The University of Chicago
Graduate School of Business
Center for Health Administration Studies (CHAS)
1101 East 58th Street, Walker 111
Chicago, Illinois 60637
(312) 702-7753

WORKSHOP IN HEALTH ADMINISTRATION STUDIES

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LLEWELLYN CORNELIUS, M.A.
Research Project Assistant
Center for Health Administration Studies

"An Analysis of the Delivery of Medical Care to Minorities and the Poor"

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"An Analysis of the Delivery of Medical Care to Minorites and the Poor"

by

Llewellyn Cornelius,M.A.

Center for Health Administration Studies
University of Chicago
1101 E. 58th Street,
Chicago, Il.   60615

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Advances in the organization and financing of medical care in the twentieth century have ensured access to medical care for medically disadvantaged groups such as minorities and the poor. However, with these advances in social policy also came the need to evaluate the quality and the cost of care provided to these groups.

Current research on the health of minorities and the poor reports that in spite of the increased public spending on programs for the aged, disabled and the poor, minorities and the poor are still sicker than whites and the nonpoor (USDHHS 1985a; USDHHS 1985b; USDHHS 1986). Minorities are more likely than whites to have communicable diseases, dental problems and mental illness. They are also more likely than whites to die from cancer, heart disease, stroke, infant mortality, diabetes and chemical dependency (Fielding 1973; USDHHS 1985a, 64-68). The poor are more likely than the nonpoor to see themselves as being in fair or poor health, to have speech, visual and motoric impairments and to have chronic conditions (Freeman, et al., 1987, 11; National Center for Health Statistics 1981; Newacheck, et al., 1980).

Given that there continues to be a gap in the health of minorities and the poor, it is important for one to understand what accounts for the differences between these groups. While other studies on this topic focus on the importance of selected individual elements in the delivery of care for minorities and the poor, this study will focus on the determinants (such as the patients' source of care or number of visits to a physician) of disparities in the outcome of medical care for minorities and the poor.

METHODS

Data collected for the evaluation of the Community Hospital Program (CHP) conducted by the Center for Health Administration Studies (CHAS) will be used to examine the relative importance of these factors on the outcome of care. The evaluation of the Community Hospital Program conducted by the Center for Health Administration Studies focused on determining whether private sector sponsored health initiatives such as this program improved access to medical care in the communities that they served (Aday et al., 1985, 14).

Twelve sites were selected for this evaluation from the 53 that were originally funded (One of the twelve sites dropped out of the project, thus the final number of sites evaluated was eleven). Surveys of individuals living in the communities surrounding the study sites (area samples) were conducted at both a baseline period (1978-79, n=8330) and a follow-up period (1980-81, n=5737) to determine whether the medical utilization patterns of residents in these communities improved following the implementation of this program. For those sites that were seeing patients during the baseline period, samples of patients (list samples) were drawn to be interviewed (n= 2662). This process was repeated during the follow-up period (n= 3636) (Aday et al., 1985, 15,60). Personal, face-to-face interviews were the primary method of data collection for this evaluation. One randomly selected adult and one randomly selected child were selected for these interviews (Aday, Andersen and Fleming 1984). The survey questionnaire that was used for this evaluation was based on the 1976 national access study conducted by CHAS and the National Opinion Research Center (NORC)) and can be found in several published sources (Aday, Andersen and Fleming 1980; Aday et al., 1985). A subset of the data collected from the follow-up study

based on the CHP area sample evaluation will be used for this study. This subset consists of respondents during the follow-up period (Time 2) period who encountered an episode of illness[1] (n=1314).

Although there are a variety of models available for measuring access to medical care (Davis and Reynolds 1975; Hulka 1978; Lewis, 1976; Penchansky and Thomas 1981; Shortell et al., 1977; Sloan and Bentkover 1979; Simon et al., 1979; Sawyer et al., 1982), only a few of these models are comprehensive in their analysis of the medical delivery system (Wyszewianski and Donabedian 1981; Aday, Andersen and Fleming 1980; Yergan et al., 1981). The Behavioral Model of Access developed by Ronald Andersen and Lu Ann Aday (Appendix B) and Avedis Donabedian's Model for Assessing the Quality of Medical Care (Appendix C) both suggest ways by which researchers can conduct a comprehensive analysis of access to medical care.

This study will rely on an adaptation (Appendix A) of the structure, process and outcome model developed by Avedis Donadedian (Appendix B) and the Behavioral Modle of Access to Medical Care developed by Ronald Andersen and Lu Ann Aday (Appendix C). As indicated in appendix A this adaptation of the structure, process, outcome model suggests that not only are selected factors in the structure and process of medical delivery important in determining the outcome of care, but individuals predisposing characteristics (such as health status) as well as variations across region and community of residence are also important factors to condsider in this process.

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[1]This group is comprised of individuals who stated they had an illness or injury that forced them to stay in bed or to cut down on their ususal activities for 3 or more days in a row (See also Aday, et al. 1985, 186-87, 280-81).

The analyses which follow will attempt to determine whether potential disparities in the outcome of medical care for minorities and the poor can be adequately explained by systematically examining the environments in which the patients' reside, selected characteristics of the individual (health status, age and sex), and the structure and process of medical care delivery. It expected that by examining these components both descriptively and within the context of a multivariate regression model one will be able to determine the relative contribution of a variety of factors to the disparity found between minorities and whites as well as the poor and nonpoor.

RESULTS

Health Status and Outcome

Table 1 displays selected measures of health status for minorities and the poor. One finds in table[2] 1 that while minorities under 65 were more likely than whites to have a chronic condition (which reflect a illness of longer duration), they were less likely to report having an acute condition during this episode. Furthermore, minorities reported having about as many disability days and expressing the same degree of worry about their condition as whites.

However in spite of the fact that minorities report themselves to be as healthy as whites on self report measures (disability days and worry), the evaluation of the severity of their condition using physician norms reveal a different story. According to the physician

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[2]It should be noted that the percentages and means listed in table 1 thru 4 were of the tables were not adjusted using standard error estimates, standard error estimates. It should also be noted that the significance levels reported in these tables using the Chi-Square test and ANOVA are based on the unweighted cases. The test in each case was whether the difference between whites and minorities or between the different income groups was statistically significant.

TABLE 1

SELECTED MEASURES OF HEALTH STATUS BY RACE, INCOME.

	Percent with Acute Condition	Percent with Chronic Condition	Percent with Acute and Chronic	Mean Number of Disability Days[a]	Mean Number of Recommended Visits/ Condition	Percent who worried some/deal about Cond.
			Under 65			
Race:						
White	74*	24*	(3)*	17	2.39	76
Minority[b]	63*	36*	(1)	16	2.65	76
Poverty Level:						
< 1.0	71	27	(1)	20	2.22	79
1.0 - 1.5	66	32	(2)	18	2.09	81
> 1.5	73	25	(3)	16	2.04	74
TOTAL n	749	241	27	981	1067	854

[a] – for those with less than 365 total disability days during the year;
[b] – black and hispanic;() = fewer than 25 unweighted cases; * = p <.05.

norms measures, minorities were likely to have conditions that physicians believed required more visits to the doctor than whites. It is possible that minorities are in fact sicker than whites since it has been found that blacks are more likely to report they are in better health on self-report measures, when hospital discharge records, clinical examination and physician and hospital records report overall that they are sicker than whites (Andersen, Mullner, Cornelius, 1987).

