.e., 1:1,030 in contrast to 1:140 in each of the other two areas. The same relationship holds for hospital beds, i.e., 1:150 in Smederevo, compared with 1:80 in Chester and 1:90 in Chittenden.

Measurement of overall morbidity in general populations is not easy, whether it be done by household surveys, physical examinations, screening tests, or doctors' records. Several indirect measures that are internally consistent may be as valid as one or two direct measures that are subject to wide observer variation. Uncertainties about "condition" frequencies in populations and difficulties in coding lay responses

to questions about morbidity provide further complications. The questions asked in the present study about the presence or absence of 12 relatively common acute and chronic "symptom-condition" complexes for which, in all three areas, medical care is believed to be beneficial (table A) was an attempt to overcome some of these difficulties. Table F shows the standardized annual rates per 1,000 population for persons reporting that they did not recall having had any of the 12 conditions in the previous 12 months, those who reported having had only one of the 12 conditions, those who reported having had one or more conditions, and the total number of conditions reported from the selected list of 12. The rates for persons with only one condition are about the same in the three areas. The rates for persons with "one or more conditions" and the rates for "all conditions" are substantially higher in Smederevo (730 per 1,000 persons over 1 year old and 2,030 conditions per 1,000 persons over 1 year old) than in Chester (540 persons per 1,000 persons over 1 year old and 1,130 conditions per 1,000 persons over 1 year old) and Chittenden (610 persons per 1,000 persons over 1 year old and 1,330 conditions per 1,000 persons over 1 year old). The reverse is true for persons reporting that they had had none of the 12 conditions in the previous 12 months.

Rates for seven conditions in adults and for five conditions in children were higher in Smederevo than in the other two areas (table 15). Of

Table E. Medical-care resources available for the study areas

Area	Population ratios		
	Doctors ¹ in active practice	Nurses ² in active practice	Hospital ³ nursing- home beds
Chester, U.K-----	1:950	1:140	1:80
Smederevo, Yug-----	1:1,170	1:1,030	1:150
Chittenden, U.S.A-----	1:470	1:140	1:90

¹Includes osteopaths in Chittenden; similar professions not found in other two areas.

²Includes public health nurses, visiting nurses, district nurses, office and clinic nurses, health visitors and midwives.

³Includes beds in psychiatric, tuberculosis and chronic-disease hospitals, and in convalescent, maternity, and nursing homes.

Table F. Persons 1 year of age and over reporting specific conditions¹ and specific conditions reported per year for the study areas

Area	Persons without conditions		Persons with only 1 condition	
	Sample frequency	Standardized rate per 1,000 persons ²	Sample frequency	Standardized rate per 1,000 persons ²
Chester, U.K-----	347	460 ± 18	189	250 ± 16
Smederevo, Yug-----	333	270 ± 14	295	240 ± 13
Chittenden, U.S.A-----	443	390 ± 17	290	260 ± 13

Area	Persons with 1+ conditions		All conditions	
	Sample frequency	Standardized rate per 1,000 persons ²	Sample frequency	Standardized rate per 1,000 persons ²
Chester, U.K-----	411	540 ± 18	855	1,130 ± 50
Smederevo, Yug-----	830	730 ± 14	2,203	2,030 ± 58
Chittenden, U.S.A-----	629	610 ± 17	1,327	1,330 ± 55

¹12 "symptom-condition" complexes (table A).

² ± standard errors of rates.

the 12 conditions, lower rates were observed only for varicose veins and hemorrhoids in adults and for skin rashes in children. The observed differences could, in part, be attributed to differences in perception or reporting, but they are also compatible with basic differences in general morbidity. If overreporting was the main factor contributing to the higher rates reported in Smederevo, it might be expected to be characteristic of most conditions for both adults and children. In fact, for those conditions reported for both adults and children, the patterns differed; for example, cough in relation to breathlessness, headaches, skin rashes, and boils. Table 15 shows that the rank order correlations between pairs of study areas were, for the most part, high, and the coefficients of concordance for all three areas were 0.94 for adults and 0.84 for children.

When the measures of morbidity are further refined by inquiry about the presence of the 12 "symptom-condition" complexes in adults during the previous 2-week period, the relationship between Smederevo and the other two areas is maintained. The same is true when the measure is restricted to those conditions causing "great discomfort" in the previous 2-week period; there were 410 conditions per 1,000 adults in Smederevo compared with 240 per 1,000 in Chester and 330 per 1,000 in Chittenden (table G).

In summary, the rates for persons reporting only one of 12 "conditions" present are similar; all other measures of morbidity employed, i.e., persons affected, number of conditions, discomfort, and prevalence of specific conditions, indicate substantially higher levels of reported morbidity in Smederevo. The possibility of cultural

Table G. Specific conditions¹ and specific conditions associated with "great discomfort" in adults 18 years of age and over during a 2-week period for the study areas

Area	All conditions		Conditions associated with "great discomfort"	
	Sample frequency	Standardized rate per 1,000 adults ²	Sample frequency	Standardized rate per 1,000 adults ²
Chester, U.K-----	417	840 ± 50	122	240 ± 18
Smederevo, Yug-----	1,084	1,580 ± 72	316	410 ± 27
Chittenden, U.S.A-----	668	1,080 ± 63	207	330 ± 23

¹12 "symptom-condition" complexes (table A).

² ± standard errors of rates.

Table H. Days of activity limitation and bed disability and persons with activity limitation and bed disability during a 2-week period for the study areas

Area	Days of limitation		Days of disability	
	Sample frequency	Standardized rate per 1,000 population ¹	Sample frequency	Standardized rate per 1,000 population ¹
Chester, U.K-----	372	490 ± 74	87	110 ± 24
Smederevo, Yug-----	1,433	1,360 ± 111	682	620 ± 74
Chittenden, U.S.A-----	590	620 ± 85	219	210 ± 43

Area	Persons with limitation		Persons with disability	
	Sample frequency	Standardized rate per 1,000 population ¹	Sample frequency	Standardized rate per 1,000 population ¹
Chester, U.K-----	89	110 ± 12	45	60 ± 9
Smederevo, Yug-----	242	220 ± 13	125	110 ± 10
Chittenden, U.S.A-----	126	120 ± 10	71	60 ± 7

¹ ± standard errors of rates.

differences in perception and reporting cannot be excluded. Whether this population does or does not have higher levels of true morbidity is perhaps less important from the viewpoint of organizing medical care than the observation that those questioned *think* that they have a substantial amount of morbidity.

A critical criterion for assessing the effectiveness of medical care is its capacity to improve function or at least diminish objective disability. Table H gives the rates for a 2-week period for days of "activity limitation" (i.e., inability to carry on normal daily activities because of illness), and for persons with "bed disability."

The differences are in the same direction for both forms of disability; they parallel the differences observed for "all conditions" and for

those associated with "great discomfort" but are substantially larger (table G). It is of interest that higher rates for Smederevo are observed both for days of activity limitation and bed disability and for persons affected in each category. These differences are in contrast to the relative similarity between the other two areas for all these rates. The mean length of "activity limitation" in Smederevo is 5.9 days compared with 4.2 in Chester and 4.7 in Chittenden. Similarly the mean length of "bed disability" in Smederevo is 5.5 days compared with 1.9 in Chester and 3.1 in Chittenden. The higher levels in Smederevo do not appear to be a function of "malingering" by workers since the same patterns are observed for children who receive no sickness insurance benefits.

Table J. Visual impairments, eye examinations, and use of eyeglasses by adults 18 years of age and over for the study areas

Area	Unable to "read newspapers" ¹ without eyeglasses		Unable to "recognize friends" without eyeglasses	
	Sample frequency	Standardized rate per 1,000 adults ²	Sample frequency	Standardized rate per 1,000 adults ²
Chester, U.K-----	171	350 ± 17	61	110 ± 14
Smederevo, Yug-----	203	330 ± 15	67	100 ± 12
Chittenden, U.S.A-----	217	380 ± 15	97	160 ± 15
Area	Eye examinations during previous year		Use of eyeglasses some or all of time	
	Sample frequency	Standardized rate per 1,000 adults ²	Sample frequency	Standardized rate per 1,000 adults ²
Chester, U.K-----	87	170 ± 17	320	610 ± 19
Smederevo, Yug-----	100	120 ± 11	176	270 ± 15
Chittenden, U.S.A-----	168	270 ± 18	372	610 ± 17

¹ "Read" understood and interpreted to mean "see ordinary newspaper print."

² ± standard errors of rates.

Table K. Persons with a personal doctor,¹ persons consulting doctors, and doctor and nurse² consultations during a 2-week period for the study areas

Item	Chester, U.K.	Smederevo, Yug.	Chittenden, U.S.A.
<u>Persons without personal doctor</u>			
Sample frequency-----	25	208	154
Standardized rate per 1,000 population ³ -----	30 ± 7	200 ± 13	160 ± 12
<u>Persons with single doctor</u>			
Sample frequency-----	637	683	800
Standardized rate per 1,000 population ³ -----	830 ± 15	570 ± 17	710 ± 16
<u>Persons consulting all doctors</u>			
Sample frequency-----	118	168	168
Standardized rate per 1,000 population ³ -----	150 ± 13	130 ± 10	160 ± 11
<u>All doctor consultations</u>			
Sample frequency-----	158	268	239
Standardized rate per 1,000 population ³ -----	200 ± 20	200 ± 18	230 ± 21
<u>All nurse consultations</u>			
Sample frequency-----	47	89	23
Standardized rate per 1,000 population ³ -----	70 ± 31	70 ± 17	20 ± 12

¹Includes osteopaths in Chittenden; similar professions not found in other two areas.

²Includes public health nurses, visiting nurses, district nurses, office and clinic nurses, health visitors, and midwives.

³± standard errors of rates.

Visual impairments were selected as being relatively stable, widely prevalent indicators of disability, minimally influenced by cultural factors, which are more readily ascertainable by lay interviewers than other forms of disability. As such, they may indicate the potential demand for medical care. This notion is supported by the stability of the rates for adults unable to "read newspapers" without eyeglasses and for persons unable to "recognize friends" without eyeglasses (table J). Both these rates were remarkably similar in all three areas—350 in Chester, 330 in Smederevo, and 380 in Chittenden for the former impairment; and 110 in Chester, 100 in Smederevo, and 160 in Chittenden for the latter. By contrast, however, the rates for persons who had had their eyes examined during the pre-

vious 12 months and rates for the use of eyeglasses were substantially higher in Chester and Chittenden than in Smederevo, perhaps reflecting differences in the availability of ophthalmologists and opticians. Why the rates for the use of eyeglasses should be identical in Chester and Chittenden is not readily apparent. The similarity of patterns in the visual impairment rates and the differences in the "eye examination" and "eyeglass use" rates suggests that the higher rates for general morbidity, specific morbidity, activity limitation, and bed disability in Smederevo are unlikely to be entirely explained as functions of differential reporting in the three areas. All the evidence from this study favors the conclusion that there is more morbidity and disability in Smederevo than in Chester or Chittenden.

Table K shows the rates for persons having a single "personal doctor" and for doctor consultations. As might be expected, in Chester, where the British National Health Service makes a general practitioner available for everyone, the rate (830 per 1,000 population) was substantially higher for persons who reported that they have a personal doctor than it was in the other two areas. Smederevo may have had a lower rate (570 per 1,000 population) because many patients attend health units and health centers, each staffed by several physicians, any one of whom a patient may see on successive visits. The Chittenden rate (710 per 1,000 population) was intermediate. Rates in the three areas for the number of persons consulting doctors during a 2-week period and the rates for all doctor consultations during a 2-week period are virtually identical. Rates for all nurse consultations were markedly less in Chittenden. None of the consultation rates appeared to be positively correlated with the ratio of physicians or nurses available to the populations of the three areas.

Table L gives selected characteristics of the personal doctors designated by the respondents. Most patients in all three areas were within 30 minutes' travel time of their doctor, and most found him relatively "unhurried" and prepared to "listen" and "explain."

Data shown in table M reflect the propensity of the population to consult doctors in relation to reported levels of morbidity. Again, the proportion of all conditions for which no doctor was consulted during the previous 12 months was similar—a range of 22-34 percent. The tendency for adults having one or more conditions not to consult a doctor appeared greater in Smederevo (69 percent) and Chittenden (66 percent) than in Chester (41 percent). The proportion of selected conditions in adults that caused "great discomfort" during the 2-week period but for which no doctor was consulted was almost identical in the three areas. In each of the three areas about four out of five of those individuals who reported that they had experienced "great discomfort" in the past 2 weeks from one or more of the listed

Table L. Selected characteristics of doctor reported by adults 18 years of age and over having a personal doctor for the study areas

Item	Chester, U.K.	Smederevo, Yug.	Chittenden, U.S.A.
<u>Adults with single personal doctor</u>			
Number-----	493	613	502
Percentage-----	100	100	100
<u>Doctor's office within 30 minutes travel time</u>			
Number-----	370	520	463
Percentage-----	66	85	93
<u>Doctor "unhurried" most of time</u>			
Number-----	346	515	468
Percentage-----	83	84	93
<u>Doctor "listens" most of time</u>			
Number-----	373	532	483
Percentage-----	89	87	96
<u>Doctor "explains" most of time</u>			
Number-----	322	495	466
Percentage-----	78	81	93

Table M. Proportion of specific conditions¹ and of adults 18 years of age and over with specific conditions for which no doctor was consulted for the study areas

Area	All conditions ²			All adults with one condition or more ²			All conditions causing "great discomfort" in adults ³		
	Total	Doctor not consulted		Total	Doctor not consulted		Total	Doctor not consulted	
	Number		Per-cent	Number		Per-cent	Number		Per-cent
Chester, U.K-----	670	226	34	309	169	41	122	96	79
Smederevo, Yug-----	1,829	397	22	602	418	69	316	271	86
Chittenden, U.S.A-----	925	256	28	398	264	66	207	163	79

¹12 "symptom-condition" complexes (table A).

²12-month period.

³2-week period.

Table N. Doctor consultations for persons 1 year of age and over without any conditions and with one or more conditions during a 2-week period for the study areas

Area	Persons without any conditions consulting doctors		Persons with one condition or more consulting doctors	
	Sample frequency	Standardized rate per 1,000 persons ¹	Sample frequency	Standardized rate per 1,000 persons ¹
Chester, U.K-----	15	50 ± 8	103	100 ± 10
Smederevo, Yug-----	21	30 ± 4	147	100 ± 9
Chittenden, U.S.A-----	55	50 ± 7	113	110 ± 9

¹± standard errors of rates.

12 acute and chronic conditions did not consult a physician during that interval.

The extent to which patients consulted doctors for curative services in contrast to preventive services is indicated in table N. Virtually identical rates for "persons without any conditions consulting doctors" were found in Chester and Chittenden (50 per 1,000 persons). The rate for Smederevo was somewhat less

(30 per 1,000 persons). This suggests that the presence of a financial barrier to the use of medical care, sometimes associated with the fee-for-service system, was not an important deterrent. Doctors were consulted for check-ups and possible preventive services as frequently in Chittenden as in Chester. The doctor consultation rates for persons with conditions were virtually identical in all three areas.

Table O shows the use of drugs (medicine, salves, or pills) by adults in the three areas. About twice as many adults had taken prescribed medicine in the previous 48 hours in Chester (38 percent) and Chittenden (48 percent) as in Smederevo (19 percent). The same relationship held for the proportion of persons who had taken medicines not prescribed by a doctor. In spite of apparently higher morbidity and disability rates, the use of drugs and self-medication was at lower levels in Smederevo than in Chester and Chittenden.

Table P shows the standardized annual rates per 1,000 population for the use of all hospitals, including psychiatric hospitals, in the three areas; the rates are similar to the national rates for the respective countries. The annual admission rate per 1,000 population is much higher in Chittenden (170 per 1,000) than in Chester (90 per 1,000) and Smederevo (100 per 1,000); the rate for persons admitted is also higher. The annual rate of hospital days per 1,000 population is lowest in Chester, but the standard errors are large.

Table O. Use of drugs¹ by adults 18 years of age and over during the previous 2 days for the study areas

Area	Total		Using any drugs		Using only drugs prescribed by doctor		Using drugs not prescribed by doctor		Using both prescribed and nonprescribed drugs	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Chester, U.K-----	514	100	197	38	97	19	76	15	23	4
Smederevo, Yug-----	776	100	147	19	94	12	45	6	5	1
Chittenden, U.S.A---	627	100	303	48	172	27	110	18	21	3

¹"Medicines, salves, or pills."

