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POVERTY AND HEALTH

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ABSTRACT

Health policies for the poor have been directed toward redressing an assumed inequity in the relationship between poverty on the one hand and health and medical care on the other. Utilizing data from National Health Survey and National Health Examination Survey publications, these assumed relationships are brought into question.

Furthermore, the same data sources provide a basis for suggesting that it is the impact of illness which is inequitable. Thus, the available information suggest that the most appropriate health policy for the poor be focused on reducing the cost of ill-health accruing from lost income rather than restructuring the medical care delivery system for the poor.

POVERTY AND HEALTH: A CRITICAL EXAMINATION

The objective of this paper is to examine the relationship between poverty and health. More specifically, our questions are:

1. Are low-income people sick more frequently than higher income persons?
2. Do low-income people receive less medical care than high-income people?

The answers to these questions are generated from published data gathered by the National Health Surveys and the National Health Examination Survey, conducted under the auspices of the National Center for Health Statistics. Both are surveys of a nationwide probability sample of the noninstitutional population. The Health Examination Survey of adults was begun in October, 1959, and completed at the end of 1962. The Health Survey is a continuing survey of households with the sample designed so that interviews are conducted every week. A more detailed description of the general program and the specific surveys can be found elsewhere.¹

INCOME AND MORBIDITY

Table 1 contains the age-adjusted distribution of the population with chronic conditions as reported in household interviews from July 1965 to June 1966, by family income. About one-half of the age-adjusted distribution of persons at each income level are reported to have no chronic condition. The data suggest that there is no relationship between a person's family income and the probability of a reported chronic ailment, if age is taken into account.

TABLE 1

Age-Adjusted^a Percent of Persons with Chronic Conditions, by Family Income

Family Income	All Persons	No Chronic Conditions	1+ Chronic Conditions
Under \$3,000	100.0	48.5	51.5
\$3,000-\$4,999	100.0	52.1	47.9
\$5,000-\$6,999	100.0	52.3	47.7
\$7,000-\$9,999	100.0	50.9	49.1
\$10,000-and over	100.0	49.8	50.2

^aAdjusted to the age distribution of the civilian, noninstitutional population of the United States, July 1965-June 1966.

Source: Table D, p. 9, "Limitation of Activity and Mobility due to Chronic Conditions, 1965-1966," Vital and Health Statistics. PHS Pub. No. 1000--Series 10--No. 45. Public Health Service. Washington, D.C., U.S. Government Printing Office, 1968.

However, the age-adjusted data could be misleading, by homogenizing a more dramatic correlation within key age categories. Chronic conditions and their limitations on major activity increase dramatically with age. Also, older people are much more likely to have low incomes. The older age groups, moreover, are a minority of the total population. Thus, standardization for age could wash out large age-specific correlations between income and chronic conditions.

Since income may be more a consequence of chronic conditions, we shall want to see how incomes are distributed at older ages by the presence of a chronic condition.

TABLE 2

Percentage Distribution of Family Income, by Presence of Chronic Conditions at Older Age Levels

Family Income	AGE			
	45-64		65 and over	
	Chronic Condition Present		Chronic Condition Present	
	0	1+	0	1+
Under \$3,000	12	19	43	51
\$3,000-\$4,999	16	18	22	20
\$5,000-\$6,999	21	18	13	11
\$7,000-\$9,999	22	20	13	8
\$10,000-and over	29	25	9	10
TOTAL	100	100	100	100

Source: Table 9, p. 26, *loc. cit.* as Table 1.

Persons with one or more chronic conditions are indeed more likely to report family incomes under \$5,000 than those without these conditions. In the 45 to 64-year-old category the percentages are 37 to 28 (Table 2). Again, like the age-adjusted data, these age-specified data on the effects of chronic ailments do not point to a strong relationship between illness and poverty.