Aside from listing the health of minorities and whites, table 1 also provides a listing of health indicators for episode of illness for patients who are poor and nonpoor. As the data in table 1 suggest, the poor and the near poor are sicker than the nonpoor. However, while it is true that the poor and the near poor are sicker than the nonpoor, the near poor is in fact sicker than the poor. While the poor (< 1.0

poverty level) reported having the largest average number of disability days of the three income groups, the near poor (between 1.0 and 1.5 poverty level) were more likely than either the poor or the nonpoor (> 1.5) to have a chronic condition or to express either some or a great deal of worry about their condition. This suggests that while the poor is worse off than the nonpoor, the near poor may in fact be worse off than the poor.

While table 1 and the tables which follow lists selected factors in the profile of care for minorities and the poor, the elderly were excluded from this portion of the data analysis. It was found in many cases the elderly minorities and the poor were similar to their younger counterparts. For example elderly minorities reported having more disability days (36 vs. 25) than whites. Using the poverty level income measure, one finds that while the poor reported having more disability days than the non poor (26), the near poor reported having the fewest number of disability days (16) of all three groups. It should be noted though that the accuracy of the results could vary both because of the smaller number of elderly individuals in this group (164) and because of the smaller numbers in a given sub group. For example for the total number of disability days there was responses from 9 elderly minority individuals.

Since it was noticed that the poor appeared to be sicker than the nonpoor, efforts will be made throughout this paper to see if poor minorities are worse off than poor whites. Table 2 lists the health characteristics of the episode sub-sample, controlling for both income and race. It is interesting to find that in some cases poor whites are even worse off than poor minorities.

TABLE 2

SELECTED MEASURES OF HEALTH STATUS BY RACE AND INCOME.

	Percent with Acute Condition	Percent with Chronic Condition	Percent with Acute and Chronic	Mean Number of Disability Days[a]	Mean Number of Recommended Visits/ Condition	Percent who worried some/deal about Cond.
Race and Income:						
White - Poverty Level						
< 1.0	75	23	(1)	25	2.56	79
1.0 - 1.5	68	30	(2)	15	2.57	81
> 1.5	74	23	(3)	16	2.33	74
Minority[b] -Poverty Level						
< 1.0	65	35	(1)	15	2.67	72
1.0 - 1.5	58	42	–	9	2.59	85
> 1.5	63	35	(3)	18	2.65	73
TOTAL n	749	241	27	981	1067	854

[a] = for those with less than 365 disability days per year; [b] = black and hispanic. () = fewer than 25 unweighted cases.

It is interesting to note that while minorities and the poor were sicker in some cases than whites and the nonpoor, poor whites appeared to be sicker than poor minorities. One sees in this case that while poor minorities were more likely than poor whites to have a chronic condition or to have conditions that experts believed warranted more visits to the doctor, poor whites reported more disability days than poor minorities and were more likely than poor minorities to express a great deal or some worry about their condition.

The data in table 2 not only reveals that there are some variations among poor minorities and whites on selected health status measures, it also reveals that there some variations between the near poor and the non poor.   In looking at the income measure, one finds that near poor

minorities were the most likely to have a chronic condition and to express either some or a great deal of worry about their condition. However, the near poor also reported the fewest number of disability days of all the sub groups. These findings suggest that there may not only be reporting differences between blacks and whites on selected measures of health status, but also between the poor, near poor, and the nonpoor.

While it was mentioned earlier that there were reporting differences in the health status of blacks and whites, there is also research that suggests that there are reporting differences across the income groups. Dutton notes that while upper income individuals were more likely than lower income individuals to report having acute conditions, the poor were more likely to report having serious conditions. She suggests that this may be because the affluent are more likely to report having mild conditions (Dutton 1980,34). This would suggest that while the poor may be just as likely as the rich to have acute conditions, they may be less likely to report that they have them. Like Dutton, Newacheck et al. (1980) found that the poor were not only more likely to report having some chronic illness than the non poor, they were also reported having a greater number of restricted and bed disability days associated with these illnesses. They believe that this was because the poor were more likely than the nonpoor to have activity limiting chronic conditions (Newacheck, et al. 1980). It appears then that some of the difference in health status of minorities and the poor may be masked by the accuracy of the reporting of health across these groups as well as how one measures poverty.

Given the likelihood that in some cases the poor and the near poor appeared to be sicker than the nonpoor and minorities sicker than

whites, is it likely that they are still in poor health as measured by indicators of the outcome of care? Tables 3 and 4 provides some information about whether there is any support support for this notion.

TABLE 3

PERCENT WHO WERE CURED OF THEIR MEDICAL CONDITION BY HEALTH STATUS AND RACE, INCOME.

	Overall	With Acute Condition	With Chronic Condition	With Acute and Chronic Conditions	With Some/Great Deal of Worry About Condition
			Under 65		
Race:					
White	67*	84**	19	(22)	65*
Minority[a]	52*	72**	18	–	46*
Poverty Level:					
< 1.0	60**	77*	18	–	56**
1.0 – 1.5	57**	73*	23	(43)	50**
> 1.5	67**	84*	18	(20)	64**
TOTAL n	611	558	47	6	512

[a] = black and hispanic. () = fewer than 25 unweighted cases;
* = p <.05; ** = p <.01.

Table 3 lists the likelihood that different racial and income groups are cured of their condition by selected measurements of health status for the episode sub-sample. Since there are only a small number of cases in the group containing both acute and chronic conditions (6) the discussions which follow will only focus on the other categories listed in the table. As indicated in table 3, minorities were less likely than whites to be cured of their condition. This is also true when one controls for the minorities and whites who have acute or chronic conditions or express either some or a great deal of worry about their condition.

Table 3 not only lists the likelihood that minorities and whites are cured of their condition, it also lists the likelihood that the poor and the nonpoor are cured of their condition. One finds that while both the near poor and the poor were less likely to be cured of their condition, the near near poor were slightly less likely than the poor to be cured of their condition.

When one also controls for selected measures of health status an interesting puzzle emerges. Controlling for the type of condition, the near poor with acute conditions were the least likely to be cured of their condition. On the other hand, the poor and the non poor with chronic condition were less likely than the near poor to be cured of their condition. Finally, one finds that controlling for those who express either some or a great deal of worry about their condition, the near poor were less likely than the poor or the nonpoor to be cured of their condition.

These findings on health status and outcome suggest that while minorities in some cases may not be sicker than whites on measures of health status, overall they are less likely to be cured of their condition. However one also finds some interesting deviations from his pattern when looking at measures of health status and outcome. It was discovered that in spite of the fact that minorities were more likely to have chronic conditions, they reported having fewer disability days than whites for these conditions and were about as likely as whites with chronic conditions to be cured of their condition. It was also discovered that the near poor were also less likely than the poor in some cases to be cured of their condition (even though the both the poor and the near poor are sicker than the nonpoor).