Table P. Admissions, persons admitted, and hospital days for all persons 1 year of age and over per year and mean length of stay¹ for the study areas

Area	Admissions		Persons admitted		Hospital days		Mean length of stay
	Sample frequency	Standardized rate per 1,000 population ²	Sample frequency	Standardized rate per 1,000 population ²	Sample frequency	Standardized rate per 1,000 population ²	
Chester, U.K-----	69	90 ± 12	57	70 ± 9	669	850 ± 184	11
Smederevo, Yug-----	122	100 ± 11	102	80 ± 8	1,637	1,460 ± 335	14
Chittenden, U.S.A---	168	170 ± 15	147	140 ± 12	1,358	1,500 ± 276	8

¹Averages within areas only.

² ± standard errors of rates.

SUMMARY AND CONCLUSIONS

In spite of substantial differences in ways of life, in organization of health services, and in reported morbidity and disability, people in the three study areas in England, Yugoslavia, and the United States appear to consult doctors in very much the same way. Tabulations by levels of educational achievement showed no important contrasts between the respective study areas. The possibility exists that there is some kind of propensity for consulting a doctor or a nurse for curative services. This propensity seems unrelated to the number of doctors available to the population. Different factors may influence the use of preventive and curative services.

On the other hand, it is apparent that patterns of hospital utilization vary substantially in the three areas, and these differences raise interesting questions about the ways in which hospitals are organized and used in the three areas.

On the basis of this study, the Committee for the International Collaborative Study of Medical Care Utilization has concluded that epidemiologic methods employing household interviews are feasible for undertaking international and regional studies of medical care utilization. The internal consistency of the rates observed with respect to both similarities and differences is reassuring; most of the standard errors are acceptable. The consistency of hospital utilization data with national data in the three areas affords additional support for the committee's conclu-

sion. Validation studies indicate that the methods are responsive to the problem.

In the full-scale study now underway in 11 areas in Argentina, Canada, Finland, Poland, the United Kingdom, the United States, and Yugoslavia the same general methods will be employed, including the use of identical questionnaires and manuals (translated and retranslated), uniform training programs for interviewers and coders, coordination of activities in the field by traveling consultants, and communication among the participants by means of frequent large and small working sessions. The sample size in each study area will be expanded to at least 1,000 households. Many changes and improvements will be made in the questionnaires, manuals, and computer programs. The sampling design will continue to be a matter of local choice depending on prior experience and the availability of sampling information in each area. More refined methods will be introduced to obtain comparability between the study areas in the classification of occupations and in the measurement of health personnel and facilities. With the confidence gained from the feasibility study that the methods are suitable, it is now possible to progress to the examination of some of the original hypotheses of interest and to explore in greater depth the relationships between the availability of health personnel and resources, the methods of organizing medical care and paying for services, and the utilization of medical care.

PUBLICATIONS OF COMMITTEE FOR INTERNATIONAL COLLABORATIVE STUDY OF MEDICAL CARE UTILIZATION

Committee for International Collaborative Study of Medical Care Utilization: *The Chronicle of a Feasibility Study, 1964-66*. 82 pp., 1966 (available from Committee participants).

Mabry, J. H., and others: The natural history of an international collaborative study of medical care utilization. *Social Sciences Information* (UNESCO) 5:37-55, 1966.

White, K. L., and others: International comparisons of medical-care utilization. *New England J. Med.* 277:516-522, 1967.

Bice, T., and White, K. L.: Factors related to the use of health services, an international comparative study. *Medical Care* 7:124-133, Mar.-Apr., 1969.

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Table 1. Total number of persons eligible for interview, number interviewed, and number not interviewed, by age, urban-rural classification, and sex for the study areas

Area, Urban-rural classification, and sex	All ages			Under 18 years			18-44 years			45-64 years			65+ years		
	Total	I	N-I	Total	I	N-I	Total	I	N-I	Total	I	N-I	Total	I	N-I
Chester, U.K.															
	Number of persons														
Total-----	890	771	119	273	257	16	272	240	32	231	195	36	114	79	35
Male-----	413	353	60	136	128	8	129	108	21	107	90	17	41	27	14
Female-----	477	418	59	137	129	8	143	132	11	124	105	19	73	52	21
Urban-----	584	499	85	161	155	6	179	157	22	159	130	29	85	57	28
Male-----	269	228	41	78	77	1	90	76	14	74	58	16	27	17	10
Female-----	315	271	44	83	78	5	89	81	8	85	72	13	58	40	18
Rural-----	306	272	34	112	102	10	93	83	10	72	65	7	29	22	7
Male-----	144	125	19	58	51	7	39	32	7	33	32	1	14	10	4
Female-----	162	147	15	54	51	3	54	51	3	39	33	6	15	12	3
Smederevo, Yug.															
Total-----	1,198	1,174	24	405	402	3	484	472	12	209	206	3	100	94	6
Male-----	601	585	16	220	219	1	240	230	10	101	99	2	40	37	3
Female-----	597	589	8	185	183	2	244	242	2	108	107	1	60	57	3
Urban-----	533	520	13	201	199	2	233	227	6	65	63	2	34	31	3
Male-----	259	250	9	105	104	1	109	103	6	33	32	1	12	11	1
Female-----	274	270	4	96	95	1	124	124	-	32	31	1	22	20	2
Rural-----	665	654	11	204	203	1	251	245	6	144	143	1	66	63	3
Male-----	342	335	7	115	115	-	131	127	4	68	67	1	28	26	2
Female-----	323	319	4	89	88	1	120	118	2	76	76	-	38	37	1
Chittenden, U.S.A.															
Total-----	1,118	1,088	30	466	463	3	341	336	5	211	196	15	100	93	7
Male-----	566	551	15	254	251	3	167	164	3	105	99	6	40	37	3
Female-----	552	537	15	212	212	-	174	172	2	106	97	9	60	56	4
Urban-----	889	863	26	361	359	2	269	265	4	170	157	13	89	82	7
Male-----	439	427	12	190	188	2	132	130	2	82	77	5	35	32	3
Female-----	450	436	14	171	171	-	137	135	2	88	80	8	54	50	4
Rural-----	229	225	4	105	104	1	72	71	1	41	39	2	11	11	-
Male-----	127	124	3	64	63	1	35	34	1	23	22	1	5	5	-
Female-----	102	101	1	41	41	-	37	37	-	18	17	1	6	6	-

I = Interviewed.
N-I = Not interviewed.

Table 2. Numbers of persons consulting doctors¹ during a 2-week period, by age and sex for the study areas

[Observed frequencies obtained in the interviews]

Area and number of consultations	All ages	Under 18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>								
Number of persons interviewed								
Total persons-----	771	257	108	132	90	105	27	52
Persons with:								
No consultations-----	653	217	100	105	76	87	24	44
One consultation-----	87	32	6	21	9	10	3	6
Two consultations-----	26	7	1	5	4	7	-	2
Three consultations or more-----	5	1	1	1	1	1	-	-
<u>Smederevo, Yug.</u>								
Total persons-----	1,174	402	230	242	99	107	37	57
Persons with:								
No consultations-----	1,006	328	211	198	91	92	37	49
One consultation-----	107	50	10	29	4	9	-	5
Two consultations-----	38	12	4	12	3	5	-	2
Three consultations or more-----	23	12	5	3	1	1	-	1
<u>Chittenden, U.S.A.</u>								
Total persons-----	1,088	463	164	172	99	97	37	56
Persons with:								
No consultations-----	920	397	143	138	87	80	29	46
One consultation-----	126	51	11	31	10	11	5	7
Two consultations-----	26	10	6	1	1	4	2	2
Three consultations or more-----	16	5	4	2	1	2	1	1

¹Includes osteopaths in Chittenden; similar professions not found in other two areas.

Table 3. Numbers of persons consulting health workers¹ other than doctors and numbers of consultations during a 2-week period, by age, sex, and type of consultation for the study areas

[Observed frequencies obtained in the interviews]

Area and type of consultation	All ages	Under 18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>								
Total persons-----	771	257	108	132	90	105	27	52
Number of persons with one visit or more-----	88	29	15	16	7	8	4	9
Number of nurse consultations-----	47	8	2	4	5	6	15	7
Number of dentist consultations-----	43	19	8	9	5	-	-	2
Number of other consultations-----	46	15	6	6	4	5	2	8
<u>Smederevo, Yug.</u>								
Total persons-----	1,174	402	230	242	99	107	37	57
Number of persons with one visit or more-----	66	22	8	23	5	2	2	4
Number of nurse consultations-----	89	35	3	38	3	3	-	7
Number of dentist consultations-----	19	6	3	8	-	-	2	-
Number of other consultations-----	38	3	16	11	5	1	1	1
<u>Chittenden, U.S.A.</u>								
Total persons-----	1,088	463	164	172	99	97	37	56
Number of persons with one visit or more-----	83	36	10	12	7	11	3	4
Number of nurse consultations-----	23	10	5	1	2	5	-	-
Number of dentist consultations-----	54	22	6	13	2	6	3	2
Number of other consultations-----	29	13	5	2	4	2	1	2

¹Includes public health nurses, visiting nurses, district nurses, office and clinic nurses, health visitors, and midwives.

Table 4. Numbers of persons 1 year of age and over with selected conditions and number of conditions, by age and sex for the study areas

[Observed frequencies obtained in the interviews]

Area and number of conditions	All ages, 1+ years	1-18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>								
Total persons, 1+ years-----	758	244	108	132	90	105	27	52
Number of persons with:								
No conditions-----	347	142	61	42	39	28	14	21
One condition or more-----	411	102	47	90	51	77	13	31
One condition-----	189	53	33	36	23	26	5	13
Two conditions-----	101	28	8	21	12	22	2	8
Three conditions-----	62	12	4	15	8	14	5	4
Four conditions-----	32	6	1	10	4	7	1	3
Five conditions or more-----	27	3	1	8	4	8	-	3
Total number of conditions-----	855	185	70	210	109	183	28	70
<u>Smederevo, Yug.</u>								
Total persons, 1+ years-----	1,163	391	230	242	99	107	37	57
Number of persons with:								
No conditions-----	333	163	76	47	16	13	9	9
One condition or more-----	830	228	154	195	83	94	28	48
One condition-----	295	136	60	46	21	15	8	9
Two conditions-----	178	56	40	43	12	12	9	6
Three conditions-----	134	24	19	33	20	26	4	8
Four conditions-----	90	9	17	27	9	14	3	11
Five conditions or more-----	133	3	18	46	21	27	4	14
Total number of conditions-----	2,203	374	369	614	272	333	72	169
<u>Chittenden, U.S.A.</u>								
Total persons, 1+ years-----	1,072	447	164	172	99	97	37	56
Number of persons with:								
No conditions-----	443	216	73	59	39	33	9	14
One condition or more-----	629	231	91	113	60	64	28	42
One condition-----	290	129	53	41	23	24	11	9
Two conditions-----	160	58	23	24	18	16	7	14
Three conditions-----	86	28	5	22	10	10	3	8
Four conditions-----	42	8	5	10	5	7	2	5
Five conditions or more-----	51	8	5	16	4	7	5	6
Total number of conditions-----	1,327	402	162	286	129	152	71	125

Table 5. Numbers of persons admitted to hospitals and number of admissions during a year, by age and sex for the study areas

[Observed frequencies obtained in the interviews]

Area and number of admissions	All ages	Under 18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>								
Total persons-----	771	257	108	132	90	105	27	52
Number of persons with:								
One admission or more-----	57	19	1	25	5	4	1	2
One admission-----	46	18	1	20	2	3	1	1
Two admissions-----	10	1	-	5	3	1	-	-
Three admissions or more-----	1	-	-	-	-	-	-	1
Total number of admissions-----	69	20	1	30	8	5	1	4
<u>Smederevo, Yug.</u>								
Total persons-----	1,174	402	230	242	99	107	37	57
Number of persons with:								
One admission or more-----	102	41	13	35	7	4	-	2
One admission-----	83	32	12	29	5	4	-	1
Two admissions-----	18	9	1	5	2	-	-	1
Three admissions or more-----	1	-	-	1	-	-	-	-
Total number of admissions-----	122	50	14	42	9	4	-	3
<u>Chittenden, U.S.A.</u>								
Total persons-----	1,088	463	164	172	99	97	37	56
Number of persons with:								
One admission or more-----	147	49	12	37	13	15	10	11
One admission-----	130	48	10	34	8	11	8	11
Two admissions-----	14	1	2	3	3	4	1	-
Three admissions or more-----	3	-	-	-	2	-	1	-
Total number of admissions-----	168	50	14	40	20	19	14	11

Table 6. Population estimated from the sample, by age, urban-rural classification, and sex for the study areas

[Estimates of frequencies in the total population]

Area, urban-rural classification, and sex	All ages	Under 18 years	18-44 years	45-64 years	65+ years
<u>Chester, U.K.</u>					
Total-----	81,790	25,070	25,050	21,200	10,470
Male-----	37,960	12,500	11,870	9,830	3,770
Female-----	43,830	12,570	13,180	11,370	6,700
Urban-----	53,570	14,740	16,470	14,560	7,800
Male-----	24,700	7,150	8,280	6,790	2,480
Female-----	28,870	7,600	8,180	7,770	5,320
Rural-----	28,220	10,330	8,580	6,640	2,670
Male-----	13,260	5,360	3,580	3,040	1,290
Female-----	14,950	4,970	5,000	3,600	1,380
<u>Smederevo, Yug.</u>					
Total-----	90,370	30,210	36,230	16,220	7,710
Male-----	45,540	16,490	18,130	7,800	3,110
Female-----	44,830	13,710	18,100	8,420	4,600
Urban-----	35,210	13,280	15,390	4,280	2,250
Male-----	17,130	6,950	7,210	2,180	790
Female-----	18,090	6,330	8,180	2,110	1,460
Rural-----	55,150	16,920	20,830	11,940	5,460
Male-----	28,410	9,540	10,920	5,630	2,310
Female-----	26,740	7,380	9,910	6,310	3,140
<u>Chittenden, U.S.A.</u>					
Total-----	73,800	30,770	22,510	13,940	6,580
Male-----	37,340	16,780	11,020	6,910	2,630
Female-----	36,460	13,990	11,490	7,030	3,950
Urban-----	58,690	23,850	17,750	11,230	5,850
Male-----	28,970	12,570	8,710	5,390	2,300
Female-----	29,720	11,290	9,040	5,840	3,550
Rural-----	15,100	6,910	4,750	2,710	730
Male-----	8,370	4,210	2,310	1,520	330
Female-----	6,730	2,710	2,440	1,190	400

NOTE: Due to rounding, detailed figures may not add to the totals.

Table 7. Numbers and rates for persons having a personal doctor,¹ by age, sex, and number of doctors for the study areas

[Estimates of frequencies in the total population]

Area and number of personal doctors	All ages	Under 18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>	Number of persons							
Total persons-----	81,790	25,070	11,870	13,180	9,830	11,370	3,770	6,700
Persons with:								
One doctor-----	67,660	21,340	10,000	10,500	7,920	9,100	3,370	5,440
Two doctors-----	7,290	2,330	550	1,190	770	1,300	150	990
Three doctors or more-----	4,250	980	770	790	640	540	260	270
No doctor-----	2,590	410	550	700	500	430	-	-
<u>Smederevo, Yug.</u>								
Total persons-----	90,370	30,210	18,130	18,100	7,800	8,420	3,110	4,600
Persons with:								
One doctor-----	51,830	17,200	10,220	11,330	3,900	4,900	1,800	2,490
Two doctors-----	1,670	670	160	550	150	150	-	-
Three doctors or more-----	20,180	8,710	4,070	3,190	1,670	1,350	440	750
No doctor-----	16,680	3,630	3,690	3,030	2,090	2,010	860	1,360
<u>Chittenden, U.S.A.</u>								
Total persons-----	73,800	30,770	11,020	11,490	6,910	7,030	2,630	3,950
Persons with:								
One doctor-----	54,160	25,920	6,730	7,540	5,020	4,630	1,780	2,540
Two doctors-----	6,850	1,720	800	1,530	700	1,240	360	490
Three doctors or more-----	2,170	1,000	130	600	70	220	-	140
No doctor-----	10,620	2,120	3,360	1,810	1,120	940	500	770

¹Includes osteopaths in Chittenden; similar professions not found in other two areas.

NOTE: Due to rounding, detailed figures may not add to the totals.