The information for the above analysis is based on interviews and we do know that fewer people report ailments in categories that are broadly diagnostic than are detected by clinical examination. For example, 6.2 million persons had heart conditions in 1963-1965 according to household interviews.² Based on the Health Examination Survey from

1960-1962, however, 14.6 million adults had definite heart disease.³ This discrepancy might be proportionately larger at lower income levels, where people may be less informed about the presence or absence of less obvious chronic conditions. Consequently, an actual clinical examination could turn up many more unsuspected ailments among low-income persons than among high-income ones. Thus, the correlation between morbidity and income would be increased.

With this possibility in mind, we can take a look at clinical data available from the National Health Examination Survey. The information on heart and arthritic conditions has been summarized in Table 3. The data presented are the differences between the actual rate per 100 adults, as diagnosed through the health examination, and the rate that would have been expected given the age composition of the subgroup. (See the appendixes of the various reports for a technical description of the derivation of the expected value.) Thus, a negative value indicates less actual disease than might be expected for that population, and a positive value denotes more. The closer the value is to zero, the closer together are the actual and expected rates.

Looking first at hypertensive heart disease, we can see that there is no apparent relationship between family income and the difference between the actual and expected rates per 100 adults. For example, white men with under \$4,000 family incomes have less definite hypertensive heart disease than expected; the next highest income category has more; the next less; and those adults with incomes over

TABLE 3

Differences Between Actual and Expected (Standardized for Age) Prevalence Rates Per 100 Adults of Selected Disease Conditions by Family Income, Sex and Race

Disease Conditions	Family Income				
	Under \$2,000	\$2,000-3,999	\$4,000-6,999	\$7,000-9,999	\$10,000 & over
<u>Definite hypertensive heart disease</u>					
White: Men	-0.5	-0.8	0.7	-1.8	1.4
Women	3.8	-0.3	-0.7	-2.1	0.1
Black: Men	8.2	-6.6	-2.2	-6.9	11.9
Women	2.7	-1.2	0.8	-6.4	-2.9
<u>Definite hypertension</u>					
White: Men	-1.6	0.4	1.0	-0.5	-1.6
Women	4.9	-0.7	-1.2	-0.7	-1.6
Black: Men	7.3	-5.4	-3.4	-13.8	6.5
Women	4.3	1.9	-6.0	-0.4	-5.6
<u>Definite Coronary Heart Disease</u>					
Men	-0.8	0.2	0.9	0.2	-1.7
Women	0.6	0.3	0.2	0.2	-1.2
<u>Osteoarthritis</u>					
Men	-2.8	0.3	-0.4	1.5	0.5
Women	0.5	0.0	-0.2	-1.0	2.0
<u>Rheumatoid Arthritis</u>					
Men	3.3	-0.5	-0.6	-0.2	-0.1
Women	0.0	-0.5	0.7	-0.5	-0.5

Source: Vital and Health Statistics, PHS Pub. No. 1000--Series 11--Nos. 10, 13, 17, 20. Public Health Service. Washington, D.C., GPO, 1968.

\$10,000 have more. For white women the pattern is quite different--the difference between the actual and expected rates decreases with income from 3.8 to -2.1 in the \$7000-\$10,000 category and then increases to 0.1 for the highest income category. Black men exhibit a similar curvilinear pattern as white women--positive in the extreme income categories and negative in the middle categories. Among black women, however, there is no apparent relationship.

For hypertension, the curvilinear pattern appears for both white and black men, but in opposite directions. For women, however, the difference between actual and expected prevalence of hypertension does decrease as income increases (Table 3).

In summary, the general relationship is not clear between income and hypertension, or hypertensive heart disease, as detected clinically. Whatever the correlation is, if any, it is not a simple unilinear relationship. Moreover, in the data presented in Table 3 on the other diseases, there are only two other instances where income and the difference between actual and expected rates appear to be unilinearly correlated with family income. Among women, the difference in coronary heart disease rates decreases with income. Among men, the actual rate for rheumatoid arthritis is greater than expected for the under \$2000 category, but less for the higher income categories. Otherwise, the pattern is irregular. Hence, our summary statement for hypertension and hypertensive heart disease can stand for all the disease conditions reported in Table 3--that is, the negative relationship between income and these diseases is not proven. Since heart conditions

and arthritis or rheumatism account for over half of the conditions limiting the activities of people,⁴ this conclusion would seem not to be trivial.

