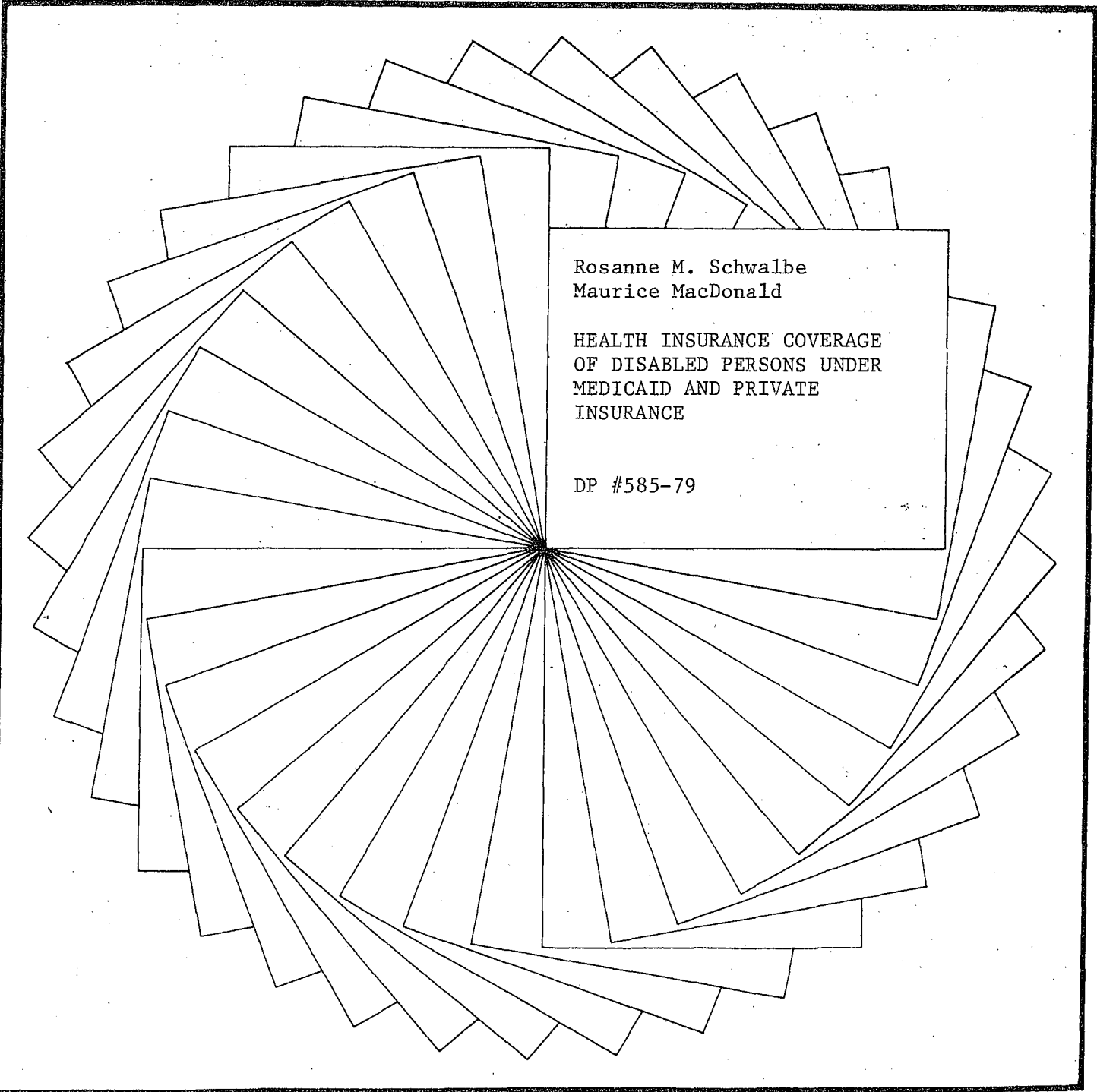University of Wisconsin-Madison

Institute for Research on Poverty

Discussion Papers

Rosanne M. Schwalbe
Maurice MacDonald

HEALTH INSURANCE COVERAGE
OF DISABLED PERSONS UNDER
MEDICAID AND PRIVATE
INSURANCE

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ABSTRACT

The 1972 Survey of Disabled and Nondisabled Adults is used to examine influences on coverage by Medicaid and private health insurance of disabled persons relative to the nondisabled. The results indicate that disabled persons are less likely than able-bodied persons to have private health insurance, and also have difficulty obtaining Medicaid coverage. These findings were derived from descriptive statistics and multivariate regression models that control for age, race, sex, marital status, region, size of place, income, assets, and participation in other health assistance programs. Unlike what has been found in previous studies, this study found no significant differences in coverage associated with race or rural residence.

1. INTRODUCTION AND LITERATURE REVIEW

It can be very difficult for a disabled person to obtain good
health insurance coverage from a private source. A disabling condition
may cause an insurance company to place an individual in a high-risk
category. This can lead either to the assignment of exceedingly high
premiums for coverage or to the restriction of coverage, or even to a
company's refusal to accept an individual as a policy-holder. Thus,
for some disabled individuals, private insurance policies may provide
very poor coverage or no coverage.

Fortunately, many disabled persons are eligible for health insurance
under public insurance programs. In addition to special health care
services provided to certain special groups of persons, such as veterans,
there are two government-funded (public) health insurance programs
for disadvantaged persons: Medicare and Medicaid. These programs
also provide benefits to disabled persons.

Medicare and Medicaid have markedly improved the contact disadvantaged
persons have with the medical system. A 1970 study by Ronald Anderson
revealed that 65 percent of all low-income persons saw a physician during
that calendar year as compared with 56 percent in 1963 (Anderson in
Rossett, 1976). Although Anderson did not look specifically at the
disabled population, it is probably safe to infer, based on his findings,
that Medicaid has benefitted this group of recipients. However, not
all eligible persons have shared these benefits to the same degree.

One cause of inequity is the structure of the Medicaid program. Medicaid is a federal-state program in which states have considerable leeway in determining eligibility for benefits, range of medical services covered, and limits on benefits for any given type of service. Although all states are required to provide certain basic services, such as hospital and physician care, some states also provide a range of supplementary benefits, such as dental and clinical services and drugs. Prior to the enactment of the Supplemental Security Income Act (SSI), federal regulations required that Medicaid be categorically available to recipients of either Aid to the Permanently and Totally Disabled, or Aid to Families with Dependent Children. A person qualifies for Medicaid under each state's definition of disabled, and must also have income and resources below limits determined by the state.

There was a wide variation among the optional services which were provided under Medicaid in 1972. This variation has contributed substantially to the range in average Medicaid payments across states. In 1970 the average payment per child recipient ranged from $43 in Mississippi to $240 in Wisconsin. The adult recipient population had similar variation.

Unlike Medicaid, Medicare is a uniform federal program providing medical care benefits to those elderly and disabled persons who are covered by the Social Security and Railroad Retirement programs. According to the Social Security Act, a person is entitled to disability benefits if he/she is unable to engage in any substantial gainful activity because of any medically determinable physical or mental impairment which can be expected to last for a continuous period of twelve months or more.

Although the same set of Medicare benefits is available to all persons covered, regardless of their income, their race, or their geographical location, wide differences in utilization exist. Among the elderly, the groups least likely to use medical care services under the Medicare program are the poor, blacks, rural residents, and residents of the South (Holahan, 1975). Like that provided by private plans, Medicare coverage does not include all medical expenses but is limited by deductibles and maximums on services covered. Thus, there may be individuals in need of the services provided by public insurance programs who are not receiving benefits. Private health insurance may not be a viable alternative for them. Their situation raises an important policy issue which has not yet been dealt with.

This study describes the disabled population, and analyzes the determinants of that population's health insurance coverage, using the 1972 Survey of Disabled and Nondisabled Adults as a source of data. The analysis attempts to explain which persons are likely to receive each type of insurance coverage. There are separate analyses of public and private insurance coverage. The public insurance analysis focuses exclusively on Medicaid.