Table 7. Numbers and rates for persons having a personal doctor,¹ by age, sex, and number of doctors for the study areas—Con.

[Estimates of frequencies in the total population]

All ages	Under 18 years	18-44 years		45-64 years		65+ years		Standard- ized rate per 1,000 persons
		Male	Female	Male	Female	Male	Female	
Rate per 1,000 persons								
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
830	850	840	800	810	800	890	810	830
90	90	50	90	80	110	40	150	90
50	40	60	60	60	50	70	40	50
30	20	50	50	50	40	-	-	30
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
570	570	560	630	500	580	580	540	570
20	20	10	30	20	20	-	-	20
220	290	220	180	210	160	140	160	210
180	120	200	170	270	240	280	300	200
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
730	840	610	660	730	660	670	640	710
90	60	70	130	100	180	140	120	100
30	30	10	50	10	30	-	40	30
140	70	300	160	160	130	190	190	160

Table 8. Numbers and rates for persons consulting doctors¹ during a 2-week period, by age, sex, and number of consultations for the study areas

[Estimates of frequencies in the total population]

Area and number of consultations	All ages	Under 18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>	Number of persons							
Total persons-----	81,790	25,070	11,870	13,180	9,830	11,370	3,770	6,700
Persons with no consultations--	69,350	21,180	10,980	10,490	8,280	9,420	3,370	5,640
Persons with one consultation or more-----	12,440	3,890	890	2,690	1,550	1,950	400	1,060
Persons with one consultation----	9,170	3,140	660	2,100	990	1,080	400	800
Persons with two consultations---	2,740	660	110	490	450	760	-	270
Persons with three consultations or more-----	530	90	110	100	120	110	-	-
<u>Smederevo, Yug.</u>								
Total persons-----	90,370	30,210	18,130	18,100	7,800	8,420	3,110	4,600
Persons with no consultations--	77,880	24,670	16,670	14,980	7,200	7,280	3,110	3,960
Persons with one consultation or more-----	12,490	5,530	1,460	3,120	600	1,140	-	640
Persons with one consultation----	8,030	3,770	750	2,110	300	690	-	410
Persons with two consultations---	2,800	930	300	810	220	380	-	150
Persons with three consultations or more-----	1,650	840	400	200	70	70	-	80
<u>Chittenden, U.S.A.</u>								
Total persons-----	73,800	30,770	11,020	11,490	6,910	7,030	2,630	3,950
Persons with no consultations--	62,390	26,380	9,610	9,210	6,070	5,800	2,060	3,240
Persons with one consultation or more-----	11,410	4,390	1,410	2,270	830	1,230	570	700
Persons with one consultation----	8,540	3,400	740	2,070	700	800	360	490
Persons with two consultations---	1,770	660	400	70	70	290	140	140
Persons with three consultations or more-----	1,090	330	270	130	70	150	70	70

¹Includes osteopaths in Chittenden; similar professions not found in other two areas.

NOTE: Due to rounding, detailed figures may not add to the totals.

Table 8. Numbers and rates for persons consulting doctors¹ during a 2-week period, by age, sex, and number of consultations for the study areas—Con.

[Estimates of frequencies in the total population]

All ages	Under 18 years	18-44 years		45-64 years		65+ years		Standard-ized rate per 1,000 persons
		Male	Female	Male	Female	Male	Female	
Rate per 1,000 persons								
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
850	840	920	800	840	830	890	840	850
150	150	70	200	160	170	110	160	150
110	120	60	160	100	90	110	120	110
30	30	10	40	40	70	-	40	30
10	-	10	10	10	10	-	-	10
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
860	820	920	830	920	860	1,000	860	870
140	180	80	170	80	130	-	140	130
90	120	40	120	40	80	-	90	80
30	30	20	40	30	50	-	30	30
20	30	20	10	10	10	-	20	20
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
840	860	870	800	880	820	780	820	840
150	140	130	200	120	170	220	180	160
120	110	70	180	100	110	140	120	120
20	20	40	10	10	40	50	40	20
20	10	20	10	10	20	30	20	20

Table 9. Numbers and rates for consultations with doctors¹ during a 2-week period, by age and sex for the study areas

[Estimates of frequencies in the total population]

Age and sex	Chester, U.K.			
	Total number of persons	Consultations		
		Total number	Rate per 1,000 persons	Rate per 1,000 persons with 1+ consultations
<u>All ages</u>				
Both sexes-----	81,790	16,680	200	1,340
<u>Under 18 years</u>				
Both sexes-----	25,070	4,740	190	1,020
<u>18-44 years</u>				
Male-----	11,870	1,340	110	1,510
Female-----	13,180	3,380	260	1,260
<u>45-64 years</u>				
Male-----	9,830	2,350	240	1,510
Female-----	11,370	3,140	280	1,610
<u>65+ years</u>				
Male-----	3,770	400	110	1,000
Female-----	6,700	1,330	200	1,250
Standardized rate per 1,000 persons-----	...	...	200	...

¹ Includes osteopaths in Chittenden; similar professions not found in other two areas.

NOTE: Due to rounding, detailed figures may not add to the totals.

Table 9. Numbers and rates for consultations with doctors¹ during a 2-week period, by age and sex for the study areas—Con.

[Estimates of frequencies in the total population]

Smederevo, Yug.				Chittenden, U.S.A.			
Total number of persons	Consultations			Total number of persons	Consultations		
	Total number	Rate per 1,000 persons	Rate per 1,000 persons with 1+ consultations		Total number	Rate per 1,000 persons	Rate per 1,000 persons with 1+ consultations
90,370	19,710	220	1,580	73,800	16,270	220	1,430
30,210	8,600	280	1,550	30,770	5,790	190	1,320
18,130	2,810	150	1,930	11,020	2,620	240	1,860
18,100	4,520	250	1,450	11,490	2,670	230	1,180
7,800	950	120	1,600	6,910	1,180	170	1,410
8,420	1,870	220	1,640	7,030	2,030	290	1,650
3,110	-	-	-	2,630	920	350	1,620
4,600	960	210	1,490	3,950	1,060	270	1,500
...	...	200	...	...	...	230	...

Table 10. Numbers and rates for consultations with doctors¹ during a 2-week period, by age, sex, and place of consultation for the study areas

[Estimates of frequencies in the total population]

Area and place of consultation	All ages	Under 18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>								
Number of consultations								
Total consultations-----	16,680	4,740	1,340	3,380	2,350	3,140	400	1,330
Not hospital based-----	13,410	4,080	1,220	2,690	2,040	2,060	260	1,060
Office, surgery, and health center--	8,710	2,060	1,000	1,890	1,340	1,620	130	660
Home-----	3,250	1,350	110	600	470	330	130	270
School, factory, and other-----	1,450	670	110	200	230	110	-	130
Hospital based-----	2,130	180	110	600	310	650	150	130
Outpatient clinic-----	1,690	180	110	400	310	540	150	-
Emergency and casualty-----	440	-	-	200	-	110	-	130
Telephone-----	1,140	480	-	100	-	430	-	130
<u>Smederevo, Yug.</u>								
Total consultations-----	19,710	8,600	2,810	4,520	950	1,870	-	960
Not hospital based-----	14,580	6,160	2,390	3,420	750	1,230	-	630
Office, surgery, and health center--	10,030	4,350	990	2,890	240	1,150	-	410
Home-----	220	-	-	-	-	-	-	220
School, factory, and other-----	4,330	1,810	1,400	530	510	80	-	-
Hospital based-----	5,120	2,440	410	1,110	210	630	-	330
Outpatient clinic-----	3,620	1,340	410	910	140	490	-	330
Emergency and casualty-----	1,500	1,100	-	200	70	140	-	-
Telephone-----	-	-	-	-	-	-	-	-
<u>Chittenden, U.S.A.</u>								
Total consultations-----	16,270	5,790	2,620	2,670	1,180	2,030	920	1,060
Not hospital based-----	11,740	3,470	2,010	1,940	1,110	1,590	780	840
Office, surgery, and health center--	10,250	2,930	1,480	1,870	1,040	1,520	780	630
Home-----	750	270	130	70	-	70	-	210
School, factory, and other-----	740	270	400	-	70	-	-	-
Hospital based-----	2,110	1,000	400	200	-	440	70	-
Outpatient clinic-----	770	200	-	130	-	440	-	-
Emergency and casualty-----	1,340	800	400	70	-	-	70	-
Telephone-----	2,420	1,330	200	530	70	-	70	210

¹ Includes osteopaths in Chittenden; similar professions not found in other two areas.

NOTE: Due to rounding, detailed figures may not add to the totals.

Table 10. Numbers and rates for consultations with doctors¹ during a 2-week period, by age, sex, and place of consultation for the study areas—Con.

[Estimates of frequencies in the total population]

All ages	Under 18 years	18-44 years		45-64 years		65+ years	
		Male	Female	Male	Female	Male	Female
Rate per 1,000 consultations							
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
790	860	920	800	870	660	650	800
520	430	750	560	570	520	320	500
190	280	80	180	200	100	320	200
80	140	80	60	100	30	-	100
130	40	80	180	130	200	370	100
100	40	80	120	130	170	370	-
30	-	-	60	-	30	-	100
70	100	-	30	-	140	-	100
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
740	720	850	760	790	660	-	660
510	510	350	640	250	620	-	430
10	-	-	-	-	-	-	230
220	210	500	120	540	40	-	-
260	280	150	240	210	330	-	340
180	150	150	200	140	260	-	340
80	130	-	40	70	70	-	-
-	-	-	-	-	-	-	-
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
720	600	770	730	940	780	850	790
630	500	560	700	880	750	850	590
50	50	50	20	-	40	-	200
40	50	150	-	60	-	-	-
130	180	150	70	-	220	80	-
50	40	-	50	-	220	-	-
80	140	150	20	-	-	80	-
150	230	80	200	60	-	80	200

Table 11. Numbers and rates for procedures ordered at consultations with doctors¹ during a 2-week period, by age, sex, and type of procedure for the study areas

[Estimates of frequencies in the total population]

Area and type of procedure	All ages	Under 18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>								
Number of consultations and procedures								
Total consultations-----	16,680	4,740	1,340	3,380	2,350	3,140	400	1,330
Total procedures-----	18,270	4,080	1,780	3,080	3,470	3,460	660	1,730
Injection given-----	970	390	450	-	-	-	-	130
Blood drawn-----	930	-	-	200	330	-	270	130
X-ray ordered-----	350	-	-	100	120	-	-	130
Prescription given-----	10,910	2,660	770	2,290	1,460	2,270	260	1,200
Treatment given-----	880	280	-	-	120	220	130	130
Referred-----	1,250	290	110	200	210	430	-	-
Hospitalized-----	830	180	-	100	120	430	-	-
Certificate given-----	2,150	280	440	200	1,130	110	-	-
No procedure performed-----	1,890	950	-	600	230	110	-	-
<u>Smederevo, Yug.</u>								
Total consultations-----	19,710	8,600	2,810	4,520	950	1,870	-	960
Total procedures-----	33,500	13,120	5,950	7,430	1,710	3,310	-	1,970
Injection given-----	5,280	2,700	870	1,160	70	330	-	150
Blood drawn-----	1,950	450	450	700	150	200	-	-
X-ray ordered-----	2,390	1,090	310	410	220	200	-	160
Prescription given-----	12,260	5,050	1,890	2,740	510	1,360	-	720
Treatment given-----	4,650	1,080	800	1,420	390	570	-	390
Referred-----	3,490	1,180	590	590	150	500	-	470
Hospitalized-----	930	300	140	200	70	140	-	80
Certificate given-----	2,540	1,260	910	220	150	-	-	-
No procedure performed-----	1,150	880	70	200	-	-	-	-
<u>Chittenden, U.S.A.</u>								
Total consultations-----	16,270	5,790	2,620	2,670	1,180	2,030	920	1,060
Total procedures-----	18,780	6,110	3,090	2,670	1,250	2,680	1,360	1,620
Injection given-----	5,070	2,060	400	470	280	940	430	490
Blood drawn-----	960	200	130	200	-	220	140	70
X-ray ordered-----	1,020	260	340	70	70	-	210	70
Prescription given-----	5,050	1,260	670	1,330	350	580	290	560
Treatment given-----	4,190	1,130	940	400	420	730	220	350
Referred-----	1,090	330	400	70	70	150	-	70
Hospitalized-----	950	400	200	130	70	70	70	-
Certificate given-----	460	460	-	-	-	-	-	-
No procedure performed-----	3,040	930	740	600	350	140	210	70

¹Includes osteopaths in Chittenden; similar professions not found in other two areas.

NOTE: Due to rounding, detailed figures may not add to the totals.

Table 11. Numbers and rates for procedures ordered at consultations with doctors¹ during a 2-week period, by age, sex, and type of procedure for the study areas—Con.

[Estimates of frequencies in the total population]

All ages	Under 18 years	18-44 years		45-64 years		65+ years	
		Male	Female	Male	Female	Male	Female
Rate per 1,000 consultations							
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1,090	860	1,330	910	1,480	1,100	1,640	1,300
60	80	340	-	-	-	-	100
60	-	-	60	140	-	680	100
20	-	-	30	50	-	-	100
650	560	580	680	620	720	640	900
50	60	-	-	50	70	320	100
70	60	80	60	90	140	-	-
50	40	-	30	50	140	-	-
130	60	330	60	480	30	-	-
110	200	-	180	100	30	-	-
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1,700	1,520	2,120	1,640	1,800	1,780	-	2,050
270	310	310	260	70	180	-	150
100	50	160	150	160	110	-	-
120	130	110	90	230	110	-	160
620	590	670	600	540	730	-	750
240	120	280	310	410	310	-	400
180	140	210	130	160	270	-	490
50	30	50	40	70	70	-	90
130	150	320	50	170	-	-	-
60	100	20	40	-	-	-	-
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1,150	1,050	1,180	1,000	1,060	1,320	1,470	1,530
310	360	150	170	230	460	460	460
60	30	50	70	-	110	160	60
60	40	130	20	60	-	230	70
310	220	260	500	290	280	310	530
260	190	360	150	350	360	230	330
70	60	150	20	60	70	-	70
60	70	80	50	60	40	80	-
30	80	-	-	-	-	-	-
190	160	280	220	290	70	230	70

Table 12. Numbers and rates for persons and for consultations with health workers¹ other than doctors during a 2-week period, by age, sex, and type of consultation for the study areas

[Estimates of frequencies in the total population]

Area and type of consultation	All ages	Under 18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>								
Total persons-----	81,790	25,070	11,870	13,180	9,830	11,370	3,770	6,700
Persons with one visit or more---	9,560	2,870	1,650	1,600	820	870	580	1,180
Nurse consultations-----	5,750	780	220	390	590	650	2,190	930
Dentist consultations-----	4,520	1,870	890	910	590	-	-	270
Other consultations-----	5,040	1,440	650	590	470	540	290	1,050
<u>Smederevo, Yug.</u>								
Total persons-----	90,370	30,210	18,130	18,100	7,800	8,420	3,110	4,600
Persons with one visit or more---	4,890	1,660	610	1,630	370	150	160	320
Nurse consultations-----	6,610	2,640	210	2,670	250	250	-	580
Dentist consultations-----	1,390	440	230	580	-	-	140	-
Other consultations-----	2,910	230	70	1,330	360	70	90	70
<u>Chittenden, U.S.A.</u>								
Total persons-----	73,800	30,770	11,020	11,490	6,910	7,030	2,630	3,950
Persons with one visit or more---	5,650	2,390	670	800	490	790	220	280
Nurse consultations-----	1,560	660	330	70	140	360	-	-
Dentist consultations-----	3,660	1,460	400	870	140	430	220	140
Other consultations-----	1,980	870	330	130	280	150	70	140

¹Includes public health nurses, visiting nurses, district nurses, office and clinic nurses, health visitors, and midwives.

NOTE: Due to rounding, detailed figures may not add to the totals.

Table 12. Numbers and rates for persons and for consultations with health workers¹ other than doctors during a 2-week period, by age, sex, and type of consultation for the study areas--Con.

