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ETHNIC MINORITIES AND ACCESS TO MEDICAL CARE: WHERE DO THEY
STAND?

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ABSTRACT

Recent research on access suggests that while minorities may have achieved equity of access to medical care their during the 1980s this may no longer be the case. Data collected in the 1987 National Medical Expenditure Study are used to examine how whites far relative to blacks, Asians, Puerto Ricans, Cubans and Mexicans on measures of access. Questions on insurance, income, race/ethnicity, place of residence, the usual source of care and the use of ambulatory services were asked of a national probability sample of 36,400 U.S.' residents. This study found that while only 5 percent of the U.S. population regularly used an outpatient department or emergency room in 1987, 19.6 percent of the Puerto Rican, 15.8 percent of the black and 18.4 percent of the Mexican Americans regularly used a hospital based site for their medical needs in 1987. Slightly over 14 percent of Americans were uninsured in the last quarter of 1987. During the same time period 21 percent of the black, 18.3 percent of the Puerto Rican 38.6 percent of the Mexican Americans were uninsured. While 70.6 percent of all Americans made at least one ambulatory visit to a physician during 1987, about 64 percent of the black, Puerto Rican and Cuban Americans and 55 percent of the Asian Americans saw a physician in 1987. Overall Cubans and Asians fared as well as whites on most measures of access, however it is believed that there may be wide variations within the Asian subpopulations, not reflected in the aggregate statistics.

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Introduction

While minorities have come along way in gaining access to medical care, there is a disagreement though as to whether they have achieved equity of access to medical care. The Committee on the Costs of Medical Care reported that the percentage of individuals who obtained no medical care in 1933 was greater the lower the family income, ranging from slightly less than **14 percent** for those in families with incomes of \$10,000 or more to nearly 50 percent for those females with incomes less than \$1,200.' The Committee also concluded that although the black family was not systematically studied, they assumed that they were receiving less medical care than the lowest income group in the study' (note that in 1939, ninety three percent of African Americans were poor, compared to 65 percent of the White **Americans²**).

One of the principal barriers Americans were encountering in gaining access to care was the problem of the affordability of medical services. The introduction of private health insurance plans (principally through employment) during the depression went a considerable way towards solving the problem of the affordability of medical care for most Americans. By 1953 forty one percent of the low income and 80 percent of the upper income families in America had health insurance.' In 1963, 51 percent of the low income families and 89 percent of the upper income families had health insurance. However in spite of the increase in the percent of insured Americans the private insurance option

tended to underserve black Americans because they were disproportionately poor or employed in industries without insurance coverage or with higher turnovers in **employment.**² It wasn't until after the passage of the Medicare and the Medicaid program that the access picture for minorities significantly improved. By 1970, 71 percent of the low income families and 93 percent of the upper income families had health insurance. During the same year seventy percent of the whites and 58 percent of the non-whites in the United States made at least one ambulatory visit to a physician during the year. Whites also reported an average of 4.1 ambulatory visits to a physician during 1970, compared to 3.6 visits for non-whites.' By 1982, eighty percent of the Hispanic and eighty two percent of the white and black Americans saw a physician at least once a year. **At** the same time blacks and Hispanics averaged 6.7 visits to a physician, compared to 5.9 visits for **whites.**³

More recent data on access suggests that the picture for minorities may have worsened. Between 1977 and 1987 the percent of uninsured blacks grew from 18 to 25 **percent.**⁶ During the same time period the percent of uninsured Hispanics grew from 20 to 35 percent, while the percent of uninsured whites only grew from 12 to 15 percent. Blacks and Hispanics accounted for over half of the increase in the number uninsured Americans between 1977 and **1987.**⁶ In 1986 slightly over sixty nine percent of the white Americans saw a physicians at least once during the year, compared to 62.8 percent of black Americans (a decline **from**

1982). Whites averaged 4.4 visits to a physician in 1986, compared to 3.4 visits for blacks.' A second study reported that minorities regardless of perceived health status made fewer ambulatory visits to a physician than whites between 1985 and **1987.**⁸