One cautionary note on the above conclusion is in order. The expected prevalence rate for each income category is age-adjusted to the age distribution for the U.S. population in the specific sex and/or race category. Consequently, we might wonder whether differences at the higher age categories are dominated by the considerably lower prevalence of the various conditions among younger persons. Unfortunately, published data on age-specific rates by income are generally not available. One exception is for mean cholesterol levels of white adults. This information is presented in Table 4. Again, there is no clear pattern by income--even at the oldest age categories. Although cholesterol levels are associated with the development of coronary heart disease, there is no assurance that age-specific data for the heart and arthritic conditions reported on in Table 3 would show similar results. Nevertheless, the lack of a cholesterol-income relationship even when age is specified does support our general contention that a correlation between disease and income is yet to be demonstrated.

What about impairments such as vision and hearing? First, let us look at vision. For uncorrected visual acuity, the difference between actual and expected rates of "normal eyesight" is not linearly

TABLE 4

Mean Serum Cholesterol Levels of White Adults, by Sex, Age, and Annual Family Income: United States, 1960-62

Sex and age	All incomes	Under \$4,000	\$4,000-\$6,999	\$7,000 and over
	Mean serum cholesterol in mg. per 100 ml.			
Both sexes (age-sex adjusted).	221.6	219.4	222.0	222.1
Men (age-adjusted).....	218.8	215.1	219.3	220.0
18-24 years.....	179.3	177.9	181.2	175.8 ^a
25-34 years.....	207.1	201.2	211.4	206.8 ^a
35-44 years.....	228.1	223.6 ^a	225.9	229.4
45-54 years.....	231.4	231.5 ^a	230.2	231.3
55-64 years.....	233.8	227.6	226.7 ^a	241.2 ^a
65-74 years.....	229.9	225.9	242.4 ^b	234.9 ^a
Women (age-adjusted).....	224.1	223.3	224.4	223.9
18-24 years.....	185.7	185.3	191.7	180.2 ^a
25-34 years.....	198.8	193.3	194.9	204.7
35-44 years.....	214.2	216.5	208.8	217.8
45-54 years.....	237.6	238.0	234.7	237.8
55-64 years.....	264.9	260.4	271.6 ^a	260.8
65-74 years.....	267.4	269.6	274.0 ^b	258.3 ^a

^aCell estimate based on sample of 50 to 99 persons.

^bCell estimate based on sample of less than 50 persons.

Note: Mean values for men are age-adjusted to age distribution of U.S. male population; mean values for women are adjusted to U.S. female population.

Source: "Serum Cholesterol Levels of Adults," Vital and Health Statistics. PHS Pub. No. 1000--Series 11--No. 22. Public Health Service, Washington, D.C.: GPO, 1967.

related to income, although for women the general thrust of the relationship is unilinear.⁵ However, when we look at severe lack of visual acuity (20/100 or less with correction), a slight relationship with income appears extant among men at the older age levels, but no pattern appears for women (Table 5). Since these prevalence rates are for "corrected" vision, they may reflect inability to pay for glasses at the lower income levels. More likely, however, failing visual acuity leads to lower incomes among men.

The relationship between hearing impairments and income is not quite the same as for vision. Among the men, there appears not to be a relationship among the 45 to 54-year-olds. For women there seems to be a negative correlation in the oldest age category (Table 5). Again hearing loss may be more contributory to lower income rather than vice-versa. Certainly among women--where income may be more directly causal--neither impairment can be construed by the most wishful thinking to have a uniform negative correlation with income.