[Estimates of frequencies in the total population]

All ages	Under 18 years	18-44 years		45-64 years		65+ years		Standard- ized rate per 1,000 persons
		Male	Female	Male	Female	Male	Female	
Rate per 1,000 persons or consultations								
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
120	110	140	120	80	80	150	180	120
70	30	20	30	60	60	580	140	70
50	70	70	70	60	-	-	40	50
60	60	60	40	50	50	80	160	60
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
50	50	30	90	50	20	50	70	50
70	90	10	150	30	30	-	130	70
10	10	10	30	-	-	50	-	10
30	10	70	40	50	10	30	20	30
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
80	80	60	70	70	110	80	70	80
20	20	30	10	20	50	-	-	20
50	50	40	80	20	60	80	40	50
30	30	30	10	40	20	30	40	30

Table 13. Numbers and rates for persons 1 year of age and over with selected conditions¹ during a year and number of conditions, by age and sex for the study areas

[Estimates of frequencies in the total population]

Area and number of conditions	All ages, 1+ years	1-18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>								
Total persons, 1+ years-----	80,520	23,800	11,870	13,180	9,830	11,370	3,770	6,700
Number of persons with:								
No conditions-----	36,610	13,900	6,710	4,190	4,170	3,030	1,920	2,680
One condition or more-----	43,910	9,900	5,160	8,980	5,660	8,340	1,850	4,010
One condition-----	20,050	5,120	3,620	3,590	2,510	2,810	710	1,670
Two conditions-----	10,730	2,740	880	2,100	1,320	2,380	290	1,030
Three conditions-----	6,760	1,170	440	1,490	890	1,520	710	530
Four conditions-----	3,450	590	110	1,000	470	760	130	400
Five conditions or more-----	2,910	280	110	800	470	870	-	380
Total number of conditions-----	91,780	17,980	7,700	20,970	12,270	19,820	3,950	9,090
<u>Smederevo, Yug.</u>								
Total persons, 1+ years-----	89,520	29,360	18,130	18,100	7,800	8,420	3,110	4,600
Number of persons with:								
No conditions-----	25,570	12,140	6,060	3,530	1,280	1,060	770	730
One condition or more-----	63,940	17,210	12,080	14,560	6,520	7,350	2,340	3,880
One condition-----	22,740	10,210	4,760	3,520	1,670	1,170	660	750
Two conditions-----	13,700	4,340	3,100	3,180	930	940	730	490
Three conditions-----	10,320	1,730	1,510	2,500	1,570	2,040	340	630
Four conditions-----	6,880	680	1,290	1,960	720	1,070	270	890
Five conditions or more-----	10,290	250	1,420	3,400	1,630	2,140	340	1,120
Total number of conditions-----	169,630	28,310	28,870	45,530	21,260	26,050	6,080	13,520
<u>Chittenden, U.S.A.</u>								
Total persons, 1+ years-----	72,730	29,710	11,020	11,490	6,910	7,030	2,630	3,950
Number of persons with:								
No conditions-----	29,940	14,350	4,910	3,940	2,720	2,400	630	980
One condition or more-----	42,790	15,350	6,110	7,540	4,190	4,630	2,000	2,960
One condition-----	19,630	8,580	3,560	2,730	1,600	1,740	790	630
Two conditions-----	10,910	3,850	1,540	1,600	1,260	1,160	500	980
Three conditions-----	5,870	1,860	340	1,470	700	730	220	570
Four conditions-----	2,880	530	330	670	350	500	140	350
Five conditions or more-----	3,500	530	340	1,070	280	500	350	430
Total number of conditions-----	90,580	26,710	10,880	19,100	9,000	10,970	5,080	8,830

See footnote at end of table.

Table 13. Numbers and rates for persons 1 year of age and over with selected conditions¹ during a year and number of conditions, by age and sex for the study areas—Con.

[Estimates of frequencies in the total population]

Area and number of conditions	All ages, 1+ years	1-18 years	18-44 years		45-64 years		65+ years		Standard- ized rate per 1,000 persons
			Male	Female	Male	Female	Male	Female	
<u>Chester, U.K.</u>									
Total persons, 1+ years-----	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Rate per 1,000 persons with:									
No conditions-----	460	580	560	320	420	270	510	400	460
One condition or more-----	540	420	430	680	580	730	490	600	540
One condition-----	250	210	300	270	260	250	190	250	250
Two conditions-----	130	110	70	160	130	210	80	150	130
Three conditions-----	80	50	40	110	90	130	190	80	80
Four conditions-----	40	20	10	80	50	70	30	60	40
Five conditions or more-----	40	10	10	60	50	80	-	60	30
Total number of conditions per 1,000 persons-----	1,140	750	650	1,590	1,250	1,740	1,050	1,360	1,130
Conditions per 1,000 persons with one condition or more-----	2,090	1,810	1,490	2,330	2,170	2,380	2,140	2,260	...
<u>Smederevo, Yug.</u>									
Total persons, 1+ years-----	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Rate per 1,000 persons with:									
No conditions-----	290	410	330	190	160	130	250	160	270
One condition or more-----	710	590	670	180	840	870	750	840	730
One condition-----	250	350	260	190	210	140	210	160	240
Two conditions-----	150	150	170	180	120	110	240	110	150
Three conditions-----	110	60	80	140	200	240	110	140	130
Four conditions-----	80	20	70	110	90	130	90	190	80
Five conditions or more-----	110	10	80	190	210	250	110	240	130
Total number of conditions per 1,000 persons-----	1,890	960	1,590	2,520	2,720	3,090	1,960	2,940	2,030
Conditions per 1,000 persons with one condition or more-----	2,650	1,640	2,390	3,130	3,260	3,540	2,600	3,490	...
<u>Chittenden, U.S.A.</u>									
Total persons, 1+ years-----	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Rate per 1,000 persons with:									
No conditions-----	410	480	440	340	390	340	240	250	390
One condition or more-----	590	520	550	660	610	660	760	750	610
One condition-----	270	290	320	240	230	250	300	160	260
Two conditions-----	150	130	140	140	180	160	190	250	160
Three conditions-----	80	60	30	130	100	100	80	140	80
Four conditions-----	40	20	30	60	50	70	50	90	40
Five conditions or more-----	50	20	30	90	40	70	130	110	60
Total number of conditions per 1,000 persons-----	1,240	900	990	1,660	1,300	1,560	1,930	2,240	1,330
Conditions per 1,000 persons with one condition or more-----	2,120	1,740	1,780	2,530	2,150	2,370	2,530	2,980	...

¹See conditions listed in adult and child questionnaires, appendix I, pages 62 and 70, table III.

NOTE: Due to rounding, detailed figures may not add to the totals.

Table 14. Numbers and rates for persons 1 year of age and over who had not consulted a doctor¹ for selected conditions² during a year and number of conditions, by age and sex for the study areas

[Estimates of frequencies in the total population]

Area and number of unattended conditions	All ages, 1+ years	1-18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>								
Total persons, 1+ years-----	80,520	23,800	11,870	13,180	9,830	11,370	3,770	6,700
Number of persons with:								
One condition or more-----	18,190	3,070	1,870	4,190	2,410	4,000	990	1,660
One condition-----	13,360	2,680	1,430	3,200	1,480	2,700	840	1,030
Two conditions-----	3,770	290	220	800	820	860	150	630
Three conditions or more-----	1,060	90	220	200	120	430	-	-
No unattended conditions-----	62,330	20,730	10,000	8,990	7,410	7,370	2,780	5,040
Total number of unattended conditions-----	24,290	3,550	2,640	5,490	3,470	5,740	1,130	2,290
<u>Smederevo, Yug.</u>								
Total persons, 1+ years-----	89,520	29,360	18,130	18,100	7,800	8,420	3,110	4,600
Number of persons with:								
One condition or more-----	32,620	3,820	6,550	8,920	4,200	4,530	1,550	3,060
One condition-----	18,810	2,970	4,610	5,370	2,170	2,020	590	1,070
Two conditions-----	7,270	850	1,140	2,030	620	1,340	430	860
Three conditions or more-----	6,550	-	800	1,520	1,400	1,170	530	1,130
No unattended conditions-----	56,890	25,530	11,590	9,180	3,610	3,890	1,550	1,540
Total number of unattended conditions-----	57,770	4,670	9,820	15,340	8,900	9,060	3,310	6,670
<u>Chittenden, U.S.A.</u>								
Total persons, 1+ years-----	72,730	29,710	11,020	11,490	6,910	7,030	2,630	3,950
Number of persons with:								
One condition or more-----	17,950	6,110	2,890	3,470	1,400	1,660	1,000	1,410
One condition-----	12,660	4,850	2,150	2,470	980	940	430	840
Two conditions-----	3,580	800	540	600	350	430	430	430
Three conditions or more-----	1,710	470	200	400	70	290	140	140
No unattended conditions-----	54,790	23,590	8,130	8,010	5,510	5,370	1,630	2,540
Total number of unattended conditions-----	26,390	7,910	4,160	5,410	1,880	3,040	1,870	2,120

See footnotes at end of table.

Table 14. Numbers, and rates for persons 1 year of age and over who had not consulted a doctor¹ for selected conditions² during a year and number of conditions, by age and sex for the study areas—Con.

[Estimates of frequencies in the total population]

Area and number of conditions	All ages, 1+ years	1-18 years	18-44 years		45-64 years		65+ years		Standard- ized rate per 1,000 persons, 1+ years
			Male	Female	Male	Female	Male	Female	
<u>Chester, U.K.</u>									
Total persons, 1+ years-----	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Rate per 1,000 persons with:									
One condition or more-----	230	130	160	320	250	350	260	250	230
One condition-----	170	110	120	240	150	240	220	150	170
Two conditions-----	50	10	20	60	80	80	40	90	50
Three conditions or more-----	10	-	20	10	10	40	-	-	10
No unattended conditions-----	770	870	840	680	750	650	740	750	770
Total number of unattended conditions per 1,000 persons-----	300	150	220	420	350	500	300	340	300
Unattended conditions per 1,000 per- sons with one condition or more-----	1,330	1,160	1,410	1,310	1,440	1,430	1,150	1,380	...
<u>Smederevo, Yug.</u>									
Total persons, 1+ years-----	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Rate per 1,000 persons with:									
One condition or more-----	360	130	360	490	540	540	500	660	400
One condition-----	210	100	250	300	280	240	190	230	220
Two conditions-----	80	30	60	110	80	160	140	190	90
Three conditions or more-----	70	-	40	80	180	140	170	250	80
No unattended conditions-----	640	870	640	510	460	460	500	330	600
Total number of unattended conditions per 1,000 persons-----	640	160	540	850	1,140	1,080	1,070	1,450	730
Unattended conditions per 1,000 per- sons with one condition or more-----	1,770	1,220	1,500	1,720	2,120	2,000	2,140	2,180	...
<u>Chittenden, U.S.A.</u>									
Total persons, 1+ years-----	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Rate per 1,000 persons with:									
One condition or more-----	250	210	260	300	200	240	380	360	260
One condition-----	170	160	190	210	140	130	160	210	170
Two conditions-----	50	30	50	50	50	60	160	110	60
Three conditions or more-----	20	20	20	30	10	40	50	40	20
No unattended conditions-----	750	790	740	700	800	760	620	640	740
Total number of unattended conditions per 1,000 persons-----	360	270	380	470	270	430	710	540	390
Unattended conditions per 1,000 per- sons with one condition or more-----	1,470	1,290	1,440	1,560	1,350	1,820	1,860	1,500	...

¹Includes osteopaths in Chittenden; similar professions not found in other two areas.

²See conditions listed in adult and child questionnaires, appendix I, pages 62 and 70, table III.

NOTE: Due to rounding, detailed figures may not add to the totals.

Table 15. Prevalence of 12 selected conditions¹ for adults and children for the study areas

[Estimates of frequencies in the total population]

Selected condition	Chester, U.K.				Smederevo, Yug.				Chittenden, U.S.A.			
	Rank order	Number of persons in sample	Estimated number of persons	Standardized rates per 1,000 persons	Rank order	Number of persons in sample	Estimated number of persons	Standardized rates per 1,000 persons	Rank order	Number of persons in sample	Estimated number of persons	Standardized rates per 1,000 persons
<u>Adults</u>												
Nervousness-----	1	97	10,590	180	1	317	24,510	410	1	171	11,770	270
Arthritis-----	2	81	9,150	150	2	288	22,460	400	2	128	8,940	210
Cough or breathlessness-----	3	75	8,470	150	6	138	10,740	200	4	93	6,320	150
Backache-----	4	68	7,510	130	3	254	19,820	340	3	113	7,620	180
Headaches-----	5	65	6,890	120	4	213	16,400	280	5	86	5,840	130
Varicose veins-----	6	60	6,680	110	9	70	5,330	90	10	43	2,990	70
Skin rash-----	7	56	6,070	110	8	73	5,760	110	6	71	4,780	110
Hemorrhoids-----	8	47	5,280	90	10	53	4,000	70	8	64	4,380	100
Stomach trouble-----	9	39	4,220	70	5	174	13,340	210	7	67	4,560	110
Sore throat or cold---	10	38	4,150	70	7	129	9,910	150	9	48	3,310	80
Boils-----	11	16	1,700	30	12	20	1,540	30	12	14	890	20
Hernia-----	12	8	930	20	11	41	3,390	70	11	15	1,050	70
<u>Children</u>												
Earache-----	1	33	3,200	130	2	54	4,080	140	1	73	4,850	160
Sore throat or cold---	2	32	3,110	130	1	88	6,660	230	3	57	3,790	130
Stomach trouble-----	3	21	2,040	80	3	46	3,740	120	7	29	1,930	70
Measles-----	4	20	1,960	80	4	43	3,110	100	4	39	2,720	80
Cough or breathlessness-----	5	19	1,850	80	5	26	1,980	70	5	33	2,330	80
Skin rash-----	6	19	1,830	80	9	17	1,260	50	2	64	4,320	140
Joint pain-----	7	10	970	40	8	17	1,300	50	9	19	1,260	40
Headaches-----	8	9	880	40	7	20	1,530	60	8	25	1,730	60
Chickenpox-----	9	7	680	30	10	15	1,200	40	6	30	2,000	70
Whooping cough-----	10	6	590	20	6	27	1,950	60	12	4	270	10
Boils-----	11	5	490	20	12	4	300	10	11	5	400	10
Burn or scald-----	12	4	370	20	11	7	530	20	10	14	930	30

		Adults	Children
Coefficient of correlation:	Chester and Smederevo-----	0.82	0.76
	Chester and Chittenden-----	0.90	0.61
	Smederevo and Chittenden---	0.94	0.45
Coefficient of concordance:	All three areas-----	0.94	0.84

¹See conditions listed in adult and child questionnaires, appendix I, pages 62 and 70, table III.

Table 16. Numbers and rates for persons with and without conditions consulting a doctor¹ during a 2-week period and number of conditions for all consultations, by age and sex, for the study areas

[Estimates of frequencies in the total population]

Area, age, and sex	Total persons with 1+ consultations	Persons consulting with:		Rate per 1,000 persons having:		Total conditions	Conditions per 1,000 persons consulting with 1+ conditions
		No conditions	1+ conditions	No conditions	1+ conditions		
<u>Chester, U.K.</u>							
All ages-----	12,440	1,510	10,930	120	880	12,280	1,120
Under 18 years-----	3,890	570	3,330	150	850	3,330	1,000
18-44 years:							
Male-----	890	110	770	130	870	770	1,000
Female-----	2,690	500	2,190	190	810	2,880	1,320
45-64 years:							
Male-----	1,550	120	1,430	70	920	1,550	1,080
Female-----	1,950	220	1,730	110	890	2,270	1,310
65+ years:							
Male-----	400	-	400	-	1,000	400	1,000
Female-----	1,060	-	1,060	-	1,000	1,060	1,000
<u>Smederevo, Yug.</u>							
All ages-----	12,490	1,580	10,910	130	870	11,410	1,050
Under 18 years-----	5,530	1,360	4,180	250	760	4,380	1,050
18-44 years:							
Male-----	1,460	70	1,390	50	950	1,470	1,060
Female-----	3,120	70	3,050	20	980	3,190	1,040
45-64 years:							
Male-----	600	80	510	140	860	510	1,000
Female-----	1,140	-	1,140	-	1,000	1,140	1,000
65+ years:							
Male-----	-	-	-	-	-	-	-
Female-----	640	-	640	-	1,000	730	1,130
<u>Chittenden, U.S.A.</u>							
All ages-----	11,410	3,720	7,690	330	670	9,190	1,190
Under 18 years-----	4,390	1,730	2,660	390	610	2,800	1,050
18-44 years:							
Male-----	1,410	270	1,140	190	810	1,410	1,230
Female-----	2,270	870	1,400	380	620	2,000	1,430
45-64 years:							
Male-----	840	210	630	250	750	770	1,220
Female-----	1,230	360	870	290	710	940	1,080
65+ years:							
Male-----	570	70	500	130	870	500	1,000
Female-----	700	210	490	300	700	780	1,580

¹Includes osteopaths in Chittenden; similar professions not found in other two areas.