Given the nature of acute and chronic illness it comes as no surprise that one also finds that those with acute condition were more likely to report that they were cured of their condition. In fact cure is not usually seen as the appropriate outcome for chronic illness, rather it is important to see if their conditions are at least stabilized after the delivery of medical care. In this study we will emphasize the differences among the subgroups with a given level of illness.

It would appear then, based on these striking, consistent, findings that minorities, the poor and the near poor have poorer outcomes than whites and the non poor, even when one controls for either the severity of the condition or the amount of worry about his/her condition. However, before making any firm conclusions about this finding, it is important to also examine the extent to which these findings hold true for another outcome measure: the individuals degree of satisfaction with the quality of care of their recent medical visit.

Table 4 lists the extent to which minorities and the poor groups are totally satisfied with the quality of medical care delivered during their recent medical visit. As in the case of table 3, the discussion of the results in table 8 will not include an analysis of those with both acute and the chronic conditions since there are few cases present (16) in this group.

As indicated in table 4, minorities appeared less likely than whites to be totally satisfied with the quality of medical care. This is also true when one controls for those who had an acute or chronic condition as well as those who expressed either some or a great deal of worry about their condition. Table 4 also indicates that the poor were less likely than the near poor or nonpoor to be totally satisfied with the quality of care. This is also true when one control for the those with

TABLE 4

PERCENT WHO WERE TOTALLY SATISFIED WITH THE QUALITY OF CARE BY HEALTH
STATUS AND RACE, INCOME.

	Overall	With Acute Condition	With Chronic Condition	With Acute and Chronic Conditions	With Some/Great Deal of Worry About Condition
			Under 65		
Race:					
White	74	71	71	(88)	71
Minority[a]	67	69	59	(100)	65
Poverty Level:					
< 1.0	68*	60*	62	(100)	58
1.0 -1.5	74*	71*	68	(100)	67
> 1.5	75*	77*	70	(87)	(74)
TOTAL n	533	388	129	16	524

[b] = black and hispanic. () = fewer than 25 unweighted cases;
* = p <.05

acute or chronic conditions or those who express either some or a great
deal of worry about their condition.

Having noticed that there are differences in the probability that
minorities and whites as well as the poor, near poor and the nonpoor are
cured of their episode of illness condition or totally satisfied with
the quality of care, the question that remains is what accounts for
these differences? Is it because the these groups are already sick
enough that the delivery of medical care doesn't make that much of a
difference in their outcomes? Or is it possible that these differences
can be explained by other factors? In the next section of this study we
will explore some selected structure and process characterstics that are
be examined to determine if minorities and the poor receive a expected
to make a difference in the delivery of medical care. .

The Relation Between the Structure, Process and Outcome of Care

Having reaffirmed the research finding that minorities and the poor are sicker than whites and the nonpoor we wil proceed to determine to what extent are some of the factors in the delivery of medical care related to two meaures of the outcome of medical delivery: the degree of improvement in the patients' condition; and their degree of satisfaction with the quality of care. Table 5 displays the correlation between selected individual characteristics, structure factors, process factors and the outcome of care. As suggested earlier, minorities ($r= 0.10$, $p<.01$) and the poor ($r= .14$, $p<.01$) were less likely than whites and the nonpoor to show some improvement in their condition. they were also less likely than white and the nonpoor to be satisfied with the quality of care delivered at their recent medical visit. Likewise, it was also noted that those with more disability days or those whith chronic condition ($r = .49$, $p<.01$) were less likely than those with fewer disability days or with acute conditions to show some improvment in their condition.

While one finds that some of the findings discussed earlier were confirmed in this stage of the analysis, this table also highlights some other factors that are related to the outcome of care. As indicated in table 5, there is some relationship between the factors representing the process of medical delivery and the outcome of care. The more individuals visited a physician during the year for their episode of illness ($r= 0.23$, $p< 0.01$) or the longer they stayed in the hospital ($r= 0.28$, $p<.01$) the less likely they were to show some improvement in their condition. Furthermore, individuals who frequently visited a physician ($r = -.02$, $p< 0.01$) were more likely to be satisfied with the quality of care of their recent medical visit, whereas individuals who stayed

TABLE 5

CORRELATION BETWEEN THE STRUCTURE, PROCESS AND OUTCOME OF MEDICAL
DELIVERY

Structure and Process Factors	Status of Condition	Degree of Satisfaction with the Quality of Care[a]
Age	.24**	-.06**
Sex		
Male vs. Female	.06**	.02
Race:		
White vs. Minority	.10**	.02*
Income:		
> 1.5 Poverty Line	-.09**	.++**
1.0-1.5 Poverty Line	.03**	-.06**
< 1.0 Poverty Line	.08**	.05**
Health Status:		
Acute vs. Chronic	.49**	.08**
Total Disability Days	.23**	.02**
No/Hardly Any vs. Some/Great Worry	.18**	-.04**
Source of Care:		
Doctors Office	-.07**	-.11**
Hospital OPD	.01	.01
Hospital ER	.02*	.09**
Other Source	.06**	.03**
No Regular Source	.04**	.11**
At Least One Episode Doctor was:		
Regular Source Doctor	.++	-.06**
A Specialist	.09**	.02**
A Generalist	.04**	.+
Insurance		
Private Insurance	-.10**	-.01
Public Insurance	.12**	-.01
Public & Private Insurance	-.02**	-.04**
No Insurance	.05**	.09**
Utilization		
Visits to Physician	.23**	-.02**
Nights in Hospital	.28**	-.02**

[a]- of their recent medical visit; * = p < .05, ** = p , .01,
*** = p < .001, ++ pearson correlation <.01

longer in the hospital (r = .02, p<.01) less likely to be satisfied with the quality of their care.

In reviewing table 5 one notices that not only are several factors in the process of medical delivery related to the outcome of care, several factors in the structure of medical delivery are related as well. Individuals who go to a doctors' office for their care were more likely (r = -.07, p < 0.01) than individuals who go to hospital OPDs (r = .01), hospital ERs (r = .02), some other source of care (r = .06, p <.01) or no regular source of care (r = 0.04, p < 0.01 to show some improvement in their condition.

It is interesting to note that not only were individuals who went to different source of care less likely to show some improvement in their condition, individuals who went to different sources of care were also less likely to be satisfied with the quality of care. Individuals who go to doctors offices for their care were more likely (r = -.11, p <.01) than individuals who go to hospital OPDs (r = .01), hospital ERs (r = 0.09, p , .01), some other source of care (r=.03, p< .01) or no regular source of care (r = .11, p < .01) to be satisfied with the quality of medical care.

As indicated in table 5, not only is the type of regular source of care related to the outcome of care, but also the type of insurance. Those who have either private insurance (r = - 0.10, p<.01) or both private and public insurance (as in the case of the elderly) (r = -.12, p < 0.01) were more likely than those with other forms of insurance to show some improvement in their condition. However, individuals with no insurance were less likely (r = .09, p<.01) to be satisfied with the quality of care than other groups.