While differences in the methods of measuring access to medical care may account for some of the differences in access to care, disparities among ethnic minorities may be in large part due to the range of barriers encountered for minorities. Some of the barriers to access are due to the problems of the affordability of care (lack of insurance or income): the availability of care (lack of a usual source of care, differences in the setting where care is delivered): the conveniences of services (travel time to and waiting time at the provider) and language/cultural **barriers.**⁹ Minorities have traditionally been disproportionately dependent on hospital outpatient clinics and emergency rooms for their care. They are also more likely than whites to travel longer to and wait longer at their usual source of care for medical services."'" The National Coalition of Hispanic Health and Human Services Organizations (COSSHMO) found that in 1989 a third of the Medicaid sites in the eight states which comprised 84.4 percent of the Hispanic population in the U.S. (Arizona, California, Florida, Illinois, New Jersey, New York and Texas) provided no special services to help their staff work with Hispanic and monolingual Spanish **clients.**¹²

Along with language barriers and barriers in the availability

of services there were also some disparities in the health status of minorities, some of which are related to gaps in access to care. Blacks and Hispanics were more likely than whites to be in fair or poor health or to report a greater number of disability days in a given **year**.¹³ Blacks are more likely than whites to die from cancer, heart disease, stroke, infant mortality, diabetes and chemical **dependency**.¹⁴ Black females are more likely than white females to bear low birth weight children, children who die shortly after birth and children who die within a year after birth. The Report of the Secretary' Task Force on Black and Minority Health reported that blacks were more likely to have higher heart disease mortality rates than whites because they were less likely than whites to be seen by heart specialists: less likely to undergo coronary arteriography and even when "blacks have coronary disease of the same severity, blacks are less likely to undergo coronary bypass surgery". This report also noted that the differences found in the mortality rates of white and blacks were due to a lack of adequate insurance that reduces access to appropriate medical care, poor nutrition, inadequate housing and living conditions, stressful work environments, poor support systems and the lack of adequate transportation systems to get to needed services."

Finally while the number of low birth weight children are due to differences in individual and environmental factors, some is also attributed to innovations in technology which improved access to care. According to McCormick more low birth weight

children are surviving today than before because there are more intensive care units available in hospitals to provide the technical care needed for **survival**.¹⁵

The range of barriers that minorities encounter in obtaining medical care and the erosion in access for these ethnic groups this paper uses data from the 1987 National Medical Expenditures Study (NMES) to examine how Whites, blacks, Asians, Puerto Ricans, Cubans and Mexican Americans fared on correlates of access to care. Two issues will be explored in this analysis: the notion that there is no statistically difference in the overall use of services among ethnic minorities and the hypothesis that there is no statistically difference in the use of services race and ethnicity when one controls for health status.

Data and Methods

The data used in this paper are from the household component of the 1987 National Medical Expenditure Survey (**NMES**).¹⁶ NMES, sponsored by the U.S. Department of Health and Human Services, continues a series of national health care expenditure surveys, most recently the 1980 National Medical Care Utilization and Expenditure Survey and the 1977 National Medical Care Expenditure Survey. Like these earlier **surveys**, NMES uses a national probability sample of the U.S. civilian noninstitutionalized population. The survey is designed to provide nationally representative estimates of health care use and expenditures for the U.S. civilian noninstitutionalized

population. The findings reported by the sampled respondent were weighted to reflect their representation of the U.S. population as reflected in the March 1987 Current Population Survey. These weights account the differences that occur in the probability of selecting an individual from the population. A national probability sample of approximately 15,000 households was selected for this study, producing a total of 36,400 respondents.

The survey was fielded in four rounds with interviews conducted at approximately 4 month intervals to collect information on insurance coverage, use of services, expenditures and sources of payment for the period of January 1 to December 31, 1987. A fifth short telephone **interview** obtained tax filing and other supplementary information. The cumulative response rate across the five rounds of data collection was 79.7 percent.

The analyses in this paper are based on a data collected using three questionnaires administered in the Household Survey: a health status questionnaire, a questionnaire concerning individuals' usual source of care and an extensive questionnaire on sociodemographic, medical and insurance characteristics during calendar year 1987. Questions regarding the usual source of care (whether the respondent had a usual source, the type of source and waiting time at the source) were administered in a special supplement to the household survey.