NOTE: Due to rounding, detailed figures may not add to the totals.

Table 17. Numbers and rates for persons with activity limitation during a 2-week period and number of days per 1,000 persons, by age and sex for the study areas

[Estimates of frequencies in the total population]

Area and duration	All ages	Under 18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>								
	Number of persons							
Total persons-----	81,790	25,070	11,870	13,180	9,830	11,370	3,770	6,700
Persons with no days-----	72,410	21,290	10,880	11,780	8,930	10,510	3,200	5,800
Persons with 1 day or more----	9,380	3,780	990	1,400	890	870	570	890
Persons with 1-7 days-----	8,020	3,590	990	1,400	420	430	420	760
Persons with 8-13 days-----	200	90	-	-	-	100	-	-
Persons with 14 days or more-----	1,160	90	-	-	470	320	150	130
Days per 1,000 persons-----	...	...	...	...	...	...	...	...
Days per 1,000 persons with activity limitation-----	...	...	...	...	...	...	...	...
<u>Smederevo, Yug.</u>								
Total persons-----	90,370	30,210	18,130	18,100	7,800	8,420	3,110	4,600
Persons with no days-----	71,990	25,270	16,120	13,710	6,000	5,280	2,570	3,040
Persons with 1 day or more----	18,370	4,940	2,010	4,390	1,800	3,130	530	1,570
Persons with 1-7 days-----	13,400	3,790	1,750	3,520	1,030	2,200	180	940
Persons with 8-13 days-----	1,790	750	-	400	250	320	-	70
Persons with 14 days or more-----	3,180	400	260	470	520	620	360	560
Days per 1,000 persons-----	...	...	...	...	...	...	...	...
Days per 1,000 persons with activity limitation-----	...	...	...	...	...	...	...	...
<u>Chittenden, U.S.A.</u>								
Total persons-----	73,800	30,770	11,020	11,490	6,910	7,030	2,630	3,950
Persons with no days-----	65,230	27,380	9,880	9,890	6,420	6,010	2,140	3,520
Persons with 1 day or more----	8,560	3,390	1,140	1,600	490	1,020	500	430
Persons with 1-7 days-----	6,900	3,130	940	1,400	420	580	220	210
Persons with 8-13 days-----	340	130	70	-	-	70	70	-
Persons with 14 days or more-----	1,330	130	130	200	70	360	220	210
Days per 1,000 persons-----	...	...	...	...	...	...	...	...
Days per 1,000 persons with activity limitation-----	...	...	...	...	...	...	...	...

NOTE: Due to rounding, detailed figures may not add to the totals.

Table 17. Numbers and rates for persons with activity limitation during a 2-week period and number of days per 1,000 persons, by age and sex for the study areas—Con.

[Estimates of frequencies in the total population]

All ages	Under 18 years	18-44 years		45-64 years		65+ years		Standard-ized rate per 1,000 persons
		Male	Female	Male	Female	Male	Female	
Rate per 1,000 persons								
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
890	850	920	890	910	920	850	870	890
110	150	80	110	90	80	150	130	110
100	150	80	110	40	40	110	110	100
10	-	-	-	10	10	-	-	-
10	-	-	-	50	30	40	20	10
500	460	160	240	830	590	1,150	750	490
4,340	3,020	1,890	2,280	9,200	7,750	7,630	5,590	...
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
790	820	890	760	770	630	830	660	780
210	160	110	240	230	370	170	340	220
160	130	100	190	130	260	60	200	150
20	30	-	20	30	40	-	20	20
30	10	10	30	70	70	110	120	40
1,220	880	530	1,220	1,680	2,460	1,920	2,690	1,360
6,010	5,390	4,760	5,030	7,280	6,660	1,170	7,900	...
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
880	890	900	860	930	860	810	890	880
120	110	100	140	70	140	190	110	120
90	100	80	120	60	80	80	50	90
10	-	10	-	-	10	30	-	10
20	-	10	20	10	50	80	50	20
550	350	480	640	280	1,030	1,720	1,030	620
4,730	3,170	4,640	4,610	3,980	7,120	9,110	9,500	...

Table 18. Numbers and rates for persons with bed disability during a 2-week period and number of days per 1,000 persons, by age and sex for the study areas

[Estimates of frequencies in the total population]

Area and duration	All ages	Under 18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>								
	Number of persons							
Total persons-----	81,790	25,070	11,870	13,180	9,830	11,370	3,770	6,700
Persons with no days-----	77,120	23,150	11,100	12,580	9,590	10,620	3,640	6,430
Persons with 1 day or more----	4,670	1,920	770	600	230	760	130	270
Persons with 1 day-----	2,680	1,260	650	400	-	110	130	130
Persons with 2-7 days-----	1,880	660	110	200	230	540	-	130
Persons with 8-13 days-----	-	-	-	-	-	-	-	-
Persons with 14 days or more-----	110	-	-	-	-	110	-	-
Days per 1,000 persons-----	...	...	...	...	...	...	...	...
Days per 1,000 persons with bed disability-----	...	...	...	...	...	...	...	...
<u>Smederevo, Yug.</u>								
Total persons-----	90,370	30,210	18,130	18,100	7,800	8,420	3,110	4,600
Persons with no days-----	80,940	26,580	17,350	16,310	6,680	7,510	2,930	3,590
Persons with 1 day or more----	9,420	3,630	780	1,790	1,130	910	180	1,010
Persons with 1 day-----	1,180	600	-	350	170	70	-	-
Persons with 2-7 days-----	6,190	2,670	690	890	620	520	-	790
Persons with 8-13 days-----	1,020	210	-	400	80	250	-	70
Persons with 14 days or more-----	1,030	150	90	150	250	70	180	150
Days per 1,000 persons-----	...	...	...	...	...	...	...	...
Days per 1,000 persons with bed disability-----	...	...	...	...	...	...	...	...
<u>Chittenden, U.S.A.</u>								
Total persons-----	73,800	30,770	11,020	11,490	6,910	7,030	2,630	3,950
Persons with no days-----	69,000	28,640	10,350	10,420	6,630	6,590	2,490	3,870
Persons with 1 day or more----	4,800	2,130	670	1,070	280	430	140	70
Persons with 1 day-----	2,230	1,200	340	330	70	220	-	70
Persons with 2-7 days-----	2,090	800	330	600	210	70	70	-
Persons with 8-13 days-----	70	70	-	-	-	-	-	-
Persons with 14 days or more-----	410	70	-	130	-	140	70	-
Days per 1,000 persons-----	...	...	...	...	...	...	...	...
Days per 1,000 persons with bed disability-----	...	...	...	...	...	...	...	...

NOTE: Due to rounding, detailed figures may not add to the totals.

Table 18. Numbers and rates for persons with bed disability during a 2-week period and number of days per 1,000 persons, by age and sex for the study areas—Con.

[Estimates of frequencies in the total population]

All ages	Under 18 years	18-44 years		45-64 years		65+ years		Standard- ized rate per 1,000 persons
		Male	Female	Male	Female	Male	Female	
Rate per 1,000 persons								
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
940	920	930	950	980	930	970	960	940
60	80	70	50	20	70	30	40	60
30	50	60	30	-	10	30	20	30
20	30	10	20	20	50	-	20	20
-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
110	110	80	70	60	270	30	160	110
1,990	1,340	1,290	1,500	2,500	4,010	1,000	4,000	...
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
900	880	960	900	860	890	940	770	890
100	120	40	100	140	110	60	230	110
10	20	-	20	20	10	-	-	10
70	90	40	50	80	60	-	170	70
10	10	-	20	10	30	-	20	10
10	10	-	10	30	10	60	30	10
570	570	210	560	930	650	800	1,390	620
5,520	4,740	4,830	5,240	6,430	6,070	4,000	6,330	...
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
930	930	940	910	960	940	940	980	940
70	70	60	90	40	60	60	20	60
30	40	30	30	10	30	-	20	30
30	30	30	50	30	10	30	-	30
-	-	-	-	-	-	-	-	-
10	-	-	10	-	20	30	-	10
200	160	110	390	90	340	460	20	210
3,100	2,290	1,800	4,230	2,250	5,440	8,500	1,000	...

Table 19. Visual acuity, use of eyeglasses, and eye examinations among adults 18 years of age and over, by age and sex for the study areas

[Estimates of frequencies in the total population]

Area and vision characteristic	All ages, 18+ years	18-44 years		45-64 years		65+ years	
		Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>							
	Number of persons						
Total adults, 18+ years-----	56,720	11,870	13,180	9,830	11,370	3,770	6,700
Persons unable to "read newspaper" without glasses-----	19,940	870	890	4,010	6,930	2,930	4,300
Persons unable to "recognize friend across street" without glasses-----	6,900	660	1,300	910	2,170	420	1,440
Persons using glasses-----	36,250	3,400	5,000	7,820	10,180	3,770	6,070
Persons without eye examination during last 12 months-----	46,850	9,890	11,780	7,790	9,310	2,650	5,420
<u>Smederevo, Yug.</u>							
Total adults, 18+ years-----	60,160	18,130	18,100	7,800	8,420	3,110	4,600
Persons unable to "read newspaper" without glasses-----	15,780	750	810	4,860	5,160	2,220	1,990
Persons unable to "recognize friend across street" without glasses-----	5,210	310	480	810	1,570	590	1,450
Persons using glasses-----	13,390	940	990	3,600	3,930	2,040	1,900
Persons without eye examination during last 12 months-----	52,710	15,260	16,410	6,810	7,220	3,030	3,970
<u>Chittenden, U.S.A.</u>							
Total adults, 18+ years-----	43,030	11,020	11,490	6,910	7,030	2,630	3,950
Persons unable to "read newspaper" without glasses-----	15,330	470	1,000	3,910	4,780	1,640	3,520
Persons unable to "recognize friend across street" without glasses-----	6,720	1,280	1,600	560	1,520	280	1,480
Persons using glasses-----	25,860	3,430	5,610	5,300	6,300	1,770	3,450
Persons without eye examination during last 12 months-----	31,360	7,860	9,020	4,820	4,850	1,850	2,960

NOTE: Due to rounding, detailed figures may not add to the totals.

Table 19. Visual acuity, use of eyeglasses, and eye examinations among adults 18 years of age and over, by age and sex for the study areas—Con.

[Estimates of frequencies in the total population]

All ages, 18+ years	18-44 years		45-64 years		65+ years		Standard- ized rate per 1,000 persons
	Male	Female	Male	Female	Male	Female	
Rate per 1,000 persons							
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
350	70	70	410	610	780	640	330
120	50	100	90	190	110	220	110
640	290	380	800	890	1,000	910	610
830	830	890	790	820	700	810	830
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
260	40	40	620	610	710	430	330
90	20	30	100	190	190	310	100
220	50	50	460	470	660	410	270
880	840	910	870	860	980	860	880
1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
360	40	90	560	680	620	890	370
160	120	140	80	220	110	370	160
600	310	490	770	900	670	870	610
730	710	780	700	690	700	750	730

Table 20. Numbers and rates of conditions among 12 selected conditions¹ reported by adults 18 years of age and over, by degree of discomfort and whether or not a doctor² was consulted during a 2-week period for the study areas

[Estimates of frequencies in the total population]

Degree of discomfort	Chester, U.K.			Smederevo, Yug.			Chittenden, U.S.A.		
	Doctor consultations during a 2-week period								
	Total	One or more	None	Total	One or more	None	Total	One or more	None
Number of conditions									
Total conditions reported---	71,650	5,770	65,880	137,400	5,300	132,100	62,900	4,440	58,460
Conditions with great discomfort--	13,380	2,820	10,560	24,030	3,470	20,560	14,060	2,900	11,160
Conditions with some discomfort---	32,430	2,510	29,920	64,420	1,680	62,740	37,500	1,270	36,230
Conditions with no discomfort----	25,840	440	25,400	48,950	150	48,800	11,340	270	11,070
Rate of doctor consultations per 1,000 conditions									
Total conditions reported---	1,000	80	920	1,000	40	960	1,000	70	930
Conditions with great discomfort--	1,000	210	790	1,000	140	860	1,000	210	790
Conditions with some discomfort---	1,000	80	920	1,000	30	970	1,000	30	970
Conditions with no discomfort----	1,000	20	980	1,000	-	1,000	1,000	20	980
Rate of relative discomfort per 1,000 conditions									
Total conditions reported---	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Conditions with great discomfort--	190	490	160	170	650	160	220	650	190
Conditions with some discomfort---	450	430	450	460	320	460	600	290	610
Conditions with no discomfort----	360	80	390	370	30	380	280	60	200

¹See conditions listed in adult questionnaire, appendix I, page 62, table III.

²Includes osteopaths in Chittenden; similar professions not found in other two areas.

NOTE: Total numbers of adults 18 years of age and over were 56,720 in Chester; 60,160 in Smederevo; and 43,030 in Chittenden.

Due to rounding, detailed figures may not add to the totals.

Table 21. Hypothetical behavior for a hypothetical condition compared with actual behavior for an actual condition¹ for adults for the study areas

Area and condition	Hypothetical condition		Actual condition causing discomfort	
	Number re-sponding	Percent who would not consult doctor	Number re-sponding	Percent who have never consulted doctor
<u>Chester, U.K.</u>				
Cough or breathlessness-----	435	6	50	20
Nervousness-----	412	12	74	31
Rusty nail injury-----	511	4	2	2
<u>Smederevo, Yug.</u>				
Cough or breathlessness-----	639	9	91	35
Nervousness-----	458	6	227	46
Rusty nail injury-----	775	7	2	2
<u>Chittenden, U.S.A.</u>				
Cough or breathlessness-----	576	10	78	26
Nervousness-----	465	18	147	34
Rusty nail injury-----	627	5	2	2

¹See appendix I, adult questionnaire, questions 17-19 on page 64 for hypothetical conditions and table III on page 62 for actual conditions.

²Not applicable because rusty nail injury was not one of the conditions used in the questionnaire.

Table 22. Utilization of hospitals during a year, by age and sex for the study areas

[Estimates of frequencies in the total population]

Area and hospital utilization	All ages	Under 18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>								
Total persons-----	81,790	25,070	11,870	13,180	9,830	11,370	3,770	6,700
Total number of hospital days--	72,760	21,610	430	14,720	16,410	4,970	5,110	9,500
Number of persons hospitalized-	5,840	1,850	110	2,500	560	430	150	250
Number of admissions-----	6,760	1,940	110	2,600	910	540	150	510
Days per 1,000 persons-----	890	860	40	1,120	1,670	440	1,360	1,420
Mean length of stay in days----	11	11	4	6	18	9	35	18
<u>Smederevo, Yug.</u>								
Total persons-----	90,370	30,210	18,130	18,100	7,800	8,420	3,110	4,600
Total number of hospital days--	132,050	47,750	21,350	32,770	21,610	4,070	-	4,500
Number of persons hospitalized-	7,930	3,220	1,010	2,670	520	330	-	170
Number of admissions-----	9,500	3,940	1,090	3,200	680	330	-	250
Days per 1,000 persons-----	1,460	1,580	1,180	1,810	2,770	480	-	980
Mean length of stay in days----	14	12	20	10	32	12	-	18
<u>Chittenden, U.S.A.</u>								
Total persons-----	73,800	30,770	11,020	11,490	6,910	7,030	2,630	3,950
Total number of hospital days--	93,660	12,940	17,020	15,350	18,650	7,510	7,560	14,630
Number of persons hospitalized-	10,020	3,250	810	2,470	910	1,080	720	780
Number of admissions-----	11,350	3,320	880	2,670	1,390	1,370	940	780
Days per 1,000 persons-----	1,270	420	1,540	1,340	2,700	1,070	2,870	3,700
Mean length of stay in days----	8	4	19	6	13	5	8	19

NOTE: Due to rounding, detailed figures may not add to the totals.

