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MEDICAID AND MEDICAL CARE FOR CHILDREN

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ABSTRACT

Data from the National Longitudinal Surveys are used to compare the medical care received by children covered by Medicaid with that of other similar children. The longitudinal dimension of the data is exploited as we examine differences between siblings and repeated observations on the same child. We find that Medicaid coverage is associated with a higher probability of both black and white children receiving routine checkups but with increases in the number of doctor visits for illness only among white children. This racial disparity in the number of visits may be linked to the fact that black children with Medicaid coverage are less likely to see a private physician than other children.

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1. Introduction

Medicaid is a federal-state matching entitlement program providing medical insurance to low-income persons. In 1989 10.3 million dependent children under age 21 were covered at a cost of $6.9 billion (U.S. Committee on Ways and Means, 1990).[1] The introduction of Medicaid in 1965 coincided with decreases in infant mortality, increases in hospitalization rates for poor children, and an increase in the frequency of doctor visits for poor relative to non-poor children (Danzinger and Stern, 1990; Starfield, 1985). However, despite these advances, America's children are in poor health relative to those in other industrial countries. The American infant mortality rate is the highest in the developed world. And in some states, the black infant mortality rates rival those of developing countries (Danzinger and Stern, 1990). Compared to Canadian children, U.S. children under 15 years of age had 28% more disability days and 44 percent more bed days. Children under 1 year of age had a 14% higher mortality rate and children 1 to 4 years of age had a mortality rate 8% higher than Canadian children (Kozak and McCarthy, 1984).

Even if one discounts international comparisons of morbidity (since it might be argued that American parents report illness differently from parents in other countries), these high rates of mortality suggest that poor children in the United States are not receiving the same quantity or quality of health care as children in other developed countries. The question is whether the problem is one of inadequate care of children covered by Medicaid, or solely one of incomplete coverage? The uninsured are known to receive less health care than the insured (Davis and

[1]Expenditures on children constitute only 12.6% of Medicaid expenditures. The average Medicaid expenditure per child is $682. compared to $5928. for an aged person, and $1290 per AFDC adult (U.S. Committee on Ways and Means, 1991).

Reynolds, 1976; Manning *et al.*, 1987). And in 1988, 17% of all children and 28% of children with family incomes less than $10,000 were without health insurance coverage of any kind (Bloom, 1990).

If the problem is one of coverage alone, then recent extensions of Medicaid coverage to all poor children should have a dramatic effect on children's health. Effective July 1, 1991, all states are required to cover children born after September 30, 1983 whose family incomes are below the federal poverty line (U.S. Committee on Ways and Means, 1991). As of July 1990, 24 states had also made use of an option to extend coverage to pregnant women and children under one year of age with incomes between 133 and 185% of the federal poverty line, depending on the state.

However, it is possible that even children covered by the program are inadequately served. Sloan, Mitchell and Cromwell (1978) and Decker (1992) report that many doctors do not participate in the Medicaid program and Decker finds that those who do serve Medicaid patients spend significantly less time with their patients than other doctors. One reason for low participation rates and low quality care may be that Medicaid fees are on average 75% of a doctor's usual fee.[2] And many states limit the services available to Medicaid patients: for

[2] According to a survey conducted by the Alan Guttmacher Institute in 1986, there are many other reasons why doctors do not participate in the program. In their words: "There is more red tape under Medicaid than under private insurance. Medicaid often uses a different claim form from other insurers, requiring a separate computer system; it sometimes uses different procedure codes or diagnosis codes on its claim forms; claims are paid late and are sometimes denied on a technicality; in some states Medicaid funds are exhausted part way through the year and no further claims are paid; there are often different rules and reimbursement schedules for clinics, hospitals and physicians, complicating the practice of physicians who work in more than one setting; reimbursement policies change frequently but providers are often not notified of the changes until after claims have already been denied..." etc. (AGI, 1988).

instance in fiscal year 1986, Texas did not cover clinic services, Connecticut did not cover emergency services and New Hampshire restricted Medicaid patients to 12 outpatient visits per year (U.S. Health Care Financing Administration, 1988). Finally, bureaucratic delays may pose a significant barrier to timely care: for example, the average delay in processing applications is 4 weeks (AGI, 1988).