The Relative Contribution of Medical Care Delviery to the Outcome of
Care'

In the previous sections we examined some of the possible differences
in the structure, process and outcome of medical care delivery. It was
concluded that minorities and the poor were less likely than whites and
the nonpoor to be totally satisfied with the quality of care or to show
some improvement in their condition. It was also was discovered that
some of the structure and process characteristics of medical delivery
were correlated with the degree of improvement in ones' condition as
well as with the degree of satisfaction with the quality of medical
care. This led to the belief that differences in the type and amount of
medical care may account for some of the disparities in the outcome of
care for minorities and the poor.

In this section we will explore what accounts for these disparities
by examining the relative importance of predisposing characteristics
such as age and sex, characteristics of the need for medical care
(health status) and selected factors in the structure and process of
medical delivery in predicting the outcome of medical care. To examine
the relative importance of these factors on the outcome of care, a
multivariate regression model will be used.

Residuals analyses were conducted on a multivariate regression model
of the structure, process and outcome of care to determine the fit
between the assumptions of linear regression analysis and the model
itself. Based on the results of this residual analysis, it was proposed
that the dependent variables be transformed to correct for the
discrepancies found in the distribution of the residuals. The
transformed dependent variables (log to the base 10) are used in the
analyses which follow.

Status of the Patients Condition

By examining the possible differences between minorities and the poor in the structure, process and outcome of medical care the stage has been set to address the central issue of this analysis: does medical care really make a difference in the outcome of care for these groups? The upcoming tables attempt to address this issue in a variety of ways. Tables 6 and 7 examines the extent to which minorities and the poor experience some improvement in their condition. Tables 8 and 9 determines the extent to which these groups express some satisfaction with the quality of medical care.

As mentioned earlier, table 6 displays a variety of factors that have an impact of the outcome of care for minorities and whites.[3] While it was reported in a the descriptive analyses that minorites where less likely than whites to show an imporvement in their condition, the first column of this table indicates that when one controls for selected factors within an outside of the system of medical delivery, this is no longer true. In fact the data in this column suggest that health status, environment and the delivery of medical care were more important than race in determining how minorities and whites fare following the delivery of medical care.

One of the factors that proved to be more important than race in accounting for the disparities in the outcome of care was age. Older individuals were less likely (beta = .173, p < .001) than younger

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[3]Since the data used in this sample was weighted to adjust for differential sampling of the communities surrounding the CHP site, adjustments were made to account for the weighting of the data. The reported significance levels (t's) in this section of the analysis were adjusted down by the highest possible design effect of the variables involved in the analysis. Next, the unweighted n's were used to determine the appropriate degree of freedom for the significance tests used.

TABLE 6

IMPROVEMENT IN PATIENTS CONDITION (BETAS) BY RACE, HEALTH STATUS

	Overall	Acute Condition	Chronic Condition
Race:			
White vs. Minority	-.020	.010	-.130***
Age	.173***	.199***	.210***
Sex:			
Male vs. Female	.003	.016	-.058
Environment:			
Region			
East vs. West	-.007	.008	.027
East vs. North Central	.002	.013	-.011
East vs. South	.050***	.136***	-.065
Residence:			
Central City vs. Other SMSA	-.113***	-.138***	-.123**
Central City vs. Non Farm	-.038	-.046	-.127*
Central City vs. Farm	-.021	-.022	-.055
Health Status:			
Acute vs. Chronic Condition	.477***	–	–
Total Disability days (logged)	.022	.008	-.042
No/Hardly any vs. Some/Great Deal of Worry	.101***	.058***	.179***
Structure:			
Regular Source of care:			
Doctors Office vs. Hosp. OPD	.028*	.047**	-.008
Doctors Office vs. Hosp ER/ Other Source	.021	.075***	-.103*
Doctors Office vs. No Source	.068***	.098***	.026
1+ Episode Dr. Was:			
Regular Source Doctor	-.030*	-.001	-.127***
A Specialist	.033**	.008	.135*
A Generalist	.054*	.044*	.136*
Insurance:			
Private vs. Public	.022	.027	.074*
Private vs. Public & Private	-.106***	-.107***	-.179***
Private vs. No Insurance	.052***	.059***	.126***
Process:			
Visits to Physician (logged)	.141***	.166***	.090*
Nights in Hospital (logged)	-.013	.145***	-.163***
R^2	.407	.192	.171

[a]– Logged Dependent Variable- Original Categories were: 1 = Cured, 2= Much Improved 3 = Somewhat Improved, 4= Same, 5= Somewhat Worse, 5 = Considerably Worse;* = p < .05, ** = p , .01, *** = p < .001; - = not applicable;

individuals to show some improvement in their condition.

As reported in this table, not only was age seen as an important factor in this model, but so was the individuals' community and region of residence. Controlling for selected factors in the structure and process of medical delivery, individuals living in smaller metropolitan ares (for example small cities) were more likely (beta = -0.113, p < 0.001) than individuals living in central city SMSAs to show some improvement in their condition. Likewise, individuals living in the south (beta = .-050, p<.001) were less likely than those living in the east to show some improvement in their condition. This suggests that controlling for differences across race, it may be possible that differences in the care delivered in different localities may have some effect on the outcome of care for individuals.

Even though one notices that age, residence and region are important factors in this model, health status also plays a large role in the outcome of the patients' condition. Individuals with chronic conditions (beta = 0.477, p < 0.001) were less likely than individuals with acute conditions to show some improvement in their condition following the delivery of medical care. Likewise, individuals who expressed some or a great deal of worry about their condition were less likely (beta = .101, p<.001) than individuals who expressed hardly any or no worry about their condition to show some improvement in their condition following the delivery of medical care. Judging from the magnitude of the betas in this model, while demographic (other than race) and environmental factors were important in explaining the disparities in the degree of improvement in ones' condition, health status was even more important in explaining the disparities in the outcome of care between minorities and the poor.

While the severity of the patients' condition was by far the most important factor in this model one also sees though that factors in the structure of medical delivery have some bearing on the outcome of care. For example one notices that individuals who go to hospital OPDs (beta = .028), hospital ERs or some other source of care (beta = .068, p<.001) or to no regular source of care (beta = .030, p<.05) were all less likely than those who went to a doctor's office as their regular source of care to show some improvement in their condition. However, should also be aware of the fact that regardless of ones' regular source of care, individuals who stated that at least one of the doctors that cared for them during this episode was their regular source doctor (beta = -.030, p<.05 more likely than others to show some improvement in their condition. Even though one also sees that individuals who were cared for at least one generalist (beta = .054, p<.05) or specialist (beta = .033, p<.01) were less likely than other to show some improvement in their condition, it is also likely that they seek this extra care because they are sick.

The data in this column not only reveals that certain sources of care are more preferable to other sources, so are certain types of health insurance more beneficial for the individual. Controlling for the type of source of care, individuals with public insurance (beta =.022) or no insurance (beta = 0.052, p<.001) were less likely than those with private insurance to some improvement in their condition. However, individuals who had both private and public insurance more more likely (beta = - 0.106, p<.001) than those with only private insurance to show some improvement in their condition.