As noted above, Medicaid coverage varies across states and therefore, as expected, presents many problems for analysis. The 1972 Survey used here does not identify the respondent's state residence. Thus it is impossible to study the effect of state Medicaid eligibility rules on coverage directly. Other location variables, such as region and city size, have been used here to establish other relevant kinds of geographical variation.

For two reasons, persons over age 60 were deliberately excluded from this study. First, the elderly become categorically eligible for insurance due to their age under Medicare; hence this study's focus on Medicaid would provide an incomplete treatment of the aged population's situation. Second, it is very difficult to separate the influence of voluntary retirement from that of disability for the aged.

A review of the literature reveals that there are very few studies of health care coverage for the disabled, although there have been policy analyses of the Medicare and Medicaid programs, and some descriptive studies of the disabled population. Kathryn Allen's 1976 study uses a classification based solely on the extent of the individual's capacity for work. This study uses a more inclusive disability definition, based on work performance and other health characteristics.

Financing Health Care for the Poor, by John Holahan (1975) provides an evaluation and analysis of the coverage of the disabled under the Medicaid program. Holahan has developed a predictive model of Medicaid participation. Within the disabled population he finds income and city residence to have a statistically significant and positive effect on Medicaid participation. Race proves to be a significant influence on participation; Blacks are less likely than whites to use medical services. Holahan finds that children under five are more likely to use both medical and hospital services. Davis and Schoen (1979) also discuss coverage of the disabled under the Medicaid program. They find wide variation among states; for example, the South, which has 45 percent of the nation's poor, receives only 26 percent of federal Medicaid funds.

Warlick (1979) examines factors affecting the eligible individual's
decision to participate in Supplemental Security Income. Persons eligible
to participate in public welfare programs may not do so, due to, for
example, difficulty in enrollment procedures. The more difficult it is
for an individual to enroll in the Medicaid program, the less likely is
his/her participation. In some states a person who is receiving aid
under APTD is enrolled automatically in Medicaid. In other states,
despite eligibility, a person must make a separate application for
Medicaid benefits. Transportation difficulties and health problems can
make it difficult to apply. Warlick also discusses the problem of
social stigma. Theoretically, some people feel inferior because they
are dependent on society or the public, and lose social identity by
accepting welfare. Thus they may refuse to participate despite the
fact that they are eligible.

Other studies have analyzed Medicaid in relation to all eligible
persons. This study is more selective: it examines a recipient group
composed only of disabled people. The previous studies indicated problems
of accessibility, state program structure, lack of information, and
social stigma. To obtain more information about these influences, here
variables are constructed which measure both the survey population's
knowledge of and participation in the program, and the health-related
difficulties found within that population.

2. DESCRIPTIVE ANALYSIS OF THE DISABLED AND NONDISABLED POPULATION

In this section, the demographic, economic and health insurance
coverage characteristics of the sample group will be examined. For

analytic purposes, the group is divided into four categories based on
the severity of individuals' disabilities. These are: severe, serious,
minor, and a fourth category labelled other, which includes the non-
disabled segment of the survey group. Based on the 1972 survey, it is
possible to make judgments regarding the effect of the disability on
job or work performance, as well as on mobility and motor capacities.
Questions such as: "Are you usually able to go out of doors without
help from another person?" (No. 32A) have been used to assess the type
or severity of the individual's disability. A complete description of
the four categories can be found in Appendix A.

This classification does not conform to that of the Social Security
Administration. Its classifications--severely disabled, occupationally
disabled and secondary work limitation--are strictly work-related.
To ignore the motor and mobility effects of a disability seems unreasonable
in a discussion of health care. A person may not be able to work
regularly but may have no difficulty in travelling to and completing
the necessary paperwork at the county agency to file for Medicaid benefits.
In using a more inclusive definition of disability, the intent is to
learn whether persons who suffer from different types and different
effects of disabilities are more or less disadvantaged in their health
insurance coverage.

To provide a description of the survey population the following
characteristics are identified.

Disability Information

1) Disability Status
2) Duration of Disability

Demographic Information

1) Age
2) Sex
3) Race
4) Marital Status
5) Region and Residence

Economic Information

Income relative to needs

Health Insurance Coverage

1) Participation in Medicaid
2) Participation in private health insurance

Based on these characteristics, a description of the sample group
provides a basis for subsequent detailed analysis of health insurance
coverage. Because health status is a fundamental issue in the analysis
of Medicaid participation, the following tables consistently use the
extent of disability, i.e., severely disabled, nondisabled etc., cross-
tabulated with such characteristics as sex, age, and marital status.
Approximately 18,000 persons responded to the 1972 survey, but not all
of these are included in the tabulations. Slightly over 14,000 are
included. Persons over 60 years old are excluded, and additional cases
have been dropped because of incomplete survey records. Table 1 shows
the number of persons in each category between the ages of 20 and 60.

Table 1

Disability Status

| Disability Status | Survey Totals | | Percent of |
	Number	Percent	U.S. Population
Severe	501	3.5	.65
Serious	2194	15.3	3.40
Minor	3576	24.9	9.00
Nondisabled	8085	56.3	87.00

Kathryn Allen finds that 7.3 percent of the total United States population (including persons over age 60) are severely disabled, 3.3 percent suffer occupational disabilities and 4.1 percent have secondary work limitations. In her study, 14.6 percent of all persons between the ages of 20 and 64 are disabled. The weighted results from this analysis indicate that a total of 13 percent of persons between twenty and sixty are disabled.

Definitional differences and slightly different analysis samples account for the dissimilarities in the two studies. The three categories of disability used in this study incorporate mobility and motility problems. (See Appendix Table A-1 for definitions of the categories.) Persons who require assistance with personal functions and those who need help to go outdoors may be employed part-time or full-time. Their disabilities can be just as severe as those of others who are unemployed. Thus, persons with these special problems, even if they work regularly and without hindrance, can be considered disabled.

It would be expected that disabled persons would show a higher incidence of poverty than nondisabled persons, because of the effects of their disabilities on employment. In Table 2, the four levels of disability cross-tabulated with the poverty status of the individuals, showing whether they are below or above 125 percent of the official poverty level. Comparisons of family income to 125 percent of the official poverty threshold are calculated by dividing the family's income by the official need standard for that particular situation. (See Table B1 in Appendix B for the need standards employed here.)

Table 2

Poverty Status

Disability Status	Survey Respondents		U.S. Population	
	Below	Above	Below	Above
Severe	61.6	38.4	51.9	48.1
Serious	55.6	44.4	47.7	52.3
Minor	30.0	70.0	24.5	75.5
Nondisabled	20.0	80.0	14.9	85.1

In this survey, there are an unusually high number of persons below 125 percent of the poverty cutoff. This is due to the sampling design of the 1972 survey which attempted to oversample disabled persons and persons who had recovered from disabling conditions. Table 2 contains weighted statistics from the 1972 survey indicating the representative incidence of poverty in the national population.

The incidence of poverty increases as the severity of the disability increases in both the weighted and unweighted data. A total of 51.9 percent of the nation's severely disabled persons between the ages of 20 and 60 years are near or below the poverty cutoff, whereas only 24.5 percent of the mildly disabled are in that category.

Table 3 shows the type of health insurance coverage the respondents have. (These figures are unweighted and are not representative of the national population.) Comparing the severely and seriously disabled

groups reveals that they have similar coverage through Medicaid, but that the seriously disabled category includes a greater number of persons covered through private insurance.

Table 3

Health Insurance Coverage

Disability Status	Insurance Coverage						All Persons	
	Medicaid		Private		Neither			
	No.	%	No.	%	No.	%	No.	%
Severe	111	22.2	185	36.9	205	40.9	501	100
Serious	492	22.4	890	40.6	812	37.0	2194	100
Minor	256	7.2	2339	65.4	981	27.4	3576	100
Nondisabled	178	2.2	6411	79.3	1496	18.5	8085	100

With respect to the duration of disabilities, Table 4 indicates that the greatest percentage (34 percent) of survey respondents have been disabled for fifteen years or more. The duration value is based on a survey question which asked in which month and year the health problem occurred. Approximately 17.5 percent of the disabled have been so for two years or less. Allen states that only 16 percent of the disabled report that onset occurred more than fifteen years ago, with the largest percentage (35.2 percent) falling in the two to four year category. Again, there is a difference between Allen's findings and ours, due largely to the fact that Allen's results are for the total U.S. population, whereas this study excludes the elderly.