Each person was classified according to the total 1987 income of his or her family (family membership as of the fourth interview). Personal **income from all family members was summed**

to create family level income. Within a household, all individuals related by blood, marriage, adoption, or foster **care** status are considered a family. Poverty status is the **ratio of** family income to the poverty levels published by the Bureau of the Census, controlling for family size and age of head of family. Persons reporting negative income were included in the under 100 percent poverty category. The poverty line for a single individual was \$5,778 in 1987, while it was \$11,611 for a family of 4 and \$23,105 for a family of 9 **persons.**¹⁷

Classification by ethnic/racial background was based on information reported for each household member. Respondents were asked if their racial background were best described as American Indian; Alaska Native; Asian or Pacific Islander; black; white; or other. They were also asked if their main national origin or ancestry was among the following Hispanic subpopulations, regardless of racial background: Puerto Rican; Cuban; Mexican; **Mexicano;** Mexican American or Chicano; Other Latin American or Other Hispanic. The categories of white and black used in this paper were formed by taking only those whites and blacks that were also not Hispanic and placing them into their respective groups. While data is available on the Hispanic subpopulation the other ethnic groups (whites, blacks, Asians) cannot be broken down into subpopulations.

The insurance data presented in this report was based on data collected in the last round of the of the survey. Questions were asked to determine whether a person was covered on the

interview date by Medicare, Medicaid, other public assistance (in 1987 only) that pays for medical care, CHAMPUS/CHAMPVA, or private health insurance. Persons without coverage from any of these sources during this round were defined as uninsured.

Population density and related characteristics in the area of residence for each household were determined from household location in one of the geographic sampling units established for the NMES survey. These sampling units correspond to the U.S. Department of Agriculture's urban-rural continuum **typology** as applied by the U.S. Office of Management and Budget in 1983 and **1988**.¹⁸ The urban-rural continuum distinguishes metropolitan counties by size, and non metropolitan counties by degrees of urbanization and adjacency to metro areas. In this analysis the urban-rural continuum classification is collapsed as follows: "Central metro counties"- are counties in metropolitan areas with a population of 1 million or more residents; **"Other metro county"** are counties in metropolitan areas with a population of less than 1 million people; **"Urbanized non metro counties"** are non metro counties with a population of 20,000 or more residents and **"rural non metro county"** -are non metro counties with less than 20,000 residents.

Measures of the use of services were based on the reports provided by the respondents during each round (parents provided the data for their children). Ambulatory visits were any visits to a physician that did not result in a hospital admission or an overnight stay in the hospital.

Two tests of statistical significance were used to determine whether the data reported in these analyses were statistically significant. The first statistic used was the standard error of a percent. The standard error represents the difference between the reported results and what the results would have been if a census of the total population was taken. Percents displayed in tables with a relative standard error of more than 30 percent are noted in the tables with an asterisk. This indicates that the actual percent listed may be at least 30 percent higher or lower than what is listed in the table. T tests (Students t distribution) were used in determining the statistical significance of two percents or means being compared in the analysis. Unless otherwise noted, only statistically significant differences (at the **.05** level or better) between estimates are discussed in the text. Listed in Appendix A are formulas that allow for the independent calculations of these test statistics.

Results

Sociodemographic characteristics

Table 1 displays selected socio-demographic characteristics that are correlated with access to care (health status, age, income, health insurance, **education** and residence). Health status and its correlate age reflects the need for different types of medical **care**.¹⁸ Individuals in poor health are believed to require more medical services than others. Living in poverty or

a lacking insurance often limits the range of choices concerning where and when a patient can go to receive medical **services.**²⁰⁻²¹ Because of their lack of knowledge concerning how to negotiate the system, individuals with lower levels of education are less likely to avail themselves of medical services.²⁰ Finally where a person lives (inner city, rural) can pose as a barrier to access because of the limited availability of providers or variations in the reimbursement of public health insurance by **region.**^{9,22}