While factors representing the structure of medical delivery are important determinants of the disparities in the outcome of care, the

process of medical delivery also plays an important role in this assessment of the outcome of care. Controlling for demographic factors (age, sex, race) health status and the structure of medical delivery, individuals who made more visits (beta = .141, p<.001) were less likely than individuals who made fewer visits to the physician during the year to show some improvement in their condition.

Since one sees from examining the first column of table 6 that the severity of the patients' condition was the most important component of this model, is it possible that there other ways that the severity of the patients' condition can influence the outcome of care? Columns 2 and 3 of table 6 examines the impact of the severity of the patients' condition on the outcome of care according to two different scenarios: those with acute conditions and those with chronic conditions.

The data in these columns reveal that while there are similarities between the findings in these columns and column 1, there are some very interesting departures from the findings reported in column 1. For example, while one sees that the data concerning the importance of region, residence and the degree of worry about ones' condition is similar to the results reported in table 17, one also finds that there are differences between the races in the probability of being cured for ones' condition, according to the severity of the condition. For example, minorities with a chronic or both chronic and an acute condition were _more_ likely (beta = -.130, p<.001) than whites to show an improvement in their condition.

These differences in the outcome of care not only apply to race, but to sex as well. While males with acute conditions were about as likely (beta = .016) as females with acute conditions to show some improvement in their condition, females with chronic conditions were more likely

(beta = -.058) than males with chronic conditions to show some improvement in their condition.

The data in columns 2 and 3 not only reveal that there is a difference between whites and minorities and males and females depending upon the severity of ones' condition, it also reveals that there are differences in the relative impact of the structure and process of medical delivery according to the severity of ones condition. Those with acute conditions who go to hospital OPD (beta = .047, p<.05), hospital ERs or some other source (beta = .075, p<.001) or to no regular source of care (beta = .098, p<.001) were _less_ likely than those who went to a doctors office to show some improvement in their condition. However, those with chronic conditions who go to a hospital ER or some other source of care (beta = -.103 p<.05) were _more_ likely than those who went to a doctors office to show some improvement in their condition. However, regardless of the severity of ones condition, individuals who were cared for by their regular source doctor during this episode were more likely than other to show some improvement in their condition.

In spite of the differences found across the sources of care for those with acute or chronic conditions, one finds that health insurance has a similar amount of impact on the outcome of care for both groups. Individuals in both groups who had public insurance or no insurance was less likely than those who had private insurance to show some improvement in their condition. On the other hand individuals who had public and private insurance were more likely than those who had private insurance to show some improvement in their condition.

While one sees that there are some differences in the outcome of care according to the type of source of care and the severity of the patients' condition, one sees that there are also differences in the outcome of care according to selected factors in the process of medical delivery. The longer individuals with acute conditions stayed in the hospital, the less likely (beta = 0.145, p<.001) they were to show some improvement in their condition. However, the longer individuals with chronic conditions stayed in the hospital, the more likely (beta = -.163, p<.001) they were to show an improvement in their condition. Nevertheless, in both cases, the more times an individual visited their doctor, the less likely they were to show some improvement in their condition. These findings suggest that for chronic conditions it is more beneficial to be hospitalized for their condition than not to be. It also suggests that a longer hospitalizations are not as beneficial though for individuals with acute conditions.

Seeing that the structure, process and outcome regression model proved to be useful in explaining some of the results in the degree to which minorities and whites some some improvement in their condition, is it possible that this model is equally useful for examining the differences between the poor and the nonpoor? We will attempt to answer this question in the subsequent section of these analyses.

Table 7 displays the relative importance of a variety of factors on the degree of improvement in the patients' condition. This version of the structure, process,outcome model starts out by looking at the importance of income in the outcome of care. Once again one finds that while the descriptive analyses reported that the poor and the near poor were less likely than the nonpoor to show an improvement in their conditon, the frist column of table 7 indicates that this is not the case.

TABLE 7

IMPROVEMENT IN PATIENTS CONDITION (BETAS) BY INCOME, HEALTH STATUS

	Overall	Acute Condition	Chronic Condition
Income:			
Below 1.0 Poverty	.003	.055***	-.053
Between 1.0 and 1.5			
Poverty Level	.001	-.005	-.073*
Age	.175***	.199***	.217***
Sex			
Males vs. Female	.004	.018	-.055
Environment:			
Region			
East vs. West	-.008	.014	.004
East vs. North Central	.008	.014	.027
East vs. South	.051***	.138***	-.061
Residence			
Central City vs. Other SMSA	-.104***	-.140***	-.094*
Central City vs. Non Farm	-.027	-.052	-.053
Central City vs. Farm	-.018	-.022	-.046
Health Status:			
Acute vs. Chronic Condition	.475***	-	-
Total Disability days (logged)	-.022	.002	-.034
No/Hardly Any vs. Some/Great			
Deal of Worry	.101***	.056***	.199***
Structure:			
Source of Care			
Doctors Office vs. Hosp. OPD	.025*	.053***	-.027
Doctors Office vs. Hosp. ER/			
Other Source	.020	-.094*	
Doctors Office vs. No Source	.067***	.097***	.031
1+ Episode Dr. Was:			
Regular Source Doctor	-.029*	-.007	-.099**
A Specialist	.032***	.001	.095*
A Generalist	.054***	.047**	.109**
Insurance:			
Private vs. Public	.019	.025	.093*
Private vs. Public & Private	-.107***	-.110***	-.166***
Private vs. No Insurance	.050***	.051***	.130***
Process:			
Visits to Physician (logged)	.141***	.167***	.087**
Nights in Hospital (logged)	.013	.143**	-.158***
R^2	.407	.194	.166

*- Logged Dependent Variable- Original Categories were: 1= Cured,
2= Much Improved 3= Somewhat Improved, 4= Same, 5= Somewhat Worse,
5= Considerably Worse; - = not applicable;* = $p < .05$, ** = $p < .01$,
*** = $p < .001$.

In reviewing table 7 one notices that aside from the presence of income in this model, the findings are quite similar to the results reported in table 6 For individuals with acute conditions going to a hospital ER, some other source of care or to no regular source of care had a negative impact on their condition. Likewise the number of nights spent in the hospital had a negative impact on their condition. Conversely, for those with chronic conditions going to a hospital ER or some other source of care had a positive impact on their condition. Furthermore a longer length of stay had a positive impact on their condition.

While most of the findings are similar to the results reported in table 6, one finds that unlike what was found for minorities, there are significant differences in the outcome of care for the poor and the nonpoor. While the poor with an acute condition were less likely (beta = .055, p<.001) than the nonpoor with an acute condition to show some improvement in their condition, the poor (beta = -.053) and the near poor (beta = - 0.073, p< .05) with a chronic condition were both more likely than the non poor to show some improvement in their condition.

In summary, it was fascinating to find that while the severity of condition was the most important factor in the models reported above that there were difference in the impact of the severity of the condition on the outcome of care depending upon how it was measured. Likewise it was also fascinating to find that by separating the groups of individuals into those with acute and those with chronic conditions, one was able to discern significant differences in the impact of the structure and process of medical delivery on the outcome of care.