The importance of duration is its economic consequences. A disability which has lasted a long time probably affects the family's economic well-being greatly due to medical costs and wage losses. Also, depending on when a disability occurred, other factors such as education and marital status may have been affected, having in turn their own effects on income and well-being.

Table 4

Duration of Disability

Disability Status	Less than 1 year		1 to 2 years		3 to 4 years		5 to 9 years	
	No.	%	No.	%	No.	%	No.	%
Severe	23	4.8	39	7.7	58	11.5	70	14.2
Serious	109	4.9	266	12.1	288	13.2	492	22.4
Minor	169	4.7	491	13.7	464	13.0	735	20.5

	10 to 14 years		15 or more years		Other		All Persons	
	No.	%	No.	%	No.	%	No.	%
Severe	62	12.3	242	48.7	7	1.4	501	100
Serious	301	13.7	686	31.3	52	2.5	2194	100
Minor	445	12.4	1223	34.2	49	1.4	3576	100

According to Table 5, the greatest percentage of disabled persons is found in the upper age categories. Other disability studies have shown a similar pattern. As persons age, the incidence of chronic

illness increases, but recovery rates decline. In addition, an older person may retire early choosing to leave the work force more readily than a younger person.

Table 5

Age of Survey Respondents

Disability Status	20 to 30 years		31 to 40 years		41 to 50 years	
	No.	%	No.	%	No.	%
Severe	65	13.0	76	15.2	141	28.1
Serious	165	7.5	246	11.2	612	27.9
Minor	557	15.6	532	14.8	1067	29.9
Nondisabled	2158	26.6	1736	21.5	2092	25.9

	51 to 60 years		All Persons	
	No.	%	No.	%
Severe	219	43.7	501	90
Serious	1171	53.4	2194	100
Minor	1420	39.7	3576	100
Nondisabled	2099	26.0	8085	100

Overall, the rate of disability among surveyed females is higher than males (see Table 6). Both Allen's findings and those of the 1966

Survey of the Disabled agree on this. Allen attributes the difference
to sex differences in health, perception of disability, work motivation,
and the need for and availability of work (Allen, 1976).

Table 6

Sex of Respondents

Disability Status	Male		Female		All Persons	
	No.	%	No.	%	No.	%
Severe	211	42.1	290	57.9	501	100
Serious	988	45.0	1206	55.0	2194	100
Minor	1864	52.1	1712	47.9	3576	100
Nondisabled	4076	50.4	4009	49.6	8085	100

Within the respondent group there are more whites in both the
disabled and nondisabled groups. But Table 7 shows that 42.9 percent of
the white respondents are disabled, as compared to 49.1 percent of the
nonwhite respondents. These findings are similar to Allen's. Part
of the racial difference in incidence rates is probably due to the more
frequent poverty of the nonwhite population.

Table 7

Race of Respondents

Disability Status	Whites		Nonwhites		All Persons	
	No.	%	No.	%	No.	%
Severe	428	85.5	73	14.5	501	100
Serious	1754	74.9	440	25.1	2194	100
Minor	3184	89.0	392	11.0	3576	100
Nondisabled	7146	89.4	939	10.6	8085	100
Total Disabled		42.9		49.1		

In Table 8 respondents are tabulated according to their marital status. According to these findings, the percent married decreases with the increasing severity of disability. The age of onset would be expected to greatly influence marital status; but it also appears that marital disruption is more frequent among disabled people (Allen, 1976).

Table 8

Marital Status of Respondents

Disability Status	Married		Not Married		All Persons	
	No.	%	No.	%	No.	%
Severe	266	53.0	235	47.0	501	90
Serious	1311	59.7	884	40.3	2194	100
Minor	2635	73.7	941	26.3	3576	100
Nondisabled	6363	78.7	1722	21.3	8085	100

The greatest concentration of disabled persons is located in the
southern region, as can be seen in Table 9. This study over-represents
the South, because that region accounts for the greatest number of
people in all categories. Within each region the distribution of persons
among the four categories of disability is fairly even. In all regions,
the number of disabled is 3 to 4 times more than nondisabled.

Allen finds that 37 percent of the disabled persons in the United
States live in the South, but that the South accounts for only 31 percent
of the total U.S. population. The high incidence of disability is
probably due to the high incidence of poverty and its effect on employ-
ment, living conditions, nutrition and disease prevention.

Table 9

Region of Residence for Respondents

Disability Status	West		Northeast		North Central	
	No.	%	No.	%	No.	%
Severe	66	13.2	125	25	122	24.4
Serious	338	15.4	459	21	455	20.8
Minor	619	17.3	700	19.6	1028	28.8
Nondisabled	1337	16.6	1840	22.8	2367	29.3

	South		Other		All Persons	
	No.	%	No.	%	No.	%
Severe	186	37.2	2	.2	501	100
Serious	937	42.6	5	.2	2194	100
Minor	1221	34.1	8	.2	3576	100
Nondisabled	2521	31.1	20	.2	8085	100

Persons living in large cities (100,000 or more, or in suburbs of those cities) account for the largest percentage of persons in each of the four categories. More disabled persons live in rural areas than nondisabled. It is not known what impact living in a rural area has on recovery rates of disabled persons, but past studies have shown a negative effect on participation in public programs.

Table 10

Rural-Urban Residence

Disability Status	Rural No.	%	Town 25,000 No.	%	Small City 100,000 No.	%
Severe	110	21.7	71	14.2	123	24.4
Serious	510	23.2	277	12.6	550	25.1
Minor	785	21.9	612	17.1	967	27.0
Nondisabled	1440	17.8	1348	16.6	2065	25.5

	Metropolis No.	%	Other No.	%	All Persons No.	%
Severe	181	36.4	16	3.3	501	100
Serious	770	35.1	87	4.0	2194	100
Minor	1118	32.3	94	1.7	3576	100
Nondisabled	2931	36.2	301	3.2	8085	100

3. HEALTH INSURANCE COVERAGE

This analysis focuses on the type of health insurance used by the disabled. It is intended to determine the impact of certain variables throught to affect the choice of participation in Medicaid or in private insurance plans. If there are inequities in terms of enrollment (as previous studies have indicated), this analysis may provide insights regarding what factors predict low probabilities of coverage.

It would be expected that a family's economic well-being would play a strong role in determining enrollment both in public and private insurance. The effect of increasing income on participation would be opposite for the two types. An increase in income would be expected to increase participation in private insurance, but to cause a decrease in participation in Medicaid. Private insurance premiums become more affordable as income increases, but one could expect a decrease in participation in Medicaid due to the low-income eligibility requirements. To control for this important factor, the survey sample is divided into two categories based on income relative to family needs. For this purpose a welfare ratio variable labelled PCINC is used. The household income (that is, wages, transfer payments, dividends, etc.) is divided by the need standard for that family (see appendix, Table B-1). To separate persons who were below or near the poverty level from those above the poverty level, a value of 1.25 on PCINC serves as a cutoff between the two groups.

Medicaid is intended to provide medical care for persons who need but are unable to afford it. However, not all poverty-stricken people

are covered by Medicaid. Davis and Schoen (1978) estimate that about

one-third of the nation's poor are not covered by current federal health

care programs. Using a 1.25 cutoff will allow for examination of factors

which influence participation within this needy group. For comparison

purposes the analysis of private health insurance coverage is conducted

separately for persons below, and then above, 125 percent of the poverty

line.