[INSERT TABLE 1 ABOUT HERE]

As reported in table 1, whites were more likely to have a chronic condition while blacks were more likely to be in poor health and have a greater number of disability days. Nearly 44 percent of the whites reported having at least one chronic condition, compared to 37.3 percent of the blacks, 29.2 percent of the Hispanics and 26.9 percent of the Asians. During this same year 23.4 percent of blacks, 14.6 of the Asians and 15.7 percent of the whites were in fair or health. Blacks also reported an average of 15.5 bed disability days, while whites and Hispanics reported 10.8 and 10.7 bed disability days respectively.

In 1987 there were 31.5 million Americans who lived in poverty and 33.6 million Americans who lacked insurance in the last quarter of the year. Close to 9 percent (8.8 percent) of the whites lived in poverty in 1987. A third (32.8 percent) of the blacks and 28.1 percent of the Hispanic lived in poverty in 1987.

Slightly over 11 percent of American whites were uninsured, compared to 21 percent of the blacks and 32 percent of the Hispanics.

While Hispanics were shown to be worse off than whites on correlates of care, aggregating Hispanics though mask some of the differences among the Hispanic subpopulations. In 1987 a Mexican American was twice as likely as a Cuban American to live in poverty and almost three times as likely to be uninsured. Almost a third of the Mexican Americans (31.9 percent) were living in poverty in 1987, while only 17.4 percent of the Cubans lived in poverty. About two out of every five of the Mexican Americans (38.6 percent) were uninsured, compared to 14.5 percent of the Cubans.

Like the Cuban Americans, Asian Americans as a whole fared as well as whites on measures of income and insurance. While there was some variation in the percent of poor or uninsured Whites, Asians and Cubans, none of the variations were statistically significant. In 1987, 11.3 percent of the whites were uninsured, 13.6 percent of the Asians and 14.5 percent of the Cubans were uninsured. At the same time 8.8 percent of the whites lived in poverty, compared to 15.7 percent of the Asians and 17.4 percent of the Cubans.

As in the case of other correlates of access, race and ethnicity were also related to difference in education and place of residence. Fourteen percent of the adult white population lived in families where the highest wage earner had finished less

than 12 years of schooling as of 1987, compared to 27.4 percent of the blacks and 45 percent of the Hispanics. Slightly over half of the Mexican Americans (51.1 percent) lived in families where the highest wage earner was not a High School graduate, compared to 37 percent of the Puerto Ricans and 18.7 percent of the Cubans.

About one quarter of the U.S. population (59.7 million) lived in the largest cities of the U.S and 15 percent (35.9 million) lived in counties that had less than 20,000 people (rural areas). Non-whites were more likely than **whites** to dwell in these large urban cities, while Asian, Cuban and Puerto Rican Americans were under represented in the rural areas. Close to 60 percent of the Mexican and Asian Americans lived in large cities, along with 36.4 percent of the blacks, 39.1 percent of the Mexicans Americans and 77.1 percent of the Cuban Americans.

Blacks and Cubans were disproportionately concentrated in the south, while Asians and Mexicans were more likely to be found in the south and west. In 1987 about sixty percent (59.2 percent) of the black Americans and 68.5 percent of the Cuban American lived in the south. During the same year 48.1 percent of the Mexicans and 46.9 percent of the Asians lived in the west.

Usual Source of Medical Care

[INSERT TABLE 2 about here]

In 1987, 81.2 percent of the U.S. population had a usual source of care, leaving 18.8 percent (44.4 million) without a usual source of care (table 2). Racial background and ethnicity were clearly associated with differences in both the likelihood of having a usual source of care and its site. Seventeen percent of the whites were without a usual source of care, compared to 23 percent of the blacks, 30 percent of the Mexicans and 32.1 percent of the Asians.