There is reason to suspect that these problems may have different effects on black than on white children. First, residential segregation probably plays an important role in determining the access of black children to medical services. For example, Fossett and Peterson (1989) find that areas with higher degrees of residential concentration of Medicaid patients have lower doctor Medicaid participation rates, while Gemson *et al.* (1988) find that doctors with a high share of black patients give lower quality care.

Residential segregation may also be a partial explanation for the fact that black and white children tend to obtain care from different sources: Black children are twice as likely as white children to receive care in an "organized setting" such as a clinic or emergency room rather than from a private provider, HMO, or prepaid group practice (Bloom, 1990). It may well be the case that clinics and emergency rooms provide medical care whether or not a child has insurance coverage -- so that to the extent that black children rely on these sources of care, Medicaid coverage may confer less of an advantage relative to no insurance coverage.

In this paper, we use longitudinal data from the National Longitudinal Survey of Youth (NLSY) and National Longitudinal Survey's Child-Mother file (NLSCM) to compare the utilization of medical services of children covered by Medicaid to that of other children, and to investigate racial differences in access to care. Covering the period 1978 through 1988, the data

have 10 years of background information about the mother, as well as observations of siblings, and repeated observations of the same child. We exploit this repeated measures aspect of the data to control for the possibility that Medicaid-covered children differ from their peers in unobservable ways by using fixed effects.

We find that even when both observable and unobservable characteristics of the mother and child are controlled for in this way, Medicaid has a positive effect on the probability that black and white children receive routine checkups. Medicaid also has a positive effect on the number of doctor visits for illness for white children, but not for black. These racial differences in the number of doctor visits for illness may be linked to the fact that black children on Medicaid are less likely than white children on Medicaid to see a private doctor.

II Conceptual Framework

In order to examine the relationship between Medicaid and health care of children, we draw on an economic model of household choices. Following Becker (1981), Becker and Lewis (1974), and Grossman (1972), we assume that household utility depends on the consumption of goods and on the "quality" of children. Health is an index of child quality and is "produced" by combining inputs in the manner implied by a health production function. The input that is the focus of our attention is health care and, in particular, we are interested in the relationship between it and Medicaid.

Parents are assumed to maximize utility subject to the household budget constraint and a health production function. Eligibility for Medicaid might have both an income effect (shifting the budget constraint outward) and a price effect (reducing the relative cost of health care).

Hence, under reasonable assumptions, one might expect Medicaid eligibility to be associated with an increase in the utilization of health care, other things being equal. It is, however, possible that being eligible for Medicaid will have little or no effect on behavior. For example, the opportunity cost of health care may be at least as high for Medicaid eligible as for ineligible families if the cost of locating and traveling to a participating physician is high. Secondly, the quality of service received by Medicaid patients may be lower than the quality received by the rest of the population.

The shape of the production function will depend on family and neighborhood characteristics such as an individual's health endowment as well as the health environment. Other individual, household and community characteristics, such as parental education, are likely to also affect the choice of technology and the effectiveness with which inputs can be combined.

The household optimization problem can be solved to yield a conditional demand function (Pollak 1969), which is conditioned on whether or not the family is eligible for Medicaid. Hence we estimate the relation:

$$\theta = f(x_c, x_f, x_n, I(m), \varepsilon) \qquad [1]$$

where θ is a measure of child health care, x_c are characteristics of the child, x_f are characteristics of the family, x_n are characteristics of the neighborhood, all of which are assumed to be exogenous, and I(m) is an indicator function denoting eligibility of the household for Medicaid. In some of our models, we will simultaneously examine the role of private insurance, in which case the indicator function, I(), will have two elements. The error term, ε, is comprised of unobserved community, family (or in our case mother) specific and child specific components.