Table 11 contains variables used in models predicting participation

in Medicaid or in private health insurance plans. Separate regressions

were obtained for each model and each type of insurance. Multiple

regressions provide parameter estimates of relationships between the

dependent and independent variables when all other independent variables

are held constant. The regression coefficients for the categorical

dummy variables are readily interpreted as the impact of belonging to

a particular category (e.g. race-black) relative to membership in a

comparison category (e.g., white). For the purposes of this study,

results are discussed when the relevant regression coefficient is

statistically significant at the 0.05 level. Coefficients significant

at this level are starred (*) once. In addition, coefficients found

to be significant at the 0.01 level are starred twice (**).

The dependent variable PUINS is a dichotomous dummy variable,

based on a survey question determining whether or not a person had

received services through Medicaid. The other dichotomous dependent

variable, PRINS, is based on a series of survey questions about enrollment

in private insurance. Appendix A, Table A-2 contains the survey questions

used to build both variables.

Table 11

Dependent Variables

PUINS -- Dummy variable equals 1 if the respondent is enrolled in the Medicaid program and is not covered by a private health insurance policy, otherwise 0.

PRINS -- Dummy variable equals 1 if the respondent has health insurance coverage through a private source only.

Independent Variables

PCINC -- Continuous variable whose value is derived by dividing the family income by the need standard as determined by family residence and size and by the age and sex of the household head.

ASSETS -- Continuous variable whose value is derived by adding the net value of any real estate, stocks, tools, equipment or other assets.

INCOME -- Continuous variable whose value equals the sum of family wages, income from government and private transfer programs, earnings from interest, rent or other sources.

SEVERE -- Dummy variable equals 1 if the respondent suffers a health condition which prevents employment and which causes severe mobility or dexterity problems.

SERIUS -- Dummy variable equals 1 if the respondent has a disability that either:
        (i)   prevents employment, but does not involve serious mobility or dexterity problems or that
      (ii)   limits the type of employment or working hours and involves severe mobility or dexterity problems.

MINOR -- Dummy variable equals 1 if the respondent has a health condition which does not prevent working full time but may involve other minor limitations.

NODIS -- Dummy variable equals 1 if the respondent does not suffer a disabling health condition (omitted category).

SEVACC -- Dummy variable equals 1 if the respondent has a severely disabling condition caused by an accident.

SVNACC -- Dummy variable equals 1 if the respondent has a severely disabling condition not resulting from an accident.

SERACC -- Dummy variable equals 1 if the respondent has a seriously disabling condition resulting from an accident.

SRNACC -- Dummy variable equals 1 if the respondent has a seriously disabling condition not caused by an accident.

MINACC -- Dummy variable equals 1 if the respondent has a minor disability resulting from an accident.

MNNACC -- Dummy variable equals 1 if the respondent has a minor disability not resulting from an accident.

SEVLON -- Dummy variable equals 1 if the respondent has been severely disabled for 10 years or more.

SEVMED -- Dummy variable equals 1 if the respondent has been severely disabled for 3 to 9 years.

SEVLEA -- Dummy variable equals 1 if the respondent has been severely disabled for 2 years or less.

SERLON -- Dummy variable equals 1 if the respondent has been seriously disabled for 10 years or more.

SERMED -- Dummy variable equals 1 if the respondent has been seriously disabled for 3 to 9 years.

SERLEA -- Dummy variable equals 1 if the respondent has been seriously disabled for 2 years or less.

MINLON -- Dummy variable equals 1 if the respondent has had a minor disability for 10 years or more.

MINMED -- Dummy variable equals 1 if the respondent has had a minor disability for 3 to 9 years.

MINLEA -- Dummy variable equals 1 if the respondent has had a minor disability for 2 years or less.

ICDIS -- Dummy variable equals 1 if the respondent receives income from the Aid to the Permanently and Totally Disabled (APTD) program.

ICEMP -- Dummy variable equals 1 if the respondent receives income from Aid to Families with Dependent Children (AFDC) program, Unemployment Compensation, or other welfare programs.

ICPEN -- Dummy variable equals 1 if the respondent receives income from Social Security, Railroad Retirement, government or private pensions.

ICSIC -- Dummy variable equals 1 if the respondent receives income from State Cash Sickness Benefits, Workmen's Compensation or Veteran's Benefits.

WEST -- Dummy variable equals 1 if the respondent resides in western region. See Appendix C for list of states within regions.

NEAST -- Dummy variable equals 1 if the respondent resides in the north-eastern region (omitted category).

NCENT -- Dummy variable equals 1 if the respondent resides in the north-central region (omitted category).

SOUTH -- Dummy variable equals 1 if the respondent resides in the southern region.

RURAL -- Dummy variable equals 1 if the respondent resides on a farm, ranch or other rural setting.

TOWN -- Dummy variable equals 1 if the respondent resides in a small city with a population less than 25,000 people.

CITY -- Dummy variable equals 1 if the respondent resides in a city with a population between 25,000 and 100,000 people (omitted category).

METRO -- Dummy variable equals 1 if the respondent lives in a city with a population over 100,000 people or lives in a suburb of a large city.

NOEDUC -- Dummy variable equals 1 if the respondent has not received formal education.

SOMGRAD -- Dummy variable equals 1 if the respondent has received up to 8 years of formal education.

GRADE -- Dummy variable equals 1 if the respondent has completed elementary school.

SOMHI -- Dummy variable equals 1 if the respondent has some high school education.

HIGH -- Dummy variable equals 1 if the respondent has completed high school.

COLLE -- Dummy variable equals 1 if the respondent has had post high school education. (omitted category)

TWETHI -- Dummy variable equals 1 if the respondent is between 20 and 30 years of age.

THIFOU -- Dummy variable equals 1 if the respondent is between 30 and 40 years of age.

FOUFIF -- Dummy variable equals 1 if the respondent is between 40 and 50 years of age. (omitted category)

FIFSIX -- Dummy variable equals 1 if the respondent is between 50 and 60 years of age.

SEX -- Dummy variable equals 1 if the respondent is male.

RACE -- Dummy variable equals 1 if the respondent is white.

MARI -- Dummy variable equals 1 if the respondent is married.

All regressions contain the same set of control variables, which are designed to account for factors which have been found in previous studies to influence participation. These along with the independent variables will be described briefly. The discussion of the results will add to their understanding.

Independent Variables

The variable PCINC is included within the models as a continuous variable. This variable and another continuous variable measuring real assets are used to determine the effect of our economic resources on participation.

Table II describes a series of four variables which are based on a person's participation or nonparticipation in certain public and private income-transfer programs. These variables are ICDIS, ICEMP, ICPEN and ICSIC. Their purpose is to measure the effect of knowledge acquired by participation in these programs, and to discover the extent that these programs substitute for Medicaid coverage.

The severity of a disability is expected to affect participation in the two insurance programs. This characteristic is measured in two ways. The four types of disability variables—severe, serious, minor, and nondisabled—are used in Models I and II. Models III and IV contain different forms of these variables. For this purpose, the type of disability a person has is combined with variables measuring whether or not the condition was accident-caused, and the duration of a disability. Table II contains a complete description; SEVACC and SERLEA are examples.

An individual who is disabled because of a chronic condition would be expected to incur medical expenses, but probably would find it difficult to obtain private health insurance. Consider also the suddenness of an accident-caused condition, which implies no time to prepare financially for the medical costs. Depending on its severity, an accident can cause intense damage requiring extensive medical care. Medicaid may be difficult to obtain. Depending on the eligibility requirements of a state, an individual usually needs to show that the damage is permanent and totally disabling before he/she can enroll in Medicaid; this may require time.

The variables involving duration of the disability are designed to measure interactive effects between the extent and the length of the disability. A person who has suffered a severe disability for ten years will probably find it impossible to obtain health insurance from private sources. Because the disability appears permanent and total, the person should qualify for Medicaid. But a person who has suffered a minor disability for ten years may have difficulty with private

insurance companies and may not be severely disabled enough to qualify for Medicaid.

Control Variables

Because the study includes persons between the ages of twenty and sixty, four ten-year age categories are used. It is expected that disability increases with age. Holding disability constant, increasing age may influence participation, because persons may pursue enrollment more actively in anticipation of health problems due to aging. More importantly, increasing age reduces the possibility of obtaining inexpensive, high-quality private health insurance.