The availability of a usual source of care and the type of source often makes a difference in the use of medical **services.**²³ Users of hospital outpatient clinics or emergency rooms are less likely to have a regular provider for their needs, thus decreasing the likelihood of having some continuity of care.²⁴ Aside from the type of usual source of care the convenience of services (as measures in traveling time to and waiting time at the usual source of care) is important to consider in examining access to **care.**^{13,23-24}

While only 5 percent of the U.S. population (11.9 million) regularly used an outpatient department or emergency room for their needs, 19.6 percent of the Puerto Ricans, 15.8 percent of the blacks and 18.4 percent of the Mexicans reported the Hospital outpatient department or emergency room as their usual source of care during 1987. About 8 out of every 10 individuals in the U.S. population (84.4 percent) had a regular doctor during 1987. However, 72.5 percent of the blacks and 62.4 percent of the Puerto Ricans had a regular physician.

Race and ethnicity were not only correlated with having a usual source of care or regular provider but also with the convenience **of services**. Eight percent of the U.S. population had to wait more than a hour at their usual source of care before being seen by a provider. Over **20** percent of the Cubans had to wait more than one hour to be seen, while slightly over 21 percent of the Puerto ricans and Mexicans and 18.7 percent of the blacks had to wait more than an hour to be seen by their provider to be seen.

[INSERT TABLE 3 ABOUT HERE]

Ambulatory Utilization

While the preceding tables represent correlates of access to care, table 3 displays measures of contact with the system. As of 1987 disparities remained in access to care regardless or not whether one controlled for health status. In 1987, 70.6 percent of the U.S. population visited a physician in an ambulatory care setting. Only 54.6 of the Asians and 56.5 percent of the Mexicans saw a physician during that year while 73.5 percent of the whites and 63 percent of the blacks saw a physician during 1987.

Eighty three percent of **all** Americans who were in fair or poor health saw a physician during 1987. This included 86.5 percent of the whites, 78.3 percent of the blacks and 65 percent of the Asian who were in fair or poor health. However, while most of the Americans in fair or -poor health were more likely than others

to see a physicians, this wasn't the case for the sick who lacked insurance. While 86 percent of the insured U.S. population in fair or poor health saw a physician during 1987, only 62.9 percent of the uninsured saw a physician. Slightly more than half of the sick uninsured Mexicans (50.7 percent) saw a physician during 1987, compared to 67.8 percent of the whites.

As in the case of the probability of a seeing a physician, race and ethnicity was also correlated with differences in the volume of ambulatory care reported in 1987. The U.S. population who visited a physician for ambulatory care made an average of 5.2 visits during 1987. Blacks and Hispanic overall made about the same number of visits to a physicians (4.9 and **5.1**), while whites and Asians made fewer than the average number of visits (4.1 and 4.3). As in other circumstances, there were differences among the Hispanic subpopulation in the range of ambulatory visits. Puerto Ricans reported 4.7 visits to a physician during 1987 while Mexicans reported 3.8 and Cubans reported 4.1 visits. Controlling for health status increased the number of visits overall, except for the uninsured in fair or poor health. The insured U.S. population in fair or poor health made over 8 **visits** to a physician during 1987, while the uninsured made 4.9 visits.

Discussion

As of 1987 there continued to be a gap in access to care for ethnic minorities. There was also a decrease in the overall use of services by minorities since 1982. While 80 percent of the

black Americans saw a physician in 1982 in 1987 only 63 percent of the blacks made at least ambulatory visit. Puerto Ricans reported more were more likely than other groups to be in fair or poor health. Blacks and Mexicans the most likely to be poor or uninsured, while Whites, Asians and Cubans were least likely to be poor or uninsured. Blacks, Puerto Ricans and Mexicans were dependent on emergency rooms, and hospital outpatient department for the care, while blacks and all Hispanics had to wait longer than whites and Asians at their **usual** source of care to be seen by a physician. Differences also remained in the use of ambulatory care by race and ethnicity. Blacks, **puerto** Ricans and Mexicans were less likely than Cubans, Whites and Asians to see a physician, even after one controls for health status. On the other hand, blacks and Puerto Ricans fared better than others in the number of visits to a physician. Regardless of race though the sick uninsured were less likely than the insured to see a physician and made fewer visits to a physician during 1987.