Table 23. Numbers and rates for persons hospitalized during a year and number of admissions, by age and sex for the study areas

[Estimates of frequencies in the total population]

Area and number of admissions	All ages	Under 18 years	18-44 years		45-64 years		65+ years	
			Male	Female	Male	Female	Male	Female
<u>Chester, U.K.</u>								
Total persons-----	81,790	25,070	11,870	13,180	9,830	11,370	3,770	6,700
Number of persons with:								
One admission or more-----	5,840	1,850	110	2,500	560	430	150	250
One admission-----	4,660	1,750	110	2,000	210	320	150	110
Two admissions-----	1,050	90	-	500	350	110	-	-
Three admissions or more-----	130	-	-	-	-	-	-	130
Total number of admissions-----	6,760	1,940	110	2,600	910	540	150	510
<u>Smederevo, Yug.</u>								
Total persons-----	90,370	30,210	18,130	18,100	7,800	8,420	3,110	4,600
Number of persons with:								
One admission or more-----	7,930	3,220	1,010	2,670	520	330	-	170
One admission-----	6,440	2,510	920	2,220	370	330	-	80
Two admissions-----	1,410	720	90	370	150	-	-	80
Three admissions or more-----	80	-	-	80	-	-	-	-
Total number of admissions-----	9,500	3,940	1,090	3,200	680	330	-	250
<u>Chittenden, U.S.A.</u>								
Total persons-----	73,800	30,770	11,020	11,490	6,910	7,030	2,630	3,950
Number of persons with:								
One admission or more-----	10,020	3,250	810	2,470	910	1,080	720	780
One admission-----	8,830	3,180	670	2,270	560	790	580	780
Two admissions-----	970	70	140	200	210	290	70	-
Three admissions or more-----	210	-	-	-	140	-	70	-
Total number of admissions-----	11,350	3,320	880	2,670	1,390	1,370	940	780

See note at end of table.

Table 23. Numbers and rates for persons hospitalized during a year and number of admissions, by age and sex for the study areas—Con.

[Estimates of frequencies in the total population]

Area and number of admissions	All ages	Under 18 years	18-44 years		45-64 years		65+ years		Standard- ized rate per 1,000 persons
			Male	Female	Male	Female	Male	Female	
<u>Chester, U.K.</u>									
Total persons-----	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Rate per 1,000 persons with: One admission or more-----	70	70	10	190	60	40	40	40	70
One admission-----	60	70	10	150	20	30	40	20	60
Two admissions-----	10	-	-	40	40	10	-	20	10
Three admissions or more----	-	-	-	-	-	-	-	-	-
Total number of admissions per 1,000 persons-----	80	80	10	200	90	50	40	80	90
<u>Smederevo, Yug.</u>									
Total persons-----	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Rate per 1,000 persons with: One admission or more-----	90	110	50	150	70	40	-	40	80
One admission-----	70	80	50	120	50	40	-	20	60
Two admissions-----	20	20	-	20	20	-	-	20	10
Three admissions or more----	-	-	-	-	-	-	-	-	-
Total number of admissions per 1,000 persons-----	100	130	60	180	90	40	-	50	100
<u>Chittenden, U.S.A.</u>									
Total persons-----	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Rate per 1,000 persons with: One admission or more-----	140	100	70	210	130	150	270	200	140
One admission-----	120	100	60	200	80	110	220	200	120
Two admissions-----	10	-	10	20	30	40	30	-	20
Three admissions or more----	-	-	-	-	20	-	30	-	-
Total number of admissions per 1,000 persons-----	150	110	80	230	200	190	360	200	170

NOTE: Due to rounding, detailed figures may not add to the totals.

APPENDIX I. QUESTIONNAIRES

INTERNATIONAL COLLABORATIVE STUDY OF MEDICAL CARE UTILIZATION Feasibility Study

Division of Medical Care and Hospitals of
The Johns Hopkins University

Department of Epidemiology and Community Medicine of the
University of Vermont

*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 purpose of this survey.*

A HOUSEHOLD HEALTH SURVEY																																							
April 1965																																							
I am _____ from _____ We are doing a health study in this area. Your house was chosen in our sample and we would like to talk with you. We are trying to get a picture of the medical services in this area and how people use them. The information you give us will be confidential. First I would like to ask you some questions about your living arrangements and who lives in your household.																																							
1. Household address or description of its location					<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3" style="text-align: center;">Area</th> <th colspan="3" style="text-align: center;">Household number</th> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>			Area			Household number									<table style="width: 100%;"> <tr> <td style="width: 50%; text-align: center;">2 Coder</td> <td style="width: 50%; text-align: center;">1 Coder</td> </tr> <tr><td style="text-align: center;">1</td><td style="text-align: center;">1</td></tr> <tr><td style="text-align: center;">2</td><td style="text-align: center;">2</td></tr> <tr><td style="text-align: center;">3</td><td style="text-align: center;">3</td></tr> <tr><td style="text-align: center;">4</td><td style="text-align: center;">4</td></tr> <tr><td style="text-align: center;">5</td><td style="text-align: center;">5</td></tr> <tr><td style="text-align: center;">6</td><td style="text-align: center;">6</td></tr> <tr><td style="text-align: center;">7</td><td style="text-align: center;">7</td></tr> <tr><td style="text-align: center;">8</td><td style="text-align: center;">8</td></tr> </table>		2 Coder	1 Coder	1	1	2	2	3	3	4	4	5	5	6	6	7	7	8	8
Area			Household number																																				
2 Coder	1 Coder																																						
1	1																																						
2	2																																						
3	3																																						
4	4																																						
5	5																																						
6	6																																						
7	7																																						
8	8																																						
2. Mailing address (if different from item 1)																																							
3. Type of dwelling																																							
Detached house (including farmhouse) 1 Semi-detached house/duplex/row house/terrace 2 Flat/maisonette/apartment 3 Boarding house/rooming house/bedsitters 4					Residential hotel/small private hotel 5 Caravan/trailer/boat 6 Other dwelling 7 (Specify) _____																																		
4. Record of calls																																							
Call No.	Date		Hour of Day	Interview obtained		IF YES, ASK: Who was interviewed?	Who was data obtained about?	Notes																															
	Month	Day		No	Yes																																		
1				N	Y																																		
2				N	Y																																		
3				N	Y																																		
4				N	Y																																		
5				N	Y																																		
6				N	Y																																		
7				N	Y																																		
5. Final result																																							
All household interviews completed 1 Household interviews partially completed 2 No interviews obtained 3																																							
6. Reason why no interview obtained																																							
6.1 Refusal (Specify below) 1			6.2 Vacant-nonseasonal 1			6.3 Demolished 1																																	
No one at home after repeated calls 2			Vacant-seasonal 2			In sample by mistake 2																																	
Temporarily absent 3			Usual residence elsewhere 3			Eliminated in subsample 3																																	
Other reason (but should be included in sample) (Specify below) 4						Other (but to be excluded from sample) (Specify below) 4																																	
Reason for noninterview: _____																																							
Signature of interviewer				Code		FOR OFFICE USE ONLY																																	
						☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8																																	

B										Area		Household number									
7.1 What is the name of the head of this household? (Enter name in first line) 7.2 What are the names of all other persons who live here? (List all persons who live here) 7.3 I have listed (Read names). Is there anyone else staying here now, such as friends, relatives, or roomers? ☐ No ☐ Yes* 7.4 Have I missed anyone who USUALLY lives here but is now away from home? ☐ No ☐ Yes* 7.5 Do any of the people in this household have a home anywhere else? ☐ No ☐ Yes* 7.6 Is any member of this household now in a hospital or nursing home? In an institution? ☐ No ☐ Yes* 7.7 Are there any (other) babies? If so, add to list. ☐ No ☐ Yes* * Apply household membership rules																					
Code	Name		Relationship to head of household	Sex	Age last birthday**	Marital Status										Non-interview					
	Last name	First name				Code	1	2	Age code	Never married					Other absent (Specify)					Refusal (Specify)	Other non-interview (Specify)
										1	2	3	4	5	1	2	3	4	5		
01			HEAD	1	M F																
02					M F																
03					M F																
04					M F																
05					M F																
06					M F																
07					M F																
08					M F																
09					M F																
10					M F																
11					M F																
12					M F																
13					M F																
14					M F																
15					M F																

**In months for infants under 1 year of age; in years for all other persons.

RELATIONSHIP CODE

Head of household 1	Partner of head 5
Spouse of head 2	Servant 6
Child/child-in-law/stepchild 3	Roomer/boarder 7
Parent/parent-in-law . . . 4	Grandchild 8
	Other related person . . . 9

AGE CODE

Under 1 year . . . 00	20 - 24 06	50 - 54 12
1 - 4 01	25 - 29 07	55 - 64 13
5 - 9 02	30 - 34 08	65 - 69 14
10 - 14 03	35 - 39 09	70 - 74 15
15 - 17 04	40 - 44 10	75 or over . . . 16
18 - 19 05	45 - 49 11	

2	1
Coder	Coder
13	13
14	14
15	15
16	16
17	17
18	18
19	19

20-25	20-25
26-31	26-31
32-37	32-37
38-43	38-43
44-49	44-49
50-55	50-55
56-61	56-61
62-67	62-67
68-73	68-73
74-79	74-79
80-85	80-85
86-91	86-91
92-97	92-97
98-103	98-103
104-109	104-109
110-115	110-115
116-121	116-121
122-127	122-127
128-133	128-133
134-139	134-139
140-145	140-145
146-151	146-151

ADULT HEALTH SURVEY				Interview _____ of _____ Interviews			
Area		Household		Indiv.		Respondent	
FOR INTERVIEWS WITH ALL ADULTS OR MARRIED PERSONS UNDER 18 YEARS <i>Use a separate adult health survey for each individual</i>							
Person covered by this interview							
_____ <i>Last name</i>		_____ <i>First name</i>		Person covered was respondent ☐ No ☐ Yes			
Respondent, if different from person covered by this interview							
_____ <i>Last name</i>		_____ <i>First name</i>					
In the 2 weeks ending yesterday (midnight) (Show marked calendar) did you talk to/consult a medical doctor about your health...							
.1 at his office/surgery?		☐ No ☐ Yes How many times? _____		_____ <i>Last name of doctor</i>		_____ <i>Initials</i>	
				_____ <i>Address</i>			
.2 in a hospital emergency room/casualty department		☐ No ☐ Yes How many times? _____		_____ <i>Last name of doctor</i>		_____ <i>Initials</i>	
				_____ <i>Address</i>			
.3 in a hospital out-patient clinic?		☐ No ☐ Yes How many times? _____		_____ <i>Name of hospital</i>		_____ <i>Address</i>	
.4 at work or at an industrial clinic? ...		☐ No ☐ Yes How many times? _____		_____ <i>Name of hospital or clinic</i>		_____ <i>Address</i>	
.5 at any other clinic or health center? ...		☐ No ☐ Yes How many times? _____		_____ <i>Name of company or clinic</i>		_____ <i>Address</i>	
.6 at home?		☐ No ☐ Yes How many times? _____		_____ <i>Name of clinic</i>		_____ <i>Address</i>	
.7 anywhere else? (Specify)		☐ No ☐ Yes How many times? _____		_____ <i>Last name of doctor</i>		_____ <i>Initials</i>	
				_____ <i>Address</i>			
.8 over the telephone? ..		☐ No ☐ Yes How many times? _____		_____ <i>Last name of doctor or place</i>		_____ <i>Initials</i>	
				_____ <i>Address</i>			
TOTAL NUMBER OF CONSULTATIONS							
If no consultations in question 1, skip to question 4, page 3.							
Record each consultation mentioned in question 1 in Table 1, page 3, using one column for each consultation.							
Record any overnight stay in hospital/nursing home mentioned, in question 1, in Table IV, page 5.							
2.1 If doctor was consulted in question 1, skip to question 3, below.							
Have you seen/consulted a doctor about your health at any time in the last 12 months? ☐ No ☐ Yes							
2.2 IF NO, ASK:							
When did you last see/consult a doctor? 1 year, less than 3 years 3 years, less than 5 years 5 years or more							
3.1 Do you have a personal doctor you usually go to? ☐ No ☐ Yes							
3.2 IF YES, ASK:							
Who is he? 1. _____							
		_____ <i>Last name of doctor</i>		_____ <i>Initials</i>		_____ <i>Address</i>	
3.3 If more than one doctor is mentioned, ASK:							
Which one do you usually see/consult about most of your health problems? 2. _____							
		_____ <i>Last name of doctor</i>		_____ <i>Initials</i>		_____ <i>Address</i>	
1 2 3 None 3. _____							
		_____ <i>Last name of doctor</i>		_____ <i>Initials</i>		_____ <i>Address</i>	

2
Coder

1
Coder

1 1

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11 11

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15 15

16 16

Table 1 – DOCTOR VISITS AND CONSULTATIONS MENTIONED IN QUESTION 1							
Now I have a few more questions about your visits/consultations with the doctor.							
		1		2		3	
1.	Place of visit. Code from question 1.						
2.	Was that in the last 7 days or the 7 days before? (Show marked calendar)	Last 7 days 1 7 days before that 2		Last 7 days 1 7 days before that 2		Last 7 days 1 7 days before that 2	
3.1	What was the main reason for seeing/consulting the doctor?						
3.2	If no condition or symptom was mentioned, ASK: Did you see/consult him because you had any symptoms/complaints?	No Yes		No Yes		No Yes	
3.3	IF YES, ASK: What was it? (Specify)						
3.4	IF NO, ASK: Was this a follow-up visit/consultation for an earlier illness?	No Yes		No Yes		No Yes	
3.5	IF YES, ASK: What was it? (Specify)						
4.	At that visit/consultation did anyone . . .						
	give you an injection?	No Yes		No Yes		No Yes	
	take blood for a test?	No Yes		No Yes		No Yes	
	take an X-ray?	No Yes		No Yes		No Yes	
	suggest you see another doctor?	No Yes		No Yes		No Yes	
	arrange for you to go to the hospital?	No Yes		No Yes		No Yes	
	give you a certificate?	No Yes		No Yes		No Yes	
	give you a prescription or medicine?	No Yes		No Yes		No Yes	
	use any other treatment? (Specify)	No Yes		No Yes		No Yes	
5.1	Did anyone suggest that you see the doctor for that visit/consultation?	No Yes		No Yes		No Yes	
5.2	IF YES, ASK: Who suggested you see/consult the doctor . . .						
	the doctor himself?	No Yes		No Yes		No Yes	
	another doctor?	No Yes		No Yes		No Yes	
	a friend?	No Yes		No Yes		No Yes	
	husband/wife?	No Yes		No Yes		No Yes	
	other relative?	No Yes		No Yes		No Yes	
	anyone else? (Specify)	No Yes		No Yes		No Yes	
6.1	Was any of this visit/consultation paid for by your employer, workmen's compensation, insurance, welfare, or the health department?	No Yes		No Yes		No Yes	
6.2	IF YES, ASK: Does that cover all or part of the expenses?	All	Part	All	Part	All	Part
		1	2	1	2	1	2

If condition mentioned in question 3 of Table I, record on Table III, or if condition already listed on Table III, circle number in left-hand column next to that condition.

1A variation of this question was asked in Chester and Smederevo; see page 72.

		No	Yes	Who? (Specify)	2 Coder	1 Coder
4. In the last 2 weeks ending yesterday (midnight), in addition to what you have already told me, did anyone . . .	give you an injection?	☐	☐	_____	☐	☐
	take blood for a test?	☐	☐	_____	☐	☐
	take an X-ray?	☐	☐	_____	☐	☐
5. During the same 2 weeks did you see/consult any of the following persons ABOUT YOUR HEALTH?						
1. Public health nurse/visiting nurse/district nurse/health visitor in the home	No ☐ Yes ☐	How many times? _____	6. Optometrist/optician	No ☐ Yes ☐	How many times? _____	☐
2. Nurse in doctor's office, clinic, or outpatient department apart from a visit to a doctor	No ☐ Yes ☐	_____	7. Dentist	No ☐ Yes ☐	_____	☐
3. Chiropodist/podiatrist	No ☐ Yes ☐	_____	8. Any other health worker (e.g., a midwife)	No ☐ Yes ☐	_____	☐
4. Chiropractor	No ☐ Yes ☐	_____	(Specify) _____			☐
5. Social or welfare worker	No ☐ Yes ☐	_____	9. Did you ask advice from a pharmacist/druggist/chemist?	No ☐ Yes ☐	_____	☐
TOTAL NUMBER OF CONSULTATIONS					☐	☐
If no visits/consultations for questions 4 or 5, skip to question 6.1, below. Record each visit/consultation mentioned in question 5, on Table II, using one column for each visit/consultation.						
Table II – OTHER VISITS OR CONSULTATIONS MENTIONED IN QUESTION 5						
1. Type of health worker? (Code from question 5.)	1	2	3			
2. Was that in the last 7 days or the 7 days before?	Last 7 days 1 7 days before that . . . 2	Last 7 days 1 7 days before that . . . 2	Last 7 days 1 7 days before that . . . 2			
3.1 What was the main reason for seeing the . . . ?						
3.2 If no condition or symptom was mentioned, ASK: Did you see/visit . . . because you had any symptoms/complaints?	No Yes	No Yes	No Yes			
3.3 IF YES, ASK: What was it? (Specify)						
4. Have you ever seen/consulted a doctor about this?	No Yes	No Yes	No Yes			
5. Did . . . (name health worker) suggest you see/consult a doctor?	No Yes	No Yes	No Yes			
If condition mentioned on Table II, record on Table III, or if condition already listed on Table III, circle number in left-hand column next to that condition.						
6.1 During this last 2 weeks since . . . were there any days when you were not able to carry on your normal daily activities because of illness?	☐ No ☐ Yes	IF YES, ASK: How many different days altogether during the 2 weeks? _____				☐
		How many of those were during the 7 days since last . . . ? _____				☐
6.2 During those 2 weeks were you in bed anytime because of illness?	☐ No ☐ Yes	IF YES, ASK: On how many different days were you in bed all or part of the day? _____				☐
6.3 IF YES TO 6.1 OR 6.2, ASK: What was the matter with you? _____		How many of those were during the 7 days since last . . . ? _____				☐
If condition mentioned in question 6.3, record on Table III, or if condition already listed on Table III, circle number in left-hand column next to that condition.						