Age may also influence personal attitudes towards public programs. Older individuals may feel there is a social stigma to participating in medical assistance programs. Younger people may not be as hesitant to enroll, because accepting public assistance is not as much shunned as it used to be.

A dichotomous dummy variable is used to control for differences due to sex. Because adults who are enrolled in the Aid to Families With Dependent Children program (AFDC) are also eligible for Medicaid, it is expected that females would show greater participation in Medicaid. On the other hand, due to greater participation in the work force, males may have greater access to private insurance through employment.

The dichotomous dummy variable for marriage is also used in each of the models. It would be expected that married persons would not

participate in the Medicaid program to the extent that unmarried persons do. The fact that the AFDC program does not usually admit two-parent families into the program would greatly influence the results. In addition, a married individual has a better chance of private coverage, because he/she may qualify as a dependent under an employer-provided program.

Race is also used as a control variable in this study. Past studies have indicated inequities in the Medicaid program, and it is expected that similar results can be found in private insurance. Personal attitudes of insurance sales people, and the difficulty of finding employment offering complete health insurance coverage, are some reasons that nonwhites suffer inequities.

Holding other variables constant, education would be expected to influence employment, which in turn determines fringe benefits such as health insurance. In addition, education influences other factors, such as personal care and hygiene, which affect health.

Previous studies have indicated that participation and expenditures, along with program effectiveness and administration, vary from state to state. Expenditures for hospital inpatient care per eligible person in the highest states are over four times those in the lowest states (Davis, 1973). Variations across states are even greater for medical services and hospital outpatient care. Because it is not possible to include a variable for state location, the states are grouped into four regions as a control for part of the variation among states.

Residence type is expected to influence participation, for reasons
of administration and accessibility. Persons living in rural areas or
small towns may find it difficult to enroll or may not have access to
Medicaid-approved physicians or medical facilities. The four categorical
variables for residence are designed to control for this variation.

Results: Participation in Medicaid

Table 12 contains the results of the multiple regression analysis
for persons who are near or below poverty. The financial resources
of these respondents tend to be below Medicaid eligibility limits.
The results are presented according to the predictive model and type
of insurance. A section follows which discusses the findings on private
insurance.

Models I through IV contained both PCINC and ASSETS to determine
economic influences on participation in Medicaid. PCINC does not
significantly influence the dependent variable. Therefore it appears
that incremental differences in income when a family is at near or
below poverty level do not affect participation. However ASSETS
(which included the net value of such assets as real estate, stocks,
bonds and capital investments) are significant in Models I and III.

As assets increase participation decreases. This effect is due to
the eligibility requirements of the Medicaid program. Along with income,
assets are evaluated in the screening process which takes place when
persons apply for public assistance or Medicaid. An individual residing

Table 12

Regressions Predicting Medicaid Use (Public Health Insurance Coverage) for
Persons With Income Below 125 Percent of the Official Poverty Level
(Y = .1515) (All Coefficients are Standardized)

	N	Model I	Model II	Model III	Model IV	Model IVa
Economic Information						
ASSETS	3495	-.0503**	-.0188	-.0512**	-.0184	-.0175
PCINC	3495	.0176	-.0198	.0167	-.0194	
INCOME	3495					.0090
Program Participation						
ICDIS	365		.4031**		.4005**	.3976**
ICPEN	916		-.0020		-.0095	-.0159
ICEMP	574		.3314**		.3333**	-.3285**
ICSIC	354		-.0365*		-.0351**	-.0394**
Disability Status						
SEVERE	258	.1126**	.0220			
SERIUS	988	.2440**	.1326**			
MINOR	869	.0667**	.0408**			
NONDISABLED (omitted)	1336					
SEVACC	45			.0270	-.0125	-.0125
SVNACC	200			.0394	-.0231	-.0219
SERACC	212			.0401	.0286	.0291
SRNACC	755			.1167*	.0867	.0881
MINACC	197			.0115	.0183	.0162
MNNACC	631			.0375	.0727	.0702
SEVLEA	24			-.0261	-.0158	-.0158
SEVMED	41			.0500	.0342	.0334
SEVLON	187			.0624	.0472	.0494
SERLEA	145			.0483	.0201	.0200

Table 12--continued

	N	Model 1	Model II	Model III	Model IV	Model IVa
SERMED	303			.0849*	.0425	.0428
SERLON	511			.1076*	.0402	.0417
MINLEA	169			.0424	-.0049	-.0038
MINMED	243			.0080	-.0253	.0236
MINLON	441			.0160	-.0185	-.0159
Age						
TWETHI	777	-.0441**	-.0582**	.0455*	-.0578**	-.0572**
THIFOU	531	-.0089	-.0198	-.0079	-.0177	-.0180
FIFSIX	1365	-.0594*	-.0389*	.0605**	-.0397*	-.0390*
FOUFIP (omitted)	882					
Region						
WEST	480	.0877**	.0327*	.0871**	.0323*	.0310
NEAST	747	.0707**	.0322	.0692**	.0301	.0306
SOUTH	1380	-.0539**	-.0327	-.0549**	-.0337	-.0329
NCENT (omitted)	878					
Education						
NOEDUC	152	.0373*	-.0035	.0357	-.0058	-.0058
SOMGRAD	778	.1083**	.0289	.1084**	.0272	.0252
GRADE	437	.0497*	.0172	.0500*	.0160	.0134
SOMHIGH	722	.0621**	.0186	.0617**	.0179	.0151
HIGH	847	.0380	.0086	.0398	.0087	.0066
COLLE (omitted)	506					
Residence						
RURAL	873	.0157	.0104	.0164	.0110	.0101
TOWN	836	.0010	-.0054	.0003	-.0056	-.0067
METRO	1189	.0377	.0299	.0362	.0292	.0278
CITY (omitted)	459					

Table 12--continued

	N	Model I	Model II	Model III	Model IV	Model IVa
Personal Information						
SEX	1577	-.0741**	-.0345*	-.0702**	-.0299*	-.0304*
MARI	1533	-.0664**	-.0510**	-.0675**	-.0502**	-.0543**
RACE	2777	-.1176**	-.0480**	-.1162**	-.0478**	-.0470**
$\bar{R}^2$		.1275	.3439	.1299	.3454	.3451

**Significant at .01 level.

* Significant at .05 level.

in a state which permits medically needy persons to enroll is required
to declare assets.

Additional evidence can be found by examining Models II and IV;
there the ASSETS variable is not significant when the variables for
participation in programs are included. This indicates correlation
between assets and enrollment in programs. ASSETS remains negative
but is not significant.

The coefficients for the four program variables vary within the
models. Persons who receive benefits from Unemployment Compensation,
AFDC or other welfare programs are included in the variable ICEMP.
In Model II, the coefficient for this variable is .3314, which is
significant. The fact that persons who are enrolled in AFDC are
automatically eligible for Medicaid, as are persons who are enrolled
in other public assistance programs, explains the large positive
coefficient.

ICPEN represents persons who receive benefits from government or
private pension and retirement plans. Though not significant, its
negative coefficient suggests that the medical care needs of the
retired are partly met by retirement programs.

ICSIC includes persons receiving Veteran's payments, Workmen's
Compensation or State Cash Sickness Benefits. Predictably, it is
significant: the medical care provisions of those programs render
Medicaid unnecessary.

As expected, the coefficient for the variable ICDIS is large and
positive (.4031). This variable deals strictly with participation

in APTD, which automatically enables a person to receive Medicaid.

In addition to other requirements for enrollment in this program,

an individual must be medically evaluated and declared to be permanently

and totally disabled, as defined by the state.

In general, the findings for the program variables can be interpreted

as evidence that knowledge about government programs does affect Medicaid

coverage. However it is also likely that other programs act as substitutes

for Medicaid coverage.