It must also be noted that while these findings show Asians to be better off than other ethnic groups it may be possible that by aggregating the Asians one masks the heterogeneity of this population. A study of the diversity of the Asian population reported that while only 13.1 percent of all Asian **Americans** lived in poverty in 1980 the poverty rate was as low as 4.2 and 6.2 percent for Japanese and Filipino Americans and as high as 27.5 and 35.1 percent for Samoan and Vietnamese Americans respectively."

While these findings reveal consistent disparities between ethnic minorities in access to medical care, one needs to keep in mind the limitations of the findings that may influence the final interpretation of the issue of access to care. This analysis used descriptive statistics to examine differences in access to medical care. This is one of the most commonly used methods used to examine access. The other most commonly used method is a multivariate regression model of the use of services. While the multivariate model in an of itself does not negate the validity of descriptive findings, it allows the researcher an opportunity to control for a wide range of factors (barriers to care, various health status measures) at the same time that may influence access to care. It also allows one to determine the relative contribution of a variety of factors to the issue of access to care, whereas the descriptive analyses just reveals whether there are disparities among groups of interest.

Aside from the lack of reliance on the use a multivariate model to examine access another issue that may influence the interpretation of the results is the limitations of the sampling frame. This study was based on data collected in a multi-stage probability survey. Unlike most surveys this method of data collection does not assume simple random sampling. Ordinarily variance estimates which do not account for the sample design may seriously underestimate the true variance. To correct for this problem a Taylor series linearization program was used to generate the statistics needed to test the significance of the

findings in this paper.

conclusions

These findings suggest that while there are still barriers to entering the system (age, education, income, insurance, usual source of care) however, once contact is made the access picture improves for those who are insured. The finding that the uninsured who are sick are less likely to see a physician and make fewer ambulatory visits to a physician suggests that financial barriers continue to pose a problem in achieving equity of access to medical care. These patterns would tend to reaffirm the importance of financing mechanisms in ensuring access to medical care.

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Table 1. Sociodemographic Characteristics of U.S. Population by Race/Ethnicity, 1987.

Population Characteristics	Total Population	Race/Ethnicity						
		White ^a	Black ^b	All hispanics	Puerto Rican	Mexican	Cuban	Asian
Percent of population	235,527	76.9	11.9	7.9	0.9	5.0	0.3	1.9
Self reported Health Status								
Fair/Poor Health	40,275	15.7	23.4	20.9	25.3	20.8	16.7	14.6
Chronic condition	97,508	43.7	37.3	29.2	35.4	27.0	33.7	26.9
Mean Bed Disability days ^c	71,629	10.8	15.5	10.7	13.6	10.2	8.8	5.9
Mean Work loss disability days ^c	46,992	7.0	9.0	7.1	6.4	6.9	5.5	5.6
Age in Years								
Under 18	60,334	23.4	32.8	34.4	28.7	37.1	19.2	26.4
18 to 54	124,791	53.1	51.3	55.0	62.1	53.5	56.2	55.4
55 to 64	22,107	10.1	7.6	6.2	6.3	5.4	15.4	9.9
65 and Older	28,294	13.5	8.4	4.4	2.9	4.0	9.1	a.3
Income ^d								
Poor	31,496	8.8	32.8	28.1	22.4	31.9	17.4	15.7
Low Income	43,399	16.5	24.1	27.5	29.0	28.6	1a.1	13.9
Middle/High Income	160,632	74.7	43.1	44.5	48.6	39.5	64.5	70.4
Health Insurance ^e								
Any Private	176,206	81.8	50.5	48.9	47.1	44.6	68.1	72.4
Only Public	25,260	7.0	28.5	19.0	34.6	16.6	17.4	14.1
Uninsured	33,635	11.3	21.0	32.0	1a.3	38.6	14.5	13.6
Education ^f								
Under 12 years	33,285	14.3	27.4	45.0	37.0	51.1	1a.7	11.8
12 years	68,253	38.0	41.2	28.8	40.9	28.0	26.6	22.1
More than 12 years	80,855	47.6	31.4	26.2	22.1	20.9	54.7	66.1
Size of Residence								
Core metro county	59,664	20.8	36.4	44.4	59.8	39.1	77.1	57.4
Other metro county	118,304	53.6	40.3	37.1	37.6	40.4	18.9	36.0
Urbanized metro county	21,685	9.2	10.4	5.5	1.8	6.6	1.0	2.2
Rural nonmetro county	35,873	16.2	12.9	13.0	0.8	13.8	3.0	4.5
Region of Residence								
Northeast	46,150	20.8	15.9	14.6	68.8	1.6	17.0	1a.1
Midwest	60,031	28.8	17.5	9.6	13.8	9.3	9.7	14.3
South	82,881	31.6	59.2	36.2	9.6	41.0	68.5	20.7
West	46,465	18.8	7.5	39.7	7.8	48.1	4.8	46.9