Table III - CONDITIONS

Condition number	Here's something a little different, although we may have talked about some of these problems before. Over the last 12 months, have you had any of these health problems at any time, that is during the past year? (Go through list first, then ask all questions across page for each "Yes.")	No or Yes	In the last 2 weeks had it bothered you . . . a great deal somewhat very little not at all?	Have you ever seen a doctor about this? IF YES, ASK: When was the last time . . . In the last 2 weeks in the last 12 months more than a year ago? Never	IF NEVER, ASK: Why was that? If more than a year ago, ASK: How does it happen that you haven't been since?	Apart from a doctor, have you ever asked for any advice or help about this from anyone else like a nurse, your husband, or wife, a friend, relative, etc.? (Specify)	2	1
							Coder	Coder
			1 2 3 4	1 2 3 4			32	32
							33	33
							34	34
							35	35
1	Rupture or hernia	N Y	1 2 3 4	1 2 3 4		N Y	11-15	11-15
2	Varicose veins	N Y	1 2 3 4	1 2 3 4		N Y	16-20	16-20
3	Unusual shortness of breath, or wheezing or cough	N Y	1 2 3 4	1 2 3 4		N Y	21-25	21-25
4	Frequent stomach trouble or vomiting, or diarrhea	N Y	1 2 3 4	1 2 3 4		N Y	26-30	26-30
5	Repeated attacks of back-ache, or backstrain, or lumbago, or sciatica	N Y	1 2 3 4	1 2 3 4		N Y	31-35	31-35
6	Repeated attacks of rheumatism, arthritis, or other joint pain	N Y	1 2 3 4	1 2 3 4		N Y	36-40	36-40
7	Frequent nervousness, or worry, or depression, or trouble sleeping	N Y	1 2 3 4	1 2 3 4		N Y	41-45	41-45
8	WOMEN ONLY: Unusual or excessive "female" bleeding or discharge	N Y	1 2 3 4	1 2 3 4		N Y	46-50	46-50
	During the past 12 months, have you had any of these?							
9	Skin rash	N Y	1 2 3 4	1 2 3 4		N Y	11-15	11-15
10	Boils	N Y	1 2 3 4	1 2 3 4		N Y	16-20	16-20
11	Piles, or hemorrhoids or rectal bleeding	N Y	1 2 3 4	1 2 3 4		N Y	21-25	21-25
12	Frequent sore throats or colds	N Y	1 2 3 4	1 2 3 4		N Y	26-30	26-30
13	Frequent severe headaches	N Y	1 2 3 4	1 2 3 4		N Y	31-35	31-35
14		N Y	1 2 3 4	1 2 3 4		N Y	36-40	36-40
15		N Y	1 2 3 4	1 2 3 4		N Y	41-45	41-45
16		N Y	1 2 3 4	1 2 3 4		N Y	46-50	46-50
17		N Y	1 2 3 4	1 2 3 4		N Y	51-55	51-55
18		N Y	1 2 3 4	1 2 3 4		N Y	56-60	56-60

7.1 Since January 1st, 1964, have you been in a hospital or nursing home, for overnight or longer? ☐ No ☐ Yes
 IF NO: Skip to question 8, below

7.2 IF YES, ASK: _____ How many times? _____

COMPLETE TABLE IV (Enter most recent admission first)

Table IV – HOSPITAL/NURSING HOME ADMISSIONS¹

Admission number	When was the . . . time you entered?		How many nights were you there?	For what condition were you there? (Try to get precise description or medical name)	Did you have an operation?	IF YES, ASK: What was the name of the operation?	What is the name and address of the hospital or nursing home you were in?	Was the cost of this admission covered by your employer, workmen's compensation, insurance, welfare or the health department?			
	Mo.	Yr.						Code	None	All	Part
1					N			1	2	3	4
2					N			1	2	3	4
3					N			1	2	3	4
4					N			1	2	3	4
5					N			1	2	3	4
6					N			1	2	3	4
7					N			1	2	3	4
8					N			1	2	3	4

Now we would like to ask you some other questions about your health.

VISION

8.1 Have you had your eyes tested for vision by any doctor, or ophthalmologist/oculist, or optometrist, or optician in the last 12 months? ☐ No ☐ Yes

8.2 IF YES, ASK:
Who did you see most recently?
 Last name _____ Initials _____
 Address _____

9.1 Do you use glasses at all? ☐ No ☐ Yes

9.2 IF YES, ASK:
Who prescribed them for you? (Specify)
 Last name _____ Initials _____
 Address _____
 Optometrist 1
 Optician 2
 Ophthalmologist 3
 Oculist 4
 Someone else 5
 (Specify) _____

10.1 Can you see ordinary newspaper print without glasses? ☐ No ☐ Yes

10.2 If no and uses glasses, ASK:
Can you see ordinary newspaper print with glasses? ☐ No ☐ Yes

11.1 Can you see well enough to recognize a friend walking on the other side of the street without glasses? ☐ No ☐ Yes

11.2 If no and wears glasses, ASK:
Can you see well enough to recognize a friend walking on the other side of the street with glasses? ☐ No ☐ Yes

12. If respondent can't see ordinary newspaper print or recognize a friend walking on the other side of the street and has not had his eyes tested for vision in the past 12 months, ASK:
How does it happen you haven't seen anyone about your eyes?
 (Specify) _____

¹A variation of this question was asked in Chester and Smederevo; see page 72.

FOR MOTHERS OF CHILDREN UNDER 6 MONTHS OF AGE		2 Coder	1 Coder			2 Coder	1 Coder
13.1 Where did you have the baby? in a hospital 1 in a nursing home 2 at home 3 some other place 4 (Specify) _____				16.1 Today or yesterday have you taken or used any medicines, salves, or pills that were suggested or prescribed by a doctor? ☐ No ☐ Yes			
		18	18	16.2 Have you taken or used any medicines, or salves, or pills, or anything like that NOT suggested or prescribed by a doctor? ☐ No ☐ Yes		41	41
13.2 Who helped with the baby's delivery ... a doctor and nurse or midwife ... 1 a doctor only 2 a nurse or midwife only 3 anyone else? 4 (Specify) _____ no one 5				16.3 IF YES, ASK: Who suggested that you take or use it/them? Circle all responses Nurse 1 Pharmacist/druggist/chemist 2 Self 3 Someone else 4 (Specify) _____		42	42
13.3 Did you see a doctor or nurse or midwife at any time during that pregnancy apart from the delivery? ☐ No ☐ Yes IF YES, ASK: Did you see any of these people at any time during the ... 1st 3 months? ☐ No ☐ Yes 2nd 3 months? ☐ No ☐ Yes 3rd 3 months? ☐ No ☐ Yes		19	19	If undue breathlessness, or wheezing, or cough not mentioned in Table III, ASK: 17. Supposing you had unusual shortness of breath, or wheezing, or cough for about 2 weeks but not necessarily continuously, what would you do about it? Anything else? ☐ No ☐ Yes IF YES, ASK: What would that be? _____ _____		43	43
For married women under 50, SAY: We are particularly interested in finding out about the medical care received by pregnant women.		20	20			44	44
14.1 Are you pregnant now? ☐ No ☐ Yes						45	45
14.2 IF YES, ASK: Have you seen a doctor, or nurse, or midwife about this in the 2 weeks ending yesterday (midnight)? ☐ No ☐ Yes						46	46
14.3 IF YES, ASK: Was this one of the visits/consultations you already told me about? ☐ No ☐ Yes If no, enter visit on Tables I and/or II and complete the tables.		21	21				
OTHER HEALTH PROBLEMS		22	22			47	47
15.1 Do you at the present time have any illness or health problems which we have not talked about? ☐ No ☐ Yes							
15.2 IF YES, ASK: What are they? _____ _____ _____ _____ _____ _____ _____		38	38				
		39	39			48	48
		40	40				
				19. Suppose you stepped on a rusty nail and it went deep into your foot, what would you do about it? Anything else? ☐ No ☐ Yes IF YES, ASK: What would that be? _____ _____		49	49
				20. If a doctor is not mentioned in 17, or 18, or 19, ASK: You didn't mention a doctor in connection with 17, or 18, or 19, why would that be? 17. _____ 18. _____ 19. _____			

21.1 In some families one member of the family looks after the health of the other members of the family.

Is that so in your family? ☐ No ☐ Yes

21.2 IF YES, ASK: Who would that be?

22.1 If you could have about 15 minutes of uninterrupted time in the next 2 weeks with a doctor you found sympathetic and understanding, is there anything you would like to ask him about?

☐ No ☐ Yes

IF YES, ASK: Would you tell me what it is?

22.2 Have you ever talked to any doctor about this?

☐ No ☐ Yes

IF YES, ASK: What happened?

IF NO, ASK: Why not?

If the respondent has a doctor he usually sees (question 3.1, page 1), ask questions 23.1-27. If he has no doctor he usually sees, skip to question 28, opposite.

23.1 I'd like to ask you one or two questions about the doctor you usually see.

When you visit or consult your doctor does he take his time and not hurry you . . .

most of the time 1
sometimes 2
rarely? 3
Don't know 4

23.2 Does he listen to all that you want to say . . .

most of the time 1
sometimes 2
rarely? 3
Don't know 4

23.3 Is he able to explain things to you fully . . .

most of the time 1
sometimes 2
rarely? 3
Don't know 4

2
Coder

50

1
Coder

50

24.1 Would you say that your doctor . . .

takes a personal interest in you or 1
is rather impersonal in the relationship? 2
It depends or don't know 3

24.2 Would you prefer that the relationship be . . .

more personal 1
more impersonal 2
as it is? 3
Other 4
(Specify)

25. If you were worried about a personal problem that wasn't a strictly medical one, such as children getting into trouble or difficulties between husband and wife, do you think you might discuss it with your doctor?

No 0
Yes 1
It depends 2

26. How long does it usually take you to get to your doctor's office . . .

less than 15 minutes 1
15 minutes to less than 1/2 hour 2
1/2 hour to less than 1 hour 3
1 hour or longer? 4

27. How do you normally get there?

Walk all the way 1
Public transportation 2
Private auto/motorcycle 3
Bicycle (pedal) 4
Animal 5
Doctor always calls 6
On the spot (at factory) 7

Now just a few questions about yourself.

28. How long have you been living in this county or these communes (4)?

Less than 6 months 1
6 months, less than 2 years 2
2 years, less than 5 years 3
5 years, less than 20 years 4
20 years or more 5

29. Where were you born?

(Specify) _____
In this county or these communes (4) 1
Elsewhere in this country 2
In another country 3

30. What kind of work do you usually do?

Main occupation 1
(Specify below)
Housewife only (Specify below main occupation if ever worked) 2
Student or scholar 3
Retired (Specify below main occupation) 4
Unemployed (Specify below main occupation when employed) 5

Main occupation

For what organization?

Address

2
Coder

56

1
Coder

56

57

57

58

58

59

59

60

60

61

61

62

62

63

63

64

64

65

65

1 31.1 Do you have any kind of health insurance for medical expenses? ☐ No ☐ Yes ☐ Don't know 31.2 IF YES, ASK: Does it cover all or part of your doctor's bills when you stay in the hospital? ☐ No ☐ Yes ☐ Don't know 31.3 Does it cover all or part of your other hospital bills when you stay in the hospital? ☐ No ☐ Yes ☐ Don't know 31.4 Does it cover all or part of your bills when you see/consult the doctor in the office, surgery, home, or clinic? ☐ No ☐ Yes ☐ Don't know	2 Coder 66 67 68 69 70	1 Coder 66 67 68 69 70	<i>Complete questions 33, 34, and 35 below, and questions 2, 3, and 4 on face sheet, page A, after leaving respondent.</i> 33. Was there anyone else present during the interview? ☐ No ☐ Yes 34. Did anyone else contribute information to this interview? ☐ No ☐ Yes 35. Were there any major distractions during the interview? ☐ No ☐ Yes Signature of interviewer _____ Date of completion _____ FOR OFFICE USE ONLY <table style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td> </tr> <tr> <td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td> </tr> </table>	1	2	3	4	5	6	7	8	☐	☐	☐	☐	☐	☐	☐	☐	2 Coder 23 24 25 71 72 73 74 75 76 77 78 79 80	1 Coder 23 24 25 71 72 73 74 75 76 77 78 79 80
1	2	3	4	5	6	7	8														
☐	☐	☐	☐	☐	☐	☐	☐														
Notes																					

CHILD HEALTH SURVEY				Area				Household				Indiv.				Respondent			
FOR INTERVIEWS WITH MOTHERS OR GUARDIANS OR UNMARRIED PERSONS UNDER 18 YEARS WHO ARE LIVING AT HOME																			
<i>Use a separate child health survey for each child</i>																			
Child covered by this interview																			
Last name					First name					Respondent's last name					First name				
Now I would like to talk to you about . . . 1. In the 2 weeks ending yesterday (midnight) (Show marked calendar) has a medical doctor been visited/consulted about . . . health?																			
.1 at his office/surgery? ☐ No ☐ Yes How many times? Last name of doctor Initials Address Last name of doctor Initials Address																			
.2 In a hospital emergency room/casualty department? ☐ No ☐ Yes Name of hospital Address																			
.3 In a hospital out-patient clinic? ☐ No ☐ Yes Name of hospital or clinic Address																			
.4 at work or at an industrial clinic? ☐ No ☐ Yes Name of company clinic Address																			
.5 at any other clinic or health center? ☐ No ☐ Yes Name of clinic Address																			
.6 at home? ☐ No ☐ Yes Last name of doctor Initials Address																			
.7 at school? ☐ No ☐ Yes Last name of doctor Initials Address																			
.8 anywhere else? (Specify) ☐ No ☐ Yes Last name of doctor or place Initials Address																			
.9 over the telephone? ☐ No ☐ Yes Last name of doctor Initials Address																			
TOTAL NUMBER OF CONSULTATIONS																			
If no consultations in question 1, skip to question 4, page 3. Record each consultation mentioned in question 1 record in Table I, page 3, using one column for each consultation. Record any overnight stay in hospital/nursing home mentioned in question 1, on Table IV, page 5.																			
2.1 If doctor was consulted in question 1, skip to question 3, below. Has . . . seen/consulted a doctor about his/her health at any time in the last 12 months? ☐ No ☐ Yes																			
2.2 IF NO, ASK: When did he/she last see/consult a doctor? 1 year, less than 3 years 3 years, less than 5 years 5 years or more																			
3.1 Does . . . have a personal doctor who . . . usually sees/consult? ☐ No ☐ Yes																			
3.2 IF YES, ASK: Who is he? 1. Last name of doctor Initials Address																			
3.3 If more than one doctor is mentioned, ASK: Which one does . . . usually see/consult about most of his/her health problems? 1 2 3 None 3. Last name of doctor Initials Address																			

2
Coder

1
Coder

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

Table I – DOCTOR VISITS AND CONSULTATIONS MENTIONED IN QUESTION 1							
Now I have a few more questions about . . . visits/consultations with the doctor.							
	1		2		3		
1.	Place of visit. Code from question 1.						
2.	Was that in the last 7 days or the 7 days before? (Show marked calendar)		Last 7 days 1 7 days before that . . . 2		Last 7 days 1 7 days before that . . . 2		Last 7 days 1 7 days before that . . . 2
3.1	What was the main reason for seeing/consulting the doctor?						
3.2	If no condition or symptom was mentioned, ASK: Did . . . see/consult him because of any symptoms/complaints?		No Yes		No Yes		No Yes
3.3	IF YES, ASK: What was it? (Specify)						
3.4	IF NO, ASK: Was this a follow-up visit/consultation for an earlier illness?		No Yes		No Yes		No Yes
3.5	IF YES, ASK: What was it? (Specify)						
4.	At that visit/consultation did anyone . . .						
	give . . . an injection?		No Yes		No Yes		No Yes
	take blood for a test?		No Yes		No Yes		No Yes
	take an X-ray?		No Yes		No Yes		No Yes
	suggest . . . see another doctor?		No Yes		No Yes		No Yes
	arrange for . . . to go to the hospital?		No Yes		No Yes		No Yes
	give . . . a certificate?		No Yes		No Yes		No Yes
	give . . . a prescription or medicine?		No Yes		No Yes		No Yes
	use any other treatment? (Specify)		No Yes		No Yes		No Yes
5.1	Did anyone suggest that . . . see the doctor for that visit/consultation?		No Yes		No Yes		No Yes
5.2	IF YES, ASK: Who suggested . . . see/consult the doctor . . .						
	the doctor himself?		No Yes		No Yes		No Yes
	another doctor?		No Yes		No Yes		No Yes
	a friend?		No Yes		No Yes		No Yes
	a relative?		No Yes		No Yes		No Yes
	yourself?		No Yes		No Yes		No Yes
	anyone else? (Specify)		No Yes		No Yes		No Yes
6.1	Was any of this visit/consultation paid for by . . . employer, workmen's compensation, insurance, welfare or the health department?		No Yes		No Yes		No Yes
6.2	IF YES, ASK: Does that cover all or part of the expenses?		All Part		All Part		All Part
			1 2		1 2		1 2
If conditions mentioned in question 3 of Table I, record on Table III, or if condition already listed on Table III, circle number in left-hand column next to that condition.							