In Models I and II severity is measured by three categorical

variables indicating severe, serious, and minor disability, with

nondisabled as the left-out category. In both regression models, the

coefficient for the seriously disabled is the largest of three positive

coefficients. Although it had been expected that disabled persons

would be more likely to participate due to their greater need, it is

surprising that the severely disabled are less likely to use Medicaid

than the seriously disabled. One explanation for this is that the

severely disabled have physical access problems that prevent Medicaid

enrollment. However another possibility is that the severely disabled

are more likely to use other health assistance programs. Indeed, when

the other program variables are added in Model II, the pattern of

coefficients changes. Relative to Model I, all of the disability

category coefficients are smaller, but the greatest reduction is for the

severely disabled. However the correlation between severe disability

and enrollment in the other programs is not high. For example, the

correlation of SEVERE with ICDIS is 0.228. Therefore it can be concluded that there are severely disabled persons who are not enrolled in Medicaid, or in other programs providing health care.

Models III and IV use interaction variables in an attempt to determine if disability duration and accidental causes alter any of the relationships discovered thus far.

In Model III, none of the severely disabled variables is significant, probably because of the small number of cases in these categories. SRNACC is positive and significant, and it includes 755 cases. MNNACC includes 631, and though it is positive, it is not significant. Persons who suffer minor disabilities which are not accident caused may not feel a need to enroll in Medicaid, because their expenses are not very great; they may find themselves financially able to handle them. However, since only 7.2 percent of the respondents with minor disabilities are enrolled in Medicaid, the non-enrollment is more likely to be a result of the eligibility requirements of Medicaid programs. Persons in this category may not be disabled enough to qualify.

The variables measuring the effect of duration and severity on enrollment indicated also that seriously disabled persons are more likely to enroll in the program. In Model III, the severely disabled variables are not significant, but they are small categories. The categories SERMED and SERLON, which measure serious disabilities of longer durations, are significant and positive. MINLON, which measured the effect of a minor disability for ten years or more, was positive but not significant.

In Model IV, which controls for participation in other programs, none of the interactive variables are significant. Judging from the size of the coefficients, the longer a seriously disabled person remains disabled the better are his/her chances of being enrolled. Persons with a minor disability are likely not to participate in Medicaid.

It would appear from these results that the interactive variables do not provide any additional information. However, in most categories the number of cases was very small.

The models yield interesting results for the control variables. Age proves to be a strong determinant of participation. Compared to persons aged 41 to 50, people who are between the ages of 20 and 30 or 51 and 60 have significantly less chance of being covered by Medicaid.

Persons in the younger age category may participate less because they may expect fewer health problems and may not have as great a present need to enroll in Medicaid as older people do. Even persons in this age group who are severely disabled may be able to depend on financial assistance from someone else, such as a spouse or parents.

In the older age category, persons have fewer relatives to rely on and are suffering decreases in their earning power. They have a greater need for medical care due to aging. This age group contains the highest percentage of disabled persons. Models II and IV, which control for participation in other government programs, also suggest that persons in this oldest age group have difficulty enrolling in the Medicaid program.

Location would be expected to influence participation in Medicaid, because of problems of accessibility and differences among state programs.

Surprisingly, it appears not to have an effect on participation; persons living in rural areas and small towns seem to have just as much access to Medicaid as persons in large metropolitan areas.

Regional variation does exist, however. As compared to persons living in the North Central region of the country, people living in the Western region have a significantly better chance of being enrolled in Medicaid. This result is consistent throughout the four models, but the size of the coefficient depends on whether or not the program participation variables are included. In Model I, all three regional variables are significant; the West and Northeast regions retain a positive sign while the Southern region exhibits a negative coefficient. California has a generous medical assistance program, which probably explains much of the behavior of the WEST variable.

When the program variables are used in Model II, the regional coefficients retain their signs, but only WEST remains significant. This would substantiate the claims of former studies showing differences among states in program administration and requirements. The behavior of the variable SOUTH gives credence to claims found in other studies of lack of coverage in Southern states.

Controlling for program participation also affects the results for the education variables. In Models I and III, the education variables indicating less than twelve years of schooling are significant and positive. When the program variables are used in Models II and IV, none of the education variables is significant. Even within the subset

of persons below 125 percent of poverty, it appears that under-educated persons are more likely than the educated to be enrolled in Medicaid and in government programs. Persons who are under-educated and poor are more likely to have been included in some kind of government program as children. These results may be the effect of poor persons being "plugged in" to the welfare system. Health status, or a person's perception of health status, may also affect the education results. Persons who are high school graduates and above may be somewhat knowl-edgeable about preventive medicine and health care. They may not enroll in Medicaid because their needs are not as great; or they may have more alternatives. We will examine these in the following section, which discusses participation in private health insurance.

The variable for sex is significant, and behaves predictably. Males have significantly less chance of being enrolled in Medicaid than females. This is clearly related to the fact that a large number of women are enrolled in the AFDC program. Married persons also are less likely to obtain Medicaid. Again, this reflects the operation of the AFDC categorical eligibility rules.

According to this survey, whites have a significantly poorer chance of being enrolled in the Medicaid program than nonwhites. This effect is consistent in Models II and IV when program participation is controlled for, and demonstrates the advantage of analyzing individual case record data with multivariate methods. Previous studies have failed to control for correlation among race and other characteristics, and have incorrectly concluded that nonwhites have less coverage.

Results: Participation in Private Insurance

The four predictive models are used in regressions which make
participation in private insurance the dependent variable. Table 13
displays results for persons below 125 percent of the poverty line.
Later, Table 14 will be discussed in reviewing the results for persons
with incomes above 125 percent of poverty. Results are predictable
in Table 13 for assets and income. As assets and income increase,
private insurance policies become affordable; and since poverty has
been associated with poor health, insurance companies probably consider
persons who are financially better off to be better risks than poor people.

The presence of a disability is a deterrent to coverage by private
insurance, as seen in Models I and II. There are significant negative
coefficients for persons with the three types of disability. All are
significant at the .01 level.

As before, Model II controls for participation in other programs.
This version yields smaller severity coefficients. However, these
negative coefficients are significant, indicating that many persons
who are ineligible for medical assistance programs find it difficult
to purchase private insurance.

To substantiate this further, the same regression is run for
persons whose PCINC is over 125 percent of the official poverty cutoff.
(See Table 14). Model II shows significant negative coefficients for
all the disability variables. Since disabled persons are expected to
incur more medical expenses than the average person, it is not profitable
to insure them.

Table 13

Regressions Predicting Private Health Insurance Coverage for Persons With Incomes Below
125 Percent of the Poverty Level
($\overline{Y}$ = .4943) (All Coefficients are Standardized)

	N	Model I	Model II	Model III	Model IV
Economic Information					
ASSETS	3495	.0894**	.0724**	.0921**	.0744**
PCINC	3495	.0135	.0464**	.0149	.0460**
Program Participation					
ICDIS	365		-.1628**		-.1609**
ICPEN	916		-.0071		-.0093
ICEMP	574		-.1927**		-.1940**
ICSIC	354		-.0385*		-.0360*
Disability Status					
SEVERE	258	-.1287**	-.0858**		
SERIOUS	988	-.2225**	-.1651**		
MINOR	869	-.0844**	-.0690**		
NONDISABLED (omitted)	1336				
SEVACC	45			-.0577*	-.0342
SVNACC	200			-.0485	-.0120
SERACC	212			-.0824*	-.0715*
SRNACC	755			-.1105*	-.0927
MINACC	197			.0183	.0181
MNNACC	631			.0632	.0533
SEVLEA	24			.0121	.0183
SEVMED	41			-.0077	-.0047
SEVLON	187			-.0668	-.0672
SERLEA	145			-.0245	-.0134