^a - Non-Hispanic

^b For those with at least one bed disability day.

^c For those with at least one work loss disability day.

^d - Poor- Under 1.0 Poverty. Low Income= 1.0-1.99 Poverty; Middle Income= 2.0-2.99 Poverty; High Income=>2.99 Poverty.

^e - Insurance coverage during the last quarter of 1987.

^f - Education level of adults-Highest wage earned

Source: Agency for Health care Policy and Research: National Medical Expenditure, Household Survey (1987).

Table 2. Usual source of care characteristics by race/ethnicity, 1967

Usual Source Characteristics	Total Population	Race/Ethnicity						
		White ^a	Black ¹	All Hispanics	Puerto Rican	Mexican	Cuban	Asian
Percent of population	235,527	76.8	11.9	7.9	0.9	5.0	0.3	1.9
Percent with a Usual source	190,945	83.0	77.1	72.1	81.0	60.7	78.0	67.9
Site of Care								
Physicians' Office/ Clinic	161,356	89.5	69.6	73.7	61.7	75.0	80.2	75.8
hospital Outpatient Department/ Emergency Rm	11,917	4.4	15.8	9.9	18.8	6.7	12.6	14.5
Health/ Walk-in Center Other Source ^b	15,122	6.1	14.5	16.4	19.6	18.4	7.2	9.8
Have a regular doctor at usual source	160,307	87.6	72.5	72.5	62.4	73.2	83.0	75.6
Convenience of Service								
Travel time to Source								
Under 30 mins	157,830	85.4	78.8	81.5	85.7	82.0	68.2	81.4
30-59 minutes	24,744	12.5	17.0	14.4	11.5	14.7	29.4	14.5
More than 59 minutes	4,720	2.2	4.0	4.2	2.7	3.3	2.0	3.1
Waiting time at source								
Under 30 minutes	109,183	66.0	54.2	49.0	50.3	49.7	41.2	56.7
30-59 minutes	43,268	24.4	27.2	28.5	28.5	28.8	28.3	29.3
More than 59 minutes	20,319	9.6	18.7	22.4	21.3	21.5	30.5	14.4

¹ - Non-Hispanic^a - Company industrial clinic, school clinic, walk-in center, health center, patient's home and or an Indian health Health Service Facility.

Source: Agency for Health Care Policy and research: National Medical Expenditure, Household Survey (1987).

Table 3. Ambulatory Physician Contacts¹ by Selected Characteristics, 1967.

Population Characteristics	All Races	White ^b	Black ^c	All Hispanics	Puerto Rican	Mexican	Cuban	Asian
Percent who saw a physician								
Total	70.6	73.5	63.0	59.0	64.2	56.5	63.6	54.6
in fair or poor perceived health:								
total	83.0	86.5	70.3	69.6	72.0	65.2	70.6 ^d	65.0
poor	80.4	84.7	79.6	68.5	67.5	66.1	100.0 ^d	77.9 ^d
non-poor	83.7	86.8	77.2	70.3	74.5	64.7	67.4 ^d	63.0
any private insurance								
insurance	86.4	88.4	80.2	74.0	81.2	68.8	64.2 ^d	69.7
public insurance								
only	86.0	89.1	84.2	80.2	69.7	62.5	75.2 ^d	76.1
uninsured	62.9	67.0	61.2	53.6	57.7	50.7	100.0 ^d	22.4 ^d
Mean ambulatory visits to a physician¹								
Total	5.2	4.1	4.9	5.1	4.7	3.0	4.1	4.3
In fair or poor perceived health:								
total	8.1	6.3	8.0	8.3	7.4	5.5	5.3 ^d	6.9
poor	0.3	5.3	8.4	8.4	7.9	4.5	5.5 ^d	4.7 ^d
non-poor	8.1	6.7	7.8	8.3	7.1	6.1	5.2 ^d	8.3
any Private insurance								
insurance	0.3	6.3	8.2	0.4	7.7	6.0	3.9 ^d	4.2
public insurance								
only	8.9	7.5	8.9	9.6	7.4	6.2	7.6 ^d	5.6
uninsured	4.9	4.2	4.7	5.4	6.2	4.1	1.0 ^d	2.6 ^d