In summary, the available evidence from the Health Examination Survey is consistent with data obtained from household interviews. The only conclusion is that the relationship between health and poverty--as indicated by morbidity--is not proven.

MEDICAL CARE

A second proposition typically asserted is that the poor receive less in the way of actual medical care--both in quantity and quality. Unfortunately, the problem of the quality of medical care in general has barely

TABLE 5

Prevalence Rates Per 100 Population With 20/100 or Less (Corrected) Visual Acuity or With Hearing Levels 16 Decibels or More for Normal Speech by Income, Sex, and Age

Visual acuity: 20/100 or less (corrected)	Income				
	Under \$2,000	\$2,000- 3,999	\$4,000- 6,999	\$7,000- 9,999	\$10,000 & more
Men: age 45-54	3.2	3.6	1.7	-	-
55-64	4.6	4.5	3.3	4.5	1.6
65-74	12.1	10.0	1.7	-	-
Women: age 45-54	8.7	1.4	3.4	2.2	-
55-64	4.2	4.2	5.1	-	-
65-74	12.0	6.9	4.0	12.5	4.9
Hearing threshold at 16 or more decibels					
Men: age 45-54	4.4	7.8	3.5	1.4	3.8
55-64	16.7	13.6	10.3	6.6	3.5
65-74	36.8	31.2	22.4	35.1	9.6
Women: age 45-54	6.8	6.1	4.5	1.2	5.3
55-64	8.6	12.6	9.6	2.3	10.9
65-74	32.9	24.7	20.8	23.0	17.5

Source: Vital and Health Statistics, PHS Pub. No. 1000--Series 11--Nos. 25 and 31. Public Health Service. Washington, D.C., GPO, 1968.

been touched. It is an obviously complicated question in definition and in measurement.⁶ Hence we ought to be wary of categorical statements on the relative inferiority of the health care received by the poor. Many studies, however, have presented data that support the statement that utilization of medical services is positively correlated with income.⁷ It is this conclusion which we shall reexamine. Typically, quantity of care is measured by physician contact.

The most recent data suggest that there is no correlation between average number of physician visits per person, per year, and family income. Based on information gathered from household interviews from July 1966 to June 1967, the average physician visits for persons in families with less than \$3000 income was 4.6. The corresponding average figure was exactly the same for persons whose income was over \$10,000.⁸ But, these averages mask a strong relationship for children under 15 years of age. When family income is under \$3000, the average number of physician visits is 4.4 for children under 5 and 1.5 for those 5-14 years of age. When income is over \$10,000, the corresponding averages are 7.2 and 3.5.⁹

Taking education of the household head into account, however, the correlation between family income and average annual number of physician visits among children disappears (Table 6). This finding suggests that education of the family is an important contributor to medical care for the young. Hence, increased educational attainment may have a lot to do with increased demands for medical services.

TABLE 6

Number of Physician Visits Per Person Per Year (July 1966-June 1967), by Education of Head of Family and Family Income, for Persons Under 15 Years of Age

Family Income	Education of Household Head			
	Under 5 years	5-8 years	9-12 years	13+ years
Under-\$5,000	2.1	2.2	3.2	5.4
\$5,000 and over	1.4	2.6	4.1	5.0

Source: "Volume of Physician Visits, 1966-1967," Vital and Health Statistics, PHS Pub. No. 1000--Series 10--No. 49. Public Health Service. Washington, D.C., GPO, 1968, p. 23.

However, averages may not reflect the spread of utilization. Perhaps low-income persons visit the physician both less and more often than high-income persons; hence, the similarity in averages. Table 7 demonstrates that there is little evidence to support that suggestion. Although low-income persons are somewhat more likely than the high-income population not to have seen a physician, they do not go more frequently.