Table 13--continued

	N	Model I	Model II	Model III	Model IV
SERMED	303			-.0530	-.0262
SERLON	511			-.0780	-.0434
MINLEA	169			-.0923**	-.0704*
MINMED	243			-.0562	.0441
MINLON	441			-.1134*	-.0958*
Age					
TWETHI	777	.0103	.0129	.0135	.0156
THIFOU	531	-.0074	-.0057	-.0043	-.0028
FIFSIX	1365	.0211	.0087	.0188	.0064
FOUFIF (omitted)	822				
Region					
WEST	480	-.0970**	-.0753**	-.0960**	-.0744**
NEAST	747	.0041	.0214	-.0029	.0208
SOUTH	1380	-.0475*	-.0592**	-.0484*	-.0603**
NCENT (omitted)	878				
Education					
NOEDUC	152	-.0472*	-.0331*	-.0464*	-.0312
SOMGRAD	778	-.1840**	-.1476**	-.1851**	-.1473**
GRADE	437	-.1069**	-.0906**	-.1075**	-.0903
SOMHIGH	722	-.1156**	-.0917**	-.1142**	-.0901**
HIGH	847	-.0505*	-.0356	-.0520*	-.0363
COLLE (omitted)	506				
Residence					
RURAL	873	-.0339	-.3333	-.0334	-.0328
TOWN	836	.0026	.0077	.0041	.0089
METRO	1189	.0320	-.0280	-.0315	-.0269
CITY (omitted)	459				

Table 13--continued

	N	Model I	Model II	Model III	Model IV
Personal Information					
SEX	1577	-.0272	-.0457**	-.0240	-.0438**
MARI	1533	.1134**	.1068**	.1146**	.1072**
RACE	2777	.1215**	.0884**	.1237**	.0909**
$\overline{R}^2$		.1628	.2111	.1622	.2103

**Significant at .01 level.

* Significant at .05 level.

For the interactive variables in Models III and IV, the two more seriously disabled groups within the accident categories have negative but not significant coefficients. As in Model II, the inclusion of program variables in Model IV causes a decrease in the coefficients. Regarding the duration variables, the presence of the program variables has the same effect. Prior to their inclusion, Model III indicates that only two, MINLEA and MINLON, were significant, and that almost all were negative.

In the higher income group none of the duration variables are significant, whereas the accident variables for the two more seriously disabled groups are both negative and significant. In Model IV three of the accident variables retain their significance.

In these regressions, many of the categories become quite small. It is therefore difficult to draw inferences about them. It would appear that the severity of a disability does affect participation, but that duration does not. Similarly, whether or not a condition is sudden or unexpected because of an accident, participation rates are not affected.

Participation in public programs is negatively related to coverage by private insurance. Within the low income group, Models III and IV indicate that ICDIS, ICEMP, and ICSIC are significantly negative, but ICPEN is not significant. This would indicate that low-income persons within these programs do not need to purchase private insurance. Persons receiving Social Security or other pensions, however, are similar to those not receiving these benefits.

Table 14

Regressions Predicting Private Health Insurance Coverage for Persons With Income
Above 125 Percent of the Official Poverty Level
(Y = .8108) (All Coefficients are Standardized)

	N	Model I	Model II	Model III	Model IV
Economic Information					
ASSETS	8453	.0068	.0011	.0066	.0011
PCINC	8453	.0297**	.0241*	.0325**	.0264*
Program Participation					
ICDIS	44		-.0966**		-.0957**
ICPEN	1289		-.0851**		-.0837**
ICEMP	579		-.0308**		-.0315**
ICSIC	1085		-.1288**		-.1266**
Disability Status					
SEVERE	161	-.0734**	-.0416**		
SERIOUS	789	-.1492**	-.0857**		
MINOR	2028	-.0889**	-.0635**		
NONDISABLED (omitted)	5347				
SEVACC	40			-.0437**	-.0271*
SVNACC	121			-.0481**	-.0232
SERACC	207			-.1314**	-.0908**
SRNACC	568			-.1481**	-.1011*
MINACC	587			-.0289	-.0195
MNNACC	1346			-.0532	-.0537
SEVLEA	25			-.0092	.0088
SEVMED	58			-.0224	-.0201
SEVLON	78				
SERLEA	147			.0402	.0340

Table 14--continued

	N	Model I	Model II	Model III	Model IV
SERMED	309			.0406	.0431
SERLON	322			-.0005	.0046
MINLEA	342			.0031	.0104
MINMED	711			-.0055	.0034
MINLON	951			-.0432	-.0232
Age					
TWETHI	1324	-.0143	-.0239	-.0147	-.0241*
THIFOU	1559	.0238	.0104	.0239	.0108
FIFSIX	3019	.0111	.0103	.0117	.0114
FOUFIP	2551				
(omitted)					
Region					
WEST	1448	-.0707**	-.0603**	-.0676**	-.0582**
NEAST	1950	.0234	.0223	.0249*	.0234
SOUTH	2473	-.0824**	-.0805**	-.0810**	-.0795**
NCENT	2565				
(omitted)					
Education					
NOEDUC	25	-.0233*	-.0207*	-.0239*	-.0212*
SOMGRAD	572	-.0534**	-.0494**	-.0518**	-.0481**
GRADE	774	-.0788**	-.0712**	-.0781**	-.0706**
SOMHIGH	1506	-.0436**	-.0389**	-.0451**	-.0402**
HIGH	3314				
COLLE	2213				
(omitted)					
Residence					
RURAL	1506	-.0298*	-.0296*	-.0276*	-.0279*
TOWN	2218	-.0032	-.0037	-.0010	-.0019
METRO	3013	.0143	-.0127	.0144	.0127
CITY	1439				
(omitted)					

Table 14--continued

	N	Model I	Model II	Model III	Model IV
Personal Information					
SEX	4347	.0374**	-.0212*	-.0358**	-.0214*
MARI	7387	.0743**	.0639**	.0747**	.0643**
RACE	7885	.0269*	.0278**	.0269*	.0277**
$\bar{R}^2$		.0632	.0963	.0660	.0981

**Significant at .01 level.

* Significant at .05 level.

In the regression using people above the 125 percent cutoff, all
of the program variables are negative and significant. Within this
group, persons participating in public programs are less likely to be
covered by private insurance than those not participating. For example,
Table 14 indicates that ICPEN is significant. Though private insurance
may be affordable to a person with a pension, many do not buy it.

Table 13 also contains the results for the control variables.
Surprisingly, age variables are not significant within the low-income
group. It would be expected that as age increased, participation
would decrease because of the higher incidence of health problems.
The nonsignificance of age in the low-income group may be due to the
inclusion of other factors such as income, incidence of disability and
participation in public programs, all of which are related to age.

The youngest age category is the only negative age variable in
the higher-income group. It is significant in Model IV, the only
instance of a significant coefficient for an age indicator. Persons
in this category may not feel a need to purchase health insurance,
or they may not anticipate medical costs beyond what they can afford.

As in the Medicaid models, residence type among low-income people
does not affect participation in private insurance programs, although
compared to CITY, persons in rural areas or large metropolitan areas
have negative coefficients.

These results are not similar to those for the higher-income group,
where METRO retains a positive coefficient. RURAL and TOWN are both
negative; RURAL is significant. Insurance may not be readily available
to low-wage and self-employed workers in rural areas.

Regional variations occur, with WEST and SOUTH retaining negative

significant coefficients in all models. Persons in these groups are

less likely to be covered than persons who were from the North Central

region. The coefficients become smaller when program participation

is taken into consideration. Even among higher-income persons, the

variables behave similarly.

The educational variables also retain their significance when the

program variables are introduced. These variables retain a negative

coefficient, indicating that insurance companies are reluctant to

insure persons who have not graduated from high school. This may not

be strictly the effect of education, but may also be related to health

status, health care and type of employment.

As was the case for Medicaid, males are less likely than females

to have coverage under private insurance, in all models and for both

income groups. However, married persons are more likely to be covered

under private insurance than are the nonmarried. Married persons may

seek private insurance because the financial loss due to illness is more

serious when there are dependents. Finally persons who are white have

a better chance than those who are not of obtaining coverage through

private insurance. It is possible that nonwhites find discrimination

a barrier to obtaining health insurance. Additionally, nonwhites suffer

higher unemployment and, if employed, often hold low-paying blue-collar

jobs, where group insurance benefits are not common.

In summary, disabled persons are not likely to obtain health

insurance coverage through private sources. To test this further,

regressions have been conducted on persons whose income was above the 125 percent income/needs cutoff. Again the disability variables retain significant negative coefficients. One can conclude from this that even if a disabled person can afford private insurance, he or she may not find an insurance company which is willing to insure him/her.