2 Coder	1 Coder
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34

		Who? (Specify)		2 Coder	1 Coder
4. In the last 2 weeks ending yesterday (midnight), in addition to what you have already told me, did anyone . . .	give . . . an injection?	No ☐	Yes ☐	☐	☐
	take blood for a test?	☐	☐	☐	☐
	take an X-ray?	☐	☐	☐	☐
5. During the same 2 weeks were any of the following health workers seen/consulted ABOUT . . . HEALTH?					
1. Public health nurse/visiting nurse/district nurse/health visitor in the home	No ☐ Yes ☐	How many times? _____	6. Optometrist/optician	No ☐ Yes ☐	How many times? _____
2. Nurse in doctor's office, clinic, or outpatient department apart from a visit to a doctor	☐	☐	7. Dentist	☐	☐
3. Chiropodist/podiatrist	☐	☐	8. School health nurse	☐	☐
4. Chiropactor	☐	☐	9. Any other health worker (Specify) _____	☐	☐
5. Social or welfare worker	☐	☐	10. Did you ask advice from a pharmacist/druggist/chemist?	☐	☐
TOTAL NUMBER OF CONSULTATIONS				☐	☐
If no visits/consultations for questions 4 or 5, skip to question 6.1 below. Record each visit/consultation mentioned in question 5, on Table II, using one column for each visit/consultation.					
Table II – OTHER VISITS OR CONSULTATIONS MENTIONED IN QUESTION 5					
1. Type of health worker? (Code from question 5)	1	2	3		
2. Was that in the last 7 days or the 7 days before?	Last 7 days 1 7 days before that . . . 2	Last 7 days 1 7 days before that . . . 2	Last 7 days 1 7 days before that . . . 2	☐	☐
3.1 What was the main reason for seeing the . . . ?				☐	☐
				☐	☐
				☐	☐
				☐	☐
3.2 If no condition or symptom was mentioned, ASK: Did . . . see/visit . . . because . . . had any symptoms/complaints?	No Yes	No Yes	No Yes		
3.3 IF YES, ASK: What was it? (Specify)				☐	☐
4. Has . . . ever seen/consulted a doctor about this?	No Yes	No Yes	No Yes		
5. Did . . . (name health worker) suggest you see/consult a doctor?	No Yes	No Yes	No Yes		
If condition mentioned on Table II, record on Table III, or if condition already listed on Table III, circle number in the left-hand column next to that condition.					
6.1 During this last 2 weeks since . . . were there any days when . . . was not able to carry on his/her normal daily activities because of illness?	☐ No ☐ Yes	IF YES, ASK: How many different days altogether during the 2 weeks? _____		☐	☐
		How many of those were during the 7 days since last . . . ? _____		☐	☐
6.2 During those 2 weeks was . . . in bed any time because of illness?	☐ No ☐ Yes	IF YES, ASK: On how many different days was . . . in bed all or part of the day? _____		☐	☐
		How many of those were during the 7 days since last . . . ? _____		☐	☐
6.3 IF YES TO 6.1 OR 6.2, ASK: What was the matter with . . . ?				☐	☐
If condition mentioned in question 6.3, record on Table III, or if condition already listed on Table III, circle number in left-hand column next to that condition.					

Table III - CONDITIONS

IF THE CHILD IS OVER 1 YEAR OF AGE, ASK THE FOLLOWING:

Condition number	Here's something a little different, although we may have talked about some of these problems before. Over the last 12 months, has . . . had any of these health problems at any time, that is, during the past year? (Go thru list first, then ask all questions across page for each "Yes.")	In the last 2 weeks had it bothered . . .				Have you ever seen a doctor about this? IF YES, ASK: When was the last time?				Apart from a doctor, have you or has . . . ever had any advice or help about this from anyone else like a nurse, another member of the family, a friend, relative, etc.?	2	1			
		No or Yes				IF NEVER, ASK: Why was that? If more than a year ago, ASK: How does it happen that . . . has not been since?					Coder	Coder			
		a great deal	somewhat	very little	not at all?	in the last 2 weeks	in the last 2 months	more than a year ago?	Never		No or Yes				
1	Rupture or hernia	N	1	2	3	4	1	2	3	4	N				
2	Whooping cough	N	1	2	3	4	1	2	3	4	N				
3	Unusual shortness of breath, or wheezing or cough	N	1	2	3	4	1	2	3	4	N				
4	Frequent stomach trouble, or vomiting, or diarrhea	N	1	2	3	4	1	2	3	4	N				
5	Measles (regular or German)	N	1	2	3	4	1	2	3	4	N				
6	Chickenpox	N	1	2	3	4	1	2	3	4	N				
7	Burn or scold	N	1	2	3	4	1	2	3	4	N				
8	Earache or "runny" ear	N	1	2	3	4	1	2	3	4	N				
9	During the past 12 months, have you had any of these? Skin rash	N	1	2	3	4	1	2	3	4	N				
10	Boils	N	1	2	3	4	1	2	3	4	N				
11	Joint pain	N	1	2	3	4	1	2	3	4	N				
12	Frequent sore throats or colds	N	1	2	3	4	1	2	3	4	N				
13	Frequent severe headaches	N	1	2	3	4	1	2	3	4	N				
14		N	1	2	3	4	1	2	3	4	N				
15		N	1	2	3	4	1	2	3	4	N				
16		N	1	2	3	4	1	2	3	4	N				
17		N	1	2	3	4	1	2	3	4	N				
18		N	1	2	3	4	1	2	3	4	N				

7.1 Since January 1st, 1964, has . . . been in a hospital or nursing home, for overnight or longer? ☐ No ☐ Yes										2 Coder 36 37	1 Coder 36 37				
IF NO: Skip to question 8, below															
7.2 IF YES, ASK: _____ → How many times? _____															
COMPLETE TABLE IV (Enter most recent admission first)															
Table IV – HOSPITAL/NURSING HOME ADMISSIONS ¹															
Admission number	When was the . . . time . . . entered?		How many nights was . . . there?	For what condition was . . . there? <i>(Try to get precise description or medical name)</i>	Code	Did . . . have an operation? No or Yes	IF YES, ASK: What was the name of the operation?	Code	What is the name and address of the hospital or nursing home . . . was in? Name and city	Was the cost of this admission covered by . . . employer, workmen's compensation, insurance, welfare or the health department?					
	Mo.	Yr.								None	All	Part	Purely private		
1						N				1	2	3	4	20-29	20-29
2						Y				1	2	3	4	30-39	30-39
3						N				1	2	3	4	40-49	40-49
4						Y				1	2	3	4	50-59	50-59
5						N				1	2	3	4	20-29	20-29
6						Y				1	2	3	4	30-39	30-39
7						N				1	2	3	4	40-49	40-49
8						Y				1	2	3	4	50-59	50-59
Complete questions 8-11 below, and questions 2, 3, and 4 on face sheet, page A, after leaving respondent.															
8. Was there anyone else present during the interview? ☐ No ☐ Yes						2 Coder 23	1 Coder 23	Signature of interviewer Date of completion FOR OFFICE USE ONLY 12345678				71	71		
9. Did anyone else contribute information to this interview? ☐ No ☐ Yes						24	24					72	72		
10. Were there any major distractions during the interview? ☐ No ☐ Yes						25	25					73	73		
11. Was the child present during the interview? ☐ No ☐ Yes						26	26					74	74		
Notes												75	75		
												76	76		
												77	77		
												78	78		
												79	79		
												80	80		

¹A variation of this question was asked in Chester and Smederevo; see page 72.

Alternative Questions Used in Chester and Smederevo

QUESTION 6

Chester version

6.	Was this under the National Health Service or under a work scheme or privately?	NHS	Work scheme	Privately	NHS	Work scheme	Privately	NHS	Work scheme	Privately
		1	2	3	1	2	3	1	2	3

Smederevo version

6.1	Da li su troškovi posete (konsultacije) plaćeni od strane socijalnog osiguranja, radne organizacije ili opštinske skupštine?	Ne Da		Ne Da		Ne Da	
		u celini delimično		u celini delimično		u celini delimično	
6.2	AKO „DA“, PITAJTE: Jesu li ti troškovi pokriveni u celini ili delimično?	1 2		1 2		1 2	

TABLE IV

Chester version

Table IV – HOSPITAL/NURSING HOME ADMISSIONS														
Admission number	When was the . . . time you entered?		How many nights were you there?	For what condition were you there? (Try to get precise description or medical name)	Code	Did you have an operation? No or Yes	IF YES, ASK: What was the name of the operation?	Code	What is the name and address of the hospital or nursing home you were in? Name and city	Was this under the National Health Service?		IF NO, ASK: Was it covered by insurance at all?		
										No	Yes	In-surance	Purely private	
	Mo.	Yr.												
1						N					1	2	3	4
						Y								

Smederevo version

Tabela IV – PRIJEMI U BOLNICU (SANATORIJUM)														
Početni broj prijema	Kada ste put bili primljeni		Koliko ste noći ta- mo pro- veli?	Zbog kakve bolesti ste tamo bili? <i>(Pokušajte da dobijete precizni opis oboljenja ili medicinski naziv)</i>	Da li ste bi- li ope- risani?	AKO „DA“, PITAJTE: Od čega ste bili operisani?	Znate li naziv i adresu bol- nice ili sanatorijuma gde ste ležali?	Da li socijalno osigu- ranje ili opštinska sku- pstina plaća za taj bo- ravak u bolnici?						
	Mesec	Godina			Šifra		Šifra							
1					Ne 									

QUESTION 31

Chester version

31.1 Apart from the National Health Service, do you have any kind of private health insurance for medical expenses?

☐ No ☐ Yes ☐ Don't know

31.2 IF YES, ASK:

Does it cover all or part of your doctor's bills when you stay in the hospital?

☐ No ☐ Yes ☐ Don't know

31.3 Does it cover all or part of your other hospital bills when you stay in the hospital?

☐ No ☐ Yes ☐ Don't know

31.4 Does it cover all or part of your bills when you see/consult the doctor in the office, surgery, home, or clinic?

☐ No ☐ Yes ☐ Don't know

Smederevo version

31.1 Da li imate neku vrstu zdravstvenog osiguranja?

☐ Ne ☐ Da ☐ Ne znam

31.2 AKO „DA“, PITAJTE:

.....

☐ Ne ☐ Da ☐ Ne znam

31.3 Da li ono plaća u potpunosti ili delimično za vaše boravke u bolnici i lečenje

☐ Ne ☐ Da ☐ Ne znam

31.4 Da li ono plaća usluge u potpunosti ili delimično kada posećujete (konsultujete) lekara u ordinaciji opšte prakse, kod kuće ili u specijalističkoj (ordinaciji) ambulanti?

☐ Ne ☐ Da ☐ Ne znam

QUESTION 32

Chester version

EDUCATION

32. At what age did you leave school?

(Specify) _____ years of age

Deduct 5 from age and code

Less than 9 1

9 2

10-11 3

12 4

More than 12 5

Smederevo version

OBRAZOVANJE

32. Koliko završenih godina školovanja sa uspehom imate?

(Navedite) _____

0 - 8 1

9 - 10 2

11 3

12 4

12 i više 5

APPENDIX II

TECHNICAL NOTES ON STATISTICAL PROCEDURES

Standard Population and Standardized Rates

Age-sex specific rates for the selected conditions, activity limitation, visual impairments, persons with personal doctors, doctor consultations, and hospital utilization were amalgamated within each of three study areas by conventional standardization. The population of Sweden in 1962 was taken as a standard.

Age at last birthday	Standard 100,000 population		
	Total	Male	Female
Total, all ages-	100,000	49,892	50,108
Under 15 years-----	21,541	11,062	10,479
15-17 years-----	5,056	2,584	2,472
18-44 years-----	35,676	18,039	17,637
45-64 years-----	25,594	12,679	12,915
65 years and over---	12,133	5,528	6,605

As an example, let r_i be the survey estimated rate of disability days per person in the i th age-sex class in Chester, U.K. Let P_i be the number of persons in the i th age-sex class in the standard population of 100,000. Then the standardized rate per 1,000 persons is $R = (10^{-2}) \sum P_i r_i = 110$, where the summation extends over all 10 age-sex classes. (See table H, page 14.)

Estimates of Population Totals

Simple expansions of sample totals by the inverse of the sampling rates were used as estimates of population totals. In Chester the sample totals were multiplied by 92 for both the urban and rural zones; for Chittenden the multiplier was 66; and for Smederevo urban sample totals were expanded by 66 and rural sample totals were expanded by the factor 83.

Standard Errors of Standardized Rates

The usual approximations for estimating standard errors of ratios were employed. Let h index strata

(two in Chester and Smederevo and 50 in Chittenden) and let j index the selected sampling units within strata. The form of the estimated rate r_i is $(\hat{Y}_i/\hat{X}_i)$, where, e.g., $\hat{Y}_i$ is an estimate of the total number of disability days for the i th age-sex class, and $\hat{X}_i$ is an estimate of the total number of persons in that age-sex class. $\hat{Y}_i$ and $\hat{X}_i$ are weighted sums over strata of sample values. The variance of r_i was estimated as

$$\text{var}(r_i) = \frac{1}{\hat{X}_i^2} \sum_h \frac{N_h^2}{n_h} [s_{yh}^2 + r_i^2 s_{xh}^2 - 2r_i s_{yhxh}]$$

where N_h and n_h are the total and sample numbers of sampling units, respectively, of the h th stratum and the s 's are the usual within stratum mean squares and products of numerator and denominator variables. The variances of the standardized rates (per 1,000 persons) were estimated by

$$\text{var}(R) = (10^{-4}) \sum_i P_i^2 \text{var}(r_i),$$

and the estimated standard errors were given as $\sqrt{\text{var}(R)}$.

Standard Errors of Detailed Tables

Standard errors for the estimates shown in the detailed tables are not presented. Estimates based on 10 or less observations have sampling errors of the order of 25 percent or more for each of the three areas. In general, estimates based on sample frequencies of less than 50 observations should be approached with great caution.

Treatment of Noninterviews

Based on the best internal evidence available from interview schedules, the numbers of persons eligible for interview in each study area were classified by urban-rural residence and age-sex classification. For analytical purposes a missing interview was represented by average values of actual data in the appropriate urban-rural age-sex category of the missing interview.

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