TABLE 7

Percent Distribution of Persons by Number of Physician Visits in Past Year
(July 1966-June 1967), According to Family Income

Family Income	Number of Physician Visits in Past Year					
	Total	0	1	2-4	5 or more	Unknown
Under \$3,000	100	36	18	23	21	2
\$3,000-\$4,999	100	35	20	25	19	1
\$5,000-\$6,999	100	33	20	27	19	1
\$7,000-\$9,999	100	30	21	28	20	1
\$10,000 and over	100	27	22	30	20	1

Source: "Volume of Physician Visits, 1966-1967," Vital and Health Statistics, PHS Pub. No. 1000--Series 10--No. 49. Public Health Service. Washington, D.C., GPO, 1968, p. 39.

But, the lack of any large differences could be a consequence of the inception of Medicare and Medicaid. These programs may have increased the utilization of physician's services by reducing the price of medical care for the poor. Some support for this statement is that data from earlier surveys show that the average number of physician visits does increase

slightly, but steadily, with income. Persons with family incomes under \$4000 had 4.3 physician visits on the average from July 1963 to June 1964, compared with 5.1 for persons in families with incomes over \$10,000. These averages, moreover, were similar to those obtained in the 1958-1959 survey.¹⁰

When age is taken into account, we also find that the difference is largest among children--similar to the data reported for 1966-1967. However, the average number of visits is also related to income among 25 to 34-year-olds--the childbearing ages for women--and among persons 75 and over.¹¹ Unfortunately, data on the average number of physician visits for that year are not available by income and education together. Since education is more consistently related to physician visits throughout the age range,¹² there is reason to believe that the income effect might be washed out, as in Table 6, if education were controlled. Nevertheless, the general pattern among adults is one of little relationship between income and physician visits.

Thus we must conclude that the relationship between income and the quantity of medical care, if there is one, is not clearly evident.

HEALTH AND POVERTY RESTATED

Must we be completely agnostic about the relationship between health and poverty? On the face of it, the answer is "yes"--at least until the available data are more completely analyzed. What about the consequences of illness? It is our contention that illness and medical care have more serious consequences for lower income populations. In economic terms, the costs of illness are inequitably distributed among the income categories.

First, even though the prevalence of one or more persons with chronic ailments is unrelated to income, the extent of those ailments has a differential impact. As can be seen in Table 8, persons whose chronic conditions limit their major activity are much more likely to have incomes under \$3000 than where the ailment is less restrictive. This is particularly true of nonaged adults. In the 17 to 44 age group, among those who have no chronic conditions, one out of every eight or nine has a family income under \$3000; in the same age group, among those unable to carry on their major activity, two out of every five have family incomes under \$3000 (Table 8). The pattern is similar for 45 to 64-year-olds. Among the aged, where advanced years restrict activity anyhow, low income is much less related to the limitations imposed by their chronic condition.

TABLE 8

Percentage of Adults With Family Incomes Under \$3000 by Their Chronic Condition, and Activity Limitation Status

AGE	Persons with no chronic conditions		Persons with 1+ Chronic Conditions		
	With no limitation of activity	With limitation, but not in major activity	With limitation in amount or kind of major activity ^a	Unable to carry on major activity	Percent under \$3,000 income
17-44	12	11	16	24	41
45-64	12	13	21	36	51
65 and over	43	47	54	55	57

^aMajor activity refers to ability to work, keep house, or engage in school or preschool activities.

Source: *Supra*, Table 1, p. 26.

This finding is understandable. Income and the physical demands of occupational activity are, in general, negatively related. Persons doing physical labor would be more restricted in their work than persons doing nonmanual labor given similar ailments.

Some evidence for this hypothesis is presented in Table 9. Among currently employed persons over 44 years of age who report one or more chronic conditions, those in farm occupations and in non-farm labor are

TABLE 9

Chronic Conditions and Limitation of Major Activity, by Occupation of Currently Employed Persons Over 44 Years of Age

Occupation	Of all in occupation, percent with chronic conditions	Of all with 1+ chronic conditions, percent with limitation of major activity
Professional, Technical Managers, Officials, Proprietors (non-farm)	68	7
Clerical	69	15
Sales	68	9
Craftsmen and Foremen	72	15
Operative	67	14
Service, except private household	66	13
Private household	69	15
Laborers, except farm and mine	77	24
Farm Laborers and Foremen	69	24
Farmers and Farm Managers	72	33
	77	33

Source: *Supra*, Table 1, pp. 48-49.

most likely to say that their condition limited their major activity.