Knowing that there are a variety of factors in the delivery of medical care delivery that account for differences in the status of condition for the poor and the nonpoor as well minorities and whites, is it also likely that these same factors are also predictive of differences found between these groups in their degree of satisfaction with the quality of medical care? We will be able to address this question by looking at tables 8 and 9

Satisfaction with the Quality of Care

Table 8 provides an analysis of the degree to which minorities and whites express some satisfaction with the quality of their medical care. Before proceeding with the discussion of the findings listed in this table and in table 9 there are several distinctions that need to be made between these tables and the ones' which proceed it. First of all, while tables 6 and 7 are based on all the individuals who identified to an interviewer the condition that caused them the most worry, tables 8 and 9 only deals with a subset of this group. This group represents the group of individuals who reported that at least one of the doctors that cared for them was their regular source doctor. This subgroup represents only 600 individuals (in comparison to 1064 for the other group). This is because the variable of satisfaction with the quality of care is linked to the care received at ones' regular source of care.

The next set of distinctions that need to be discussed deals with the differences in the explanatory power of these two sets of models. One notices that variables in the model representing the structure, process and outcome of care explain a significantly smaller portion of the variance when satisfaction is used as the outcome variable then when the degree of improvement in ones' condition is used (for example, $R^2 =$

TABLE 8

SATISFACTION WITH THE QUALITY OF CARE (BETAS) BY RACE

	Stages of Regression Model[a]				
	Race	Environment	Health Status	Structure	Process
Race:					
White vs. Minority	.005	.010	.004	−.020	−.020
Age	−.078***	−.073***	.077***	−.135***	−.132***
Sex:					
Male vs. Female	.045	.038	.034	.019	.015
Environment:					
Region					
East vs. West		−.003	.009	.004	.005
East vs. North Central		.035	.030	.019	.022
East vs. South		−.041	−.051	−.055	−.053
Residence					
Central City vs. Other SMSA		−.013	−.010	−.022	−.027
Central City vs. Non−Farm		−.021	−.027**	−.087**	−.087***
Central City vs. Farm		−.041*	−.041	.047	−.047
Health Status:					
Acute vs. Chronic Condition			.020	.008	.021
Total Disability Days (logged)			.030	.009	.025
No/Hardly any vs. Some/Great Deal of Worry			.059**	.049**	.053**
Structure:					
Regular Source of Care:					
Doctors Office vs. Hospital OPD				.102*	.101*
Doctors Office vs. Hosp. ER/ Other Source				−.031	−.025
Doctors Office vs. No Source				−[c]	−[c]
1+ Episode Dr. Was:					
A Specialist				.174***	.180***
A Generalist				.213***	.215***
Insurance:					
Private vs. Public				−.002	−.001
Private vs. Public & Private				−.002	−.004
Private vs. No Insurance				.077***	.077***
Process:					
Visits to Physician (logged)					−.027
Nights in Hospital (logged)					−.027
R^2	.007	.012	.018	.077	.078

[a]− Universe of individuals for this table are those who were treated by their regular source doctor during this episode. [b]− Logged Dependent Variable− Original Categories were: 1 = Completely Satisfied; 2= Mostly Satisfied; 4 Moderately Satisfied, 4= Slightly Satisfied, 5= Not at all Satisfied; [c] betas are missing for this variable because the satisfaction question was only asked for those with a regular source of care; * = $p < .05$, ** = p , .01, *** = $p < .001$;

.078 for race in table 8 vs. R^2 = 0.407 for race in table 17). It should be noted however that it is not unusual to find that the models that examine the relationship between the use of medical care and the satisfaction with that care account for a smaller portion of the explained variance in the outcome of care than other models (Mechanic 1981; Aday, Fleming and Andersen 1984).

A final set of distinctions that need to be made between these tables (8 and 9) versus tables 6 and 7 deals with the importance of the severity of the patients' condition in the outcome of care. One finds that in comparison to models using the degree of improvement in the patients' condition, the severity of the patients' condition is only slightly important (beta = .021- table 8, beta = .025, table 9) in models of satisfaction with the quality of care. In light of these circumstances it would be less beneficial to look at the interaction between the severity of the patients condition and age or worry, or to examine the structure, process and outcome of care separately for those with acute or chronic conditions (as done previously). Thus the subsequent analysis of the satisfaction of care will focus on those with acute and those with chronic conditions together.

Even though one finds several significant differences between table 8 and table 6 and 7, one finds that there are several interesting patterns involving the structure, process and outcome of care for whites and minorities. For example, it was reported in table 4 that minorities were less likely than whites to be totally satisfied with the quality of medical care. Yet the data in table 8 reveals that minorities were about as likely (beta = .005) as whites to be satisfied with the quality of care.

This discrepancy in the findings could be explained by two factors. First of all, the data presented in the descriptive analyses reflects only those who are totally satisfied with the quality of care, while the data in table 8 includes those who were less than totally satisfied. When one includes the individuals who were less than totally satisfied with the quality of care one finds that 98 percent of the whites and 99 percent of minorities were at least slightly satisfied with the quality of care. Second, since these findings are based on a subset of those who saw their regular doctor one should expect only a small difference between minorities and whites, since minorities are less likely than white to have or see a regular doctor. This suggests that depending upon how one measures satisfaction with the quality of care one may get different results for whites and minorities.

While it appears that one may find different results on the measure of the outcome of care depending on how s(he) defines satisfaction, it is also possible to have different results depending upon what factors in the structure and process of medical delivery are being considered. In the first stage of this model one finds that controlling for race and sex, older individuals (beta = -.078, p<.001) were more likely than younger individuals to be satisfied with the quality of care. This difference becomes more pronounced (beta = -.132, p<.0.001) when one controls for differences in health status and the structure and process of medical delivery.

As reported in table 8, not only does one find that there are differences between older and younger individuals on this outcome measure, but also across the various regions and types of residences of the country. Individuals living in the south were more likely (beta = -.041, p<.05) to be satisfied with the quality of care than those living

in the east. On the other hand individual living in the north central region of the country (for example, Illinois) were less likely (beta = 0.035) than those living in the east to be satisfied with the quality of care. Next, one sees that individual living in smaller metropolitan areas (beta = -.013), towns and surburban areas (beta = -.021) and in rural areas (beta = -.041) were more likely than those living in central city areas to be satisfied with the quality of care.

As mentioned previously it is interesting to see that while age and regional variations were important determinants of the degree of satisfaction with the quality of care, the severity of the persons' condition was not. Instead of the severity of the patients being the most important health status variable, the degree of worry is the most important for this model. Individuals who express some or a great deal of worry about their condition were less likely (beta = .059, p<.01) than individuals who expressed no or hardly any worry about their condition to be satisfied with the quality of care. It may be that the amount of worry that a person expresses about their conditions is linked to their perception of the quality of care.

In contrast to what was found in earlier tables, the most important group of factors in this model of the structure, process and outcome are the factors representing the structure of medical delivery. Individuals who go to a hospital OPD as their regular source of care were less likely (beta = .101,p<.05) than those who went to a doctors office to be satisfied with the quality of care. However, individuals who saw a generalist (beta = 0.174, p<.001) or a specialist (beta = .213, p<.001) were less likely than others[4] to be satisfied with the quality of care.