The most important ramifications come to attention when one considers the gaps which appear in the Medicaid analysis. The disabled who are not covered by Medicaid probably are not because of the reluctance of private companies. As emphasized previously, there are some severely disabled people who may have problems of access to Medicaid. In addition, there are those with minor disabilities who do not qualify for Medicaid. Persons with severe disabilities clearly have difficulty, but even persons with minor disabilities appear to have difficulty obtaining private insurance.

4. SUMMARY

Because a disabling condition can make it difficult to obtain private insurance, the Medicaid program is essential to the health insurance needs of disabled persons. However eligibility rules and benefits vary to an extent that raises concern about the ability of disabled and other persons to enroll in Medicaid. This study uses the 1972 Survey of Disabled and Nondisabled Adults to examine Medicaid participation and private health insurance coverage for three categories of disabled persons, in comparison with nondisabled persons. Disability

is here defined with respect to employment problems <u>and</u> mobility or

dexterity difficulties. Cross-tabulations yield basic descriptive

information about the survey population. Some of the findings include

the following. The incidence of disability increases with age. Among

nonwhites and females disability is more common than among whites and

males. As shown elsewhere, more disabled than nondisabled are not

covered by either Medicaid or private insurance, and this lack of

coverage particularly affects the severely disabled. The incidence

of poverty increases as the severity of a disability increases.

Medicaid

To predict participation in Medicaid, standard multiple regression

techniques are used, with a dichotomous dummy variable for participation

serving as the dependent variable. The survey population is divided

into two groups based on income/needs: those near or below the poverty

cutoff and those above the cutoff. For Medicaid only those persons

below 125 percent of the poverty line were included in the analysis

sample.

Taken as a whole, the regression analysis indicates that Medicaid

provides good health insurance coverage for many disabled people, but

that there are serious exceptions. Among the severely disabled, whose

medical care needs are the greatest, there is evidence that there are

enrollment problems. Even when participation in other assistance programs

is controlled for, Medicaid participation within this disabled group is

low. Recalling that these persons suffer from limited mobility and motility, this finding may indicate that they have an accessibility problem. Both enrollment locations and Medicaid-approved facilities must be readily accessible for a person to receive medical care. Without special public transportation or assistance from friends or relatives, Medicaid can be quite inaccessible to severely disabled people.

For all disabled people, enrollment in other assistance programs appears to be very important. Participation in these programs seems to affect their participation in Medicaid. Some of these programs provide substitute medical care coverage for recipients; examples are Veterans' Benefits and State Cash Sickness Benefits. In others, such as APTD, enrollment seems to provide the disabled population with knowledge about the Medicaid program.

The Medicaid income/assets requirements and other eligibility determinants vary from state to state. Therefore, persons who are enrolled in one state may not be considered eligible in another state. This study has found significant differences among regions of the nation. A person living in the West has a better chance of being covered than persons in other parts of the country. Particularly in the South, people are not readily accepted into the program; participation is low.

Unlike Davis and Schoen's 1978 findings, this study has found no evidence of a rural access problem. As found in the analysis made by John Holahan (1975), persons living in very large cities are not significantly different from those persons living in less populated areas.

Even when controlling for participation in other programs, males
and married persons are not likely to be enrolled in Medicaid. Due to
stiff eligibility requirements within the AFDC program, low-income
households with both parents present have difficulty enrolling in the
Medicaid program. This creates serious difficulties for two-parent
families who cannot afford proper medical attention for their children.
The long term effects on such children's health may be irreparable,
if serious medical needs arise and are not adequately met.

Private Health Insurance

The analysis of private insurance coverage indicates that it provides
little alternative for poor families. Increased income and assets make
private coverage affordable, but, for disabled people at all income
levels, private health insurance coverage is difficult to obtain.
Persons who suffer disabilities, regardless of their severity, are not
likely to carry private insurance. Since it is expected that persons
who suffer a chronic health condition or impairment may require more
medical care than average, these persons are considered to be poor risks.
Such coverage may not be needed when disabled people are enrolled in
public programs such as APTD. However, when we control for these factors,
disability variables remain significant and negative. Finally, persons
living in the South are less likely to have private insurance than those
in other regions.

REFERENCES

Allen, Kathryn. 1976. "First Findings of the 1972 Survey of the
Disabled: General Characteristics." Social Security Bulletin
39:10, 18-37.

Davis, Karen and Cathy Schoen. 1978. Health and the War on Poverty.
Washington, D.C.: The Brookings Institute.

Holahan, John. 1975. Financing Health Care for the Poor. Lexington,
Mass.: D.C. Heath and Company.

Rossett, Richard N. (ed). 1976. The Role of Health Insurance in the
Health Services Sector. New York: Neale Watson Academic Publications.

Warlick, Jennifer Lynn. 1979. "An Empirical Analysis of Participation
in the Supplemental Security Income Program Among Aged Eligible
Persons." Ph.D. Thesis, University of Wisconsin-Madison.

APPENDIX

Table A-1

Extent of Disability

1972 Survey Question	Severely Disabled	Seriously Disabled Type 1	Minor Disability	Other
1) Employment 36 a,b,c	1) Not able to work	1) Not able to work	1) Does work but limited	1) Does work, not limited
2) Mobility 32 a,b,c	2) Needs help to go outdoors	2) Occasionally or never needs help to go outdoors	2) Occasionally or never needs help to go outdoors	2) Never needs help to go outdoors
3) Motor 35a	3) Usually requires help with personal needs	3) Occasionally or never requires help with personal needs	3) Occasionally or never requires help with personal needs	3) Never requires help with personal needs

Seriously Disabled
Type II

1) Employment 36 a,b,c	1) Health limits kind or amount of work
2) Mobility 32 a,b,c	2) Usually needs help to go outdoors
	and/or
3) Motor 35a	3) Usually requires help with personal needs

Table A-2

Dependent Variable: Participation in Medicaid

Question 90 (3) a, b, c:

During 1971 did you receive free or without charge any--

a) hospital care
b) doctor's service
c) prescriptions, dental care, other medical supplies
   and services

- through Public Assistance?

Dependent Variable: Participation in Private
Insurance

Question 78a:

Are you covered by any hospital or medical insurance that pays
any part of hospital or doctor bills?

If yes, then:

Question 79a 1, 2, 3

Is this policy--

1) From your past or present employment?
2) From your spouse's employment?
3) An individually purchased policy?

Table B-1

Official Poverty Thresholds in 1972

Size of Family	Nonfarm		Farm	
	Male Head	Female Head	Male Head	Female Head
All unrelated individuals				
under 65 years	2254	2085	1916	1772
65 and over	2025	2000	1722	1698
All families				
2 persons, head less than 65 years	2823	2729	2399	2258
2 persons, head over 65 years	2532	2516	2154	2741
3 persons	3356	3234	2838	2702
4 persons	4277	4254	3644	3598
5 persons	5048	4994	4301	4355
6 persons	5679	5617	4849	4900
7 or more	7000	6841	5963	5771

Source: U.S. Department of Commerce, Social and Economic Statistics Administration, Bureau of Census, Current Population Reports, Series P-60, No. 91.

Table C-1

States Within Regions

SOUTH	NEAST (Northeast)	NCENT (North Central)
Alabama	Connecticut	Illinois
Arkansas	Maine	Indiana
Delaware	Massachusetts	Iowa
District of	New Hampshire	Kansas
Columbia	New Jersey	Michigan
Florida	New York	Minnesota
Georgia	Pennsylvania	Missouri
Kentucky	Rhode Island	Nebraska
Louisiana	Vermont	North Dakota
Maryland		Ohio
Mississippi		South Dakota
North Carolina		Wisconsin
Oklahoma		
South Carolina	WEST	
Tennessee		
Texas	Alaska	
Virginia	Arizona	
West Virginia	California	
	Hawaii	
	Idaho	
	Montana	
	Nevada	
	New Mexico	
	Oregon	
	Utah	
	Washington	
	Wyoming	
	Colorado	