On the other hand, professional, technical, and clerical workers are least likely to report such restrictions. The occupations in which the workers

are most limited are also somewhat more likely to include workers having one or more chronic conditions (Table 9). Thus, it is possible that the chronic condition may be a consequence of work itself, particularly farming. That possibility aside, however, the data support, but do not confirm, our thesis that persons in more physically demanding occupations are most affected by their physical health condition.

Unfortunately, these data are not available by employment status and income. We do have, however, the average number of days lost from work during the year from July 1965 to June 1966, for currently employed persons. What is instructive to note is that income is correlated unilinearly with work days lost for men between 25 and 64 years of age. Moreover, the relationship is quite strong. Men 25 to 44-years-old lose over 60 percent more time from work if their income is less than \$3000 than if it is over \$10,000. Among the 45 to 64-year-old men, those with less than \$3000 income lose more than twice as many days as men with more than \$10,000 family income. Thus, precisely among the main wage earners (men are 53 percent of the currently employed over 17 years of age), the differential cost of illness is greatest.¹³

Lower income families, then, lose a greater proportion of their income than more affluent persons. This assumes that days lost from work means wages lost for everyone. But, it is plausible that persons in higher paying jobs are more likely to have sick leave benefits, formal or informal, and, therefore, are less likely to lose income as a result of illness. Consequently, the impact on income for wage-earners in the lower income categories is possibly even greater relative to high-income persons than the data indicate.

Costs of illness, obviously, can also mean direct out-of-pocket expenses for the necessary treatment and care. Such out-of-pocket costs are proportionately greater for lower income families. In 1961, families with less than \$4000 income after taxes spent between 7.5 and 10 percent of their money on medical care compared to 6-7 percent for higher income families.¹⁴ Family income was negatively and sharply related to coverage by hospital and surgical insurance.¹⁵ Since the proportion of persons hospitalized in a given year does not vary by income,¹⁶ we can assume that lower income persons are more likely to be confronted with a large medical bill. For example, of those persons hospitalized for surgical treatment, about one-third of the discharges, where family income was under \$2000, had some part of the surgeon's bill paid for by insurance compared to four-fifths when the income was over \$7000.¹⁷ The threat of a catastrophic medical bill is underlined by the fact that hospitalized lower income persons tend to be in the hospital longer than their higher income counterparts.¹⁸

The conclusion that illness has a greater impact on the poor than the more affluent is hardly surprising. After all, Medicare and Medicaid are attempts to correct this inequity--at least insofar as direct out-of-pocket costs are concerned. The costs are even greater when work and impact on major activity are considered. Although, again, the conclusion may appear to be obvious.

What has not been obvious, and what has been the major focus of this paper, is that the relationship of poverty to morbidity and to the amount of medical care is not proven. In all the words written

on the subject, only one other author has called attention to this possibility, and only with respect to morbidity.¹⁹

Now, the state of health in the United States may be poor relative to our resources and compared with other western countries. Such appears to be the case when comparative infant mortality rates are examined.²⁰ Whatever that state is, the poor are equally afflicted (or blessed) with the medical care system available to cope with those problems. What all this suggests is that, when we think about health policies directed to the poor, lowest priority ought to be given to restructuring the delivery system and to focusing on treatment of illness. (This is not to gainsay the need for innovation in those areas for the benefit of all of us.) Rather, highest priority ought to be given to reducing the cost of ill health for the poor--either through transfer mechanisms or through programs designed to reduce the constraints of the chronic ailments of impoverished persons on their ability to compete in the labor market.