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[4]Others could include medical students following the instructions or directions of others; residents or interns who simply looked in on the patient, anesthesiologists, pathologists or radiologists who did not

Despite the conclusion that some of the structure indicators had a significant impact on the degree of satisfaction with the quality of care, the reported factors representing the process of medical delivery were only slightly related to the outcome of care. Individuals who made more visits to the physician (beta = - 0.027) or stayed longer in the hospital were more likely than others to be satisfied with the quality of care. Given the direction of these findings it is may be possible that individuals who spend more time visiting the physician or staying in the hospital see this type of care as being better for them even though this is not always the case. However it would require more extensive research to see if there is some relationship between the satisfaction with the quality of care and the degree of improvement in ones' condition.

While table 8 displays the relative importance of the structure and process of medical delivery on the degree of satisfaction with the quality of care for minorities, table 9 displays these same types of findings for the poor and the nonpoor. Whereas the primary independent variable (race) was not a significant predictor in the previous regression model, it is an important factor in this model. The poor were significantly less likely (beta =.055, p<.01) than the nonpoor to be satisfied with the quality of medical care. When one controls for factors in the structure and process of medical delivery, the nonpoor were even less likely (beta = .100, p< 0.001) to be satisfied with the quality of care.

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directly treat the patient or members of the surgical team who may have observed, but did not directly participate in the care of the patient.

TABLE 9

SATISFACTION WITH THE QUALITY OF CARE (BETAS) BY INCOME

	Stages of Regression Model[a]				
	Race	Environment	Health Status	Structure	Process
Income:					
Below 1.0 Poverty	.055*	.057*	.055*	.099***	.100***
Between 1.0 and 1.5 Poverty Level	−.034	−.036	−.042	−.010	−.011
Age	−.080***	−.074***	−.079***	−.126**	−.123*
Sex:					
Male vs. Female	.040*	.032	.027	.011	.007
Environment:					
Region					
East vs. West		.002	−.006	.003	.007
East vs. North Central		.037	.033	.031	.034
East vs. South		−.037	−.047	−.048	−.046*
Residence:					
Central City vs. Other- SMSA		−.006	−.003	−.006	−.012
Central City vs. Non Farm		−.026	−.029	−.082*	−.082*
Central City vs. Farm		−.042	−.042	−.041	−.040
Health Status:					
Acute vs. Chronic Condition			.029	.012	.025
Total Disability Days (logged)			.024	.002	.016
No/Hardly any vs. Some/Great Deal of Worry			.061*	.052*	.057*
Structure:					
Regular Source of Care:					
Doctors Office vs. Hosp. OPD				.094*	.095***
Doctors Office vs. Hops. ER/ Other Source				−.032	.025
Doctors Office vs. No Source				−[c]	−[c]
1+ Episode Dr. Was:					
A Specialist				.183***	.189***
A Generalist				.219***	.222***
Insurance:					
Private vs. Public				.052	.052
Private vs. Public & Private				−.012	−.010
Private vs. No Insurance				.069***	.069***
Process:					
Visits to Physician (logged)					−.035
Nights in Hospital (logged)					−.019
R^2	.009	.017	.024	.068	.071

[a]- Universe of individuals for this table are those who were treated by their regular source doctor during this episode. [b]- Logged Dependent Variable- Original Categories were: 1 = Completely Satisfied; 2= Mostly Satisfied; 4 Moderately Satisfied, 4= Slightly Satisfied, 5= Not at all Satisfied; [c] betas are missing for this variable because the satisfaction question was only asked for those with a regular source of care; * = $p < .05$, ** = $p , .01$, *** = $p < .001$;

Apart from this difference though the other findings reported in this table are quite similar to the results reported in table 9 Aside from income the most important predictors of disparities in the degree of satisfaction with the quality of care were: age, region, residence, worry about ones' condition, source of care, insurance and type of doctor seen (for example a specialist).

Having evaluated the relative importance of selected factors on the outcome of care for minorities and the poor the researchers are left with on one hand some better understanding of the importance of insurance, regular source of care and measures of utilization in determining the degree of improvement in the patients condition. On the other hand we are left with some question of both what accounted for the variations in the findings as well as what are the implications of these findings for further research on minorities and the poor. In the final section these findings will be reviewed in light of the literature discussed on this topic, the hypotheses which were generated from this effort, and especially the implications of these findings for future research.

DISCUSSION

This study has revealed that there are a variety of factors that have an impact on the outcome of medical care for minorities and the poor. While it was revealed that minorities and the poor were sicker and less likely to show an improvement in their condition than whites and the nonpoor, factors representing the structure and process of medical delivery had an impact on the outcome of their care.

One of the structural factors that had a significant impact on the outcome of care was the individuals' regular source of care.

Individuals with acute conditions who went to hospital OPDs or some other source of care were _less_ likely than those who went to a doctors' office, to show some improvement in their condition. However, individuals with chronic conditions who went to hospital OPDs, to a hospital ER or some other source of care were _more_ likely than those who went to a doctors' office, to show some improvement in their condition.

The patients' source of care not only had an impact on the degree of improvement in his/her condition, but also on his/her degree of satisfaction with the quality of care delivered at their recent medical visit. Minorities and the poor who went to hospital OPDs were less likely than those who went to a doctors' office to be satisfied with the quality of care. Furthermore, it was found that minorities and the poor who went to a hospital ER or some other source of care were more likely than minorities and the poor who went to a doctors office to be satisfied with the quality of care. Finally, it was found that that minorities and the poor who were cared for by their regular source doctor were more likely than minorities and the poor who were not cared for by their regular source doctor to show some improvement in their condition.

Not only did the analysis of the structure of medical delivery indicate that descriptors of regular source of care had a significant impact on the outcome of care, it was also concluded that health insurance had a significant impact on the outcome of care. It was found that controlling for other structural factors, individuals with both public and private insurance were much more likely than those with private insurance to show improvement in their condition or to be satisfied with the quality of care. On the other hand, it was found that individuals with public insurance or no insurance were less likely

than those with private insurance to show an improvement in their condition or to be satisfied with the quality of care. These findings suggest that while the health status of the patient is an important factor in this model of the structure, process and outcome of care, factors representing the structure of medical delivery are also important determinants of the outcome of care.

As mentioned earlier, not only did the structure of medical delivery had a significant impact on the outcome of care, so did the process of medical delivery. While it was found that individuals who made more visits to the physician were less likely to show an improvement in their condition, the impact of the length of stay in the hospital on the outcome of care depended on the severity of the patients' condition. The longer an individuals with an acute condition stayed in the hospital, the less likely s(he) was to show some improvement in his/her condition. However, the longer an individual with a chronic condition stayed in the hospital, the more likely s(he) was to show an improvement in his/her condition.