¹ -excludes phone visits/ consultations.

^b -Non Hispanic

^c -For those with at least one visit to a physician during 1967.

^d Standard error is greater than or equal to 0.30.

Source: Agency for Health Care Policy and Research: National Medical Expenditure, Household Survey (1967).

APPENDIX A

Standard Errors

This appendix discusses the computations of the standard error of a percent and the appropriate **t** tests needed for the independent calculation of the significance of findings not discussed in the body of this paper. The standard errors listed in the appendix below were approximated, by interpolation where necessary, using a **curve** smoothing procedure developed by Cohen (1979). The statistical tests in this paper, however, are based on direct estimates of standard errors using the Taylor series linearization method.

Direct standard error estimates. When the statistic of interest is expressed as a percent of the number of persons, direct estimates of standard errors have been derived for ease of calculation. For the estimated percent of the U.S. population by selected characteristics, approximate standard errors expressed as a percent are presented in Table I.

- **Example** - The estimate of 83.0 percent of the Whites in the U.S who have a usual source of care is based on a population total of 180,884 (Table 2- 235,527 * **.830**). This estimate has a standard error of approximately 0.3 percent (Table I). The estimate of 77.0 percent of the Blacks in the U.S who have a usual source of care is based on a population total of 26,028 (Table 2- 235,527 * **.119**). This estimate has a standard error of approximately 1.1 percent (Table I).

Table I. Approximate direct standard errors

Persons in the base of the percent (in thousands)	Estimated percent						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
500	2.4	3.7	5.1	6.7	7.7	8.3	8.4
1,000	1.7	2.6	3.6	4.8	5.5	5.8	6.0
2,500	1.1	1.6	2.3	3.0	3.5	3.7	3.8
5,000	0.7	1.2	1.6	2.1	2.4	2.6	2.7
10,000	0.5	0.8	1.1	1.5	1.7	1.8	1.9
25,000	0.3	0.5	0.7	1.0	1.1	1.2	1.2
50,000	0.2	0.4	0.5	0.7	0.8	0.8	0.8
100,000	0.2	0.3	0.4	0.5	0.5	0.6	0.6
200,000	0.1	0.2	0.3	0.3	0.4	0.4	0.4
240,000	0.1	0.2	0.2	0.3	0.4	0.4	0.4

Using the standard errors obtained from the above table one determine the statistical **significance** of two percents or means using the following formula:

Using the standard errors obtained from the above table one determine the statistical significance of two percents or means using the following formula:

$$T = \frac{(\bar{X}_1 - \bar{X}_2)}{(\bar{x}_1 - \bar{x}_2)}$$

where \bar{X}_i = the mean or percent,
 \bar{x}_i = standard error of the mean or percent.

Thus if one wished to determine whether white were more likely than blacks to have a usual source of care, one could plug the results from the previous example into the equation listed above to obtain the T statistic*:

$$T = \frac{(77.1 - 83.0)}{(0.3 - 1.1)}$$

$$T = 7.375$$

 * Note: one can derive the populations totals needed to for the standard error of the means using the percents in the top panel of table 3 since the number of ambulatory visits are based on the groups who made at least one visit during year (that is the subset that is the same as the percent who saw a physician during a given year).