FOOTNOTES

¹Vital and Health Statistics, PHS Pub. No. 1000--Series 10--Nos. 1, 2,4, Public Health Service, Washington, D.C., U.S. Government Printing Office.

²"Age Patterns in Medical Care, Illness, and Disability, 1963-1965," Vital and Health Statistics, PHS Pub. No. 1000--Series 10--No. 32, Public Health Service, Washington, D.C., GPO, 1966, p. 55.

³"Heart Disease in Adults, 1960-1962," Vital and Health Statistics, PHS Pub. No. 1000--Series 11--No. 6, Public Health Service, Washington, D.C., GPO, 1964, p. 7.

⁴"Limitations of Activity and Mobility Due to Chronic Conditions, 1965-1966," Vital and Health Statistics, PHS Pub. No. 1000--Series 10--No. 45, Public Health Service, Washington, D.C., GPO, 1968, p. 6.

⁵"Binocular Visual Acuity of Adults, by Region and Selected Demographic Characteristics, 1960-1962," Vital and Health Statistics, PHS Pub. No. 1000--Series 11--No. 25, Public Health Service, Washington, D.C., GPO, 1967, p. 13.

⁶Julius Roth, "The Treatment of the Sick," in John Kosa, *et al.*, eds., Poverty and Health, Harvard University Press: Cambridge, 1969, pp. 222-226.

⁷For example, Elijah L. White, "A Graphic Presentation on Age and Income Differentials in Selected Aspects of Morbidity, Disability and Utilization of Health Services," Inquiry, Vol. V, No.1, March 1968, pp. 21-28; David Mechanic, Medical Sociology, The Free Press: New York, 1968, pp. 266-270.

⁸"Volume of Physician Visits, 1966-1967," Vital and Health Statistics, PHS Pub. No. 1000--Series 10--No. 49, Public Health Service, Washington, D.C., GPO, 1968, p. 3.

⁹*Op. cit.*, p. 19.

¹⁰"Volume of Physician Visits by Place of Visit and Type of Service, 1963-1964," Vital and Health Statistics, PHS Pub. No. 1000--Series 10--No. 18, Public Health Service, Washington, D.C., GPO, 1965, p. 13.

¹¹*Op. cit.*, p. 19.

¹²*Op. cit.*, p. 14.

¹³"Disability Days, 1965-1966," Vital and Health Statistics, PHS Pub. No. 1000--Series 10--No. 47, Public Health Service, Washington, D.C., GPO, 1968, p. 32.

¹⁴Consumer Expenditure Survey Report, 1960-61, U.S. Bureau of Labor Statistics, Rep. No. 237-93, (USDA Rep. CES-15), Washington, D.C., GPO, 1965, p. 16.

¹⁵"Family Hospital and Surgical Insurance Coverage, 1962-1963," Vital and Health Statistics, PHS Pub. No. 1000--Series 10--No. 42, Public Health Service, Washington, D.C., GPO, 1967, pp. 13-17.

¹⁶"Persons Hospitalized by Numbers of Hospital Episodes and Days in a Year, 1965-1966," Vital and Health Statistics, PHS Pub. 1000--Series 10--No. 50, Washington, D.C., GPO, 1969.

¹⁷"Proportion of Surgical Bill Paid by Insurance, 1963-1964," Vital and Health Statistics, PHS Pub. 1000--Series 10--No. 31, Washington, D.C., GPO, 1966, p. 8.

¹⁸PHS Pub. 1000--Series 10--No. 50, *op. cit.*, p. 14.

¹⁹C. Kadushin, "Social Class and the Experience of Ill Health," *Social Inquiry*, V. 34, 1964, pp. 67-80.

²⁰"International Comparison of Prenatal and Infant Mortality: The United States and Six West European Countries," Vital and Health Statistics, PHS Pub. No. 1000--Series 3--No. 6, Washington, D.C., GPO, 1967, p. 2.