It should be noted that in spite of the impact of the number of visits to the physician or and nights in the hospital on the outcome of care, individuals who stayed longer in the hospital or who made more visits to the physician, were more likely than others to be satisfied with the quality of care. It could be that after a certain amount of medical care, more care is seen as less beneficial for individuals with acute conditions. This suggests that in the formulation of health care policy strategies (such as DRGs) one needs to be sensitive to the benefits of longer vs. shorter hospital stays on the outcome of care for those with chronic or acute conditions.

As a result of these observations one can point out a few issues that appear to be important in the consideration of further research on the health of minorities and the poor. Since it was found that health status was an important predictor of disparities in the outcome of care, future research could focus on methodological differences in the measurement of health status and the outcome of care. For example, above and beyond the techniques used in this study for analyzing health status, further research could examine what factors account for differences in the reportin of health and how this effects the findings for minorities and the poor.

A second issue that can be considered is examining the long range possible effects of the organanization and financing of medical delivery on the health of minorities and the poor. Specifically, one could consider exploring the realtionship mbetween the comprehensiveness of medical insurance and/or the comprehensiveness of the types of services provided in a varity of health settings, on the health of minorities and the poor.

Finally, future research can also benefit from examining the impact of differences in the treatment regimen on the outcome of care. This research could focus on the relationship between the perception of ones' care and soem objective measures of the benefits of that care.

APPENDIX A.

A MODEL FOR ASSESSING THE DIFFERENCES IN THE OUTCOME OF MEDICAL CARE

```
---------------------------------------------------------------------
|  EXTERNAL FACTORS                                                 |
|                           :                                       |
|        -----------------------------------------------           |
|        :Environmental Context: Quality of Housing  :              |
| -------:and neighborhood (obtained from the ARF     :-----------  |
| :      :file): Variations across region and size    :          : |
| :      :of community (obtained from the CHF Study)  :          : |
| :      -----------------------------------------------          : |
| :                         :                                     : |
| :      -----------------------------------------------          : |
| :      :Individual Differences- Health Status        :          : |
| -------:age and sex                                  :---------  : |
| :      -----------------------------------------------          : |
| : :                       :                                   : : |
| : :  -------------------------------------------------------- : : |
| : :  |  MEDICAL CARE DELIVERY SYSTEM                        | : : |
| : :  |                                                      | : : |
| : :  | Structure- : Qualifications of Provider: generalist vs. : | : |
| : :  |            : specialist.                              | : : |
| : :  |            : Characteristics of Setting: Type of      | : : |
| : :  |            : health setting. location of setting.     | : : |
| : :  |            -------------------------------------------| : : |
| : :  |               :           :            :             | : : |
| : :  | Process    -------------------------------------------|: : |
| : :  |            :Number of Contacts with a Doctor. Number of Recom-|: : |
| : :  |            :mended Visits to a Doctor. Number of Hospital|: : |
| : :  |            :Admissions, Number of Nights in the Hospital|: : |
| : :  |            -------------------------------------------- : : |
| : :  -------------------------------------------------------- : : |
| : :           :           :            :                     : : |
| :----  Outcome   ---------------------------------    ----------: |
|                  : -Was the patient cured or not?  :              |
|                  : -Satisfied with quality of care?:              |
|                  ---------------------------------                |
---------------------------------------------------------------------
```

APPENDIX B

THE ANDERSEN/ADAY BEHAVIORAL MODEL OF ACCESS TO MEDICAL CARE

```
                          +------------------+
                          : HEALTH POLICY    :
                          : -Organization    :
                          : -Financing       :
                          +------------------+
                               v         v
+----------------------------------+    +----------------------------------+
:POTENTIAL ACCESS                  :    :      POTENTIAL ACCESS-            :
:STRUCTURAL INDICATORS             :    :      INDICATORS                  :
:                                  :<-->:                                  :
:Characteristics of               :    :   Characteristics of             :
:Health Service Delivery System   :    :   Population at Risk             :
:                                  :    :                                  :
:Availability                     :<-->:   Predisposing                   :
:  Personnel/facility to          :    :     Age. Sex. Race.              :
:  population Ratios               :    :     Education. occupation        :
:Organization                     :    :     Health care Attitudes        :
:  Structure and Convenience      :    :     Health care Behaviors        :
:  of Medical Care Facilities     :<-->:   Enabling                       :
:                                  :    :     Rural-urban place of         :
:                                  :    :     residence. family Income     :
:                                  :    :     Structure and Convenience    :
:                                  :    :     of Regular Source of Care    :
:                                  :<-->:     Type and Extent of           :
:                                  :    :     Insurance Coverage           :
:                                  :    :   Need                           :
:                                  :    :     Disability days              :
:                                  :    :     Symptoms                     :
+----------------------------------+    +----------------------------------+
              v                                        v
+----------------------------------+    +----------------------------------+
:                  (OUTCOME INDICATORS)                                    :
: REALIZED ACCESS-                 :    :      REALIZED ACCESS             :
: OBJECTIVE INDICATORS             :    :      SUBJECTIVE INDICATORS       :
:                                  :<-->:                                  :
: Utilization of                   :    :   Consumer Satisfaction          :
: Health Services                  :    :   (satisfactions with:)          :
:                                  :    :                                  :
: Physician                        :    :   Convenience                    :
: Hospital                         :    :   Availability                   :
: Dentist                          :    :   Financing                      :
: Purpose                          :<-->:   Provider                        :
: Time Interval                    :    :   Characteristics                :
:                                  :    : Quality                          :
+----------------------------------+    +----------------------------------+
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[0]From Aday and Andersen (1981); Comments in () are supplied by the author for clarification of certain aspects of the Behavioral Model.

APPENDIX C

THE DONABEDIAN MODEL OF ASSESSING THE QUALITY OF MEDICAL
CARE

STRUCTURE	PROCESS	OUTCOME
-Availability of providers -scope of benefits, service -facilities accreditation -methods of payment -satisfaction of practitioners. -primary physician -referral network -information retrieval system	-Utilization patterns time, place, type of provider, use-relative to need. -adequacy of diagnostic work-up and treatment -completeness and specificity of diagnosis. -physician-patient interaction (respect for autonomy, support, explanation, reassurance). -Number if physicians seen, with and w/o referral, continuity of care, referral patterns	Satisfaction with accessibility, outcome, as well as the structure that leads to the outcome. -Mortality and Disability. -Results of Treatment -Satisfaction with Physician -patient relationship, continuity.

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[1] From Donabedian (1980, 95-97).

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February 8, 1988

The University of Chicago
Graduate School of Business
Center for Health Administration Studies
Walker 111, 1101 East 58th Street
Chicago, IL 60637

Dear Sir/Madame:

Please send a copy of the paper entitled "An Analysis of the Delivery of Medical Care to Minorities and the Poor," by Llewellyn Cornelius, M.A., that was presented on February 25, 1988 at the Workshop in Health Administration Studies to me at the address below:

> Cecilia E. Dawkins, Ph.D., R.N.
> The University of Michigan School of Nursing
> 400 North Ingalls Building, Room 3187
> Ann Arbor, MI 48109

Thank you for your attention to this matter.

Sincerely,

Cecilia E. Dawkins, Ph.D., R.N.
Assistant Professor and Assistant
    Research Scientist
Community Health Nursing

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