Unobserved mother-specific factors which might influence the demand for health care

include the mother's knowledge of appropriate medical care, and her living conditions. Child-specific unobservables include the child's innate healthiness, his or her accident propensity, and so on. Omission of these variables from [1] may result in biased Ordinary Least Squares (OLS) estimates of the effect of Medicaid on the child's utilization of health care. A related problem is that these (unobserved) characteristics may also be related to the child's probability of being covered by Medicaid in which case, once again, the OLS estimates are biased.

In our empirical work, we attempt to address these problems by controlling for mother or child fixed effects. Mother fixed effects control for any fixed characteristics of the mother that might affect the demand for medical care, but do not control for fixed characteristics of the child, such as the child's health endowment as it differs from its siblings. Using child fixed effects controls for both mother-specific and child-specific characteristics.[3]

III The Data

The National Longitudinal Survey of Youth (NLSY) began in 1979 with 6,283 young women between the ages of 14 and 21. These women have been surveyed annually ever since. As of 1988, they had given birth to 7,346 children. Since 1983, they have been asked about the health care received by each of their children in the first year of life. In 1986, the NLS began a separate survey of the children of the NLSY, the NLSCM. Mothers were asked about the medical care their children had received in the year prior to the survey. A second wave of the

[3]Fixed-effects estimates will be unbiased as long as the omitted characteristics remain fixed over time and there are no interactions between the fixed effects and other explanatory variables. However, it must be kept in mind that this class of estimates relies on children whose mothers changed their utilization of medical care over time. These "changers" may be unrepresentative of the population as a whole.

NLSCM took place in 1988.

In this study we focus on four measures of health care utilization: two from the birth year, and two from the 1986 and 1988 surveys. The measures which apply to the birth year are: 1) whether the child was taken to a doctor for Well baby care in the first month of the first year, and 2) the total number of visits to the doctor for illnesses in the first year.[4] We also know the source of care if the child had at least one visit. In what follows we will follow Bloom (1990) and distinguish between private doctors (including HMOs) and other sources of care.[5]

The purpose of Well baby care is to monitor the early development of the child so that any problems can be diagnosed and treated before they do permanent damage. A key diagnostic tool is the baby's weight -- babies who do not experience adequate weight gain in the first month after birth may be suffering from any of a variety of ills. Babies may also receive their first set of shots during this appointment. Hence, whether or not the child receives Well Baby care in the first month can be regarded as a measure of the timeliness of preventive care.

The total number of visits for illnesses in the first year confounds morbidity with a measure of access to medical care. However, we will argue below that it appears to be a better measure of access than of morbidity in these data.

The measures of health care taken from the 1986 and 1988 waves of the NLSCM are 1) whether or not the child had a routine health checkup in the past 6 months[6], and 2) the number

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[4]We sum the total number of visits for the main illness in the first year and the total number of visits for other illness in the first year.

[5]Small cell sizes prevent us from further subdividing the other sources of care.

[6]Respondents were actually asked to choose one of seven categories. We grouped together categories 1 to 3 and categories 4 to 7 to obtain the 6 month cutoff. See Appendix Table 1 for the exact wording of the question.

of illnesses requiring medical attention in the past year. Once again, we have a measure of preventive care, and a measure which confounds morbidity and access.[7] The health care questions we use are shown in Appendix Table 1.[8]

In 1986 and 1988, mothers were asked whether the child's health care was covered by Medicaid or by private health insurance. Mothers were not asked about health insurance coverage in other years.[9] However, we can exploit the close linkage between the Aid for Families with Dependent Children program (AFDC) and Medicaid coverage to determine whether or not the child's health was covered by Medicaid in the first year. The vast majority of children covered by Medicaid in the 1980's were eligible because they were AFDC participants (Committee on Ways and Means, 1991) and the AFDC participation of the mother has been surveyed annually by the NLSY since 1979. We can also determine whether the

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[7]In 1986, mothers were asked both the number of illnesses and the number of illnesses requiring medical attention. However, in the data, the number of illnesses and the number of illnesses requiring medical attention are identical. In 1988 the question regarding the number of illnesses was dropped from the survey.

[8]The NLSY and NLSCM contain many other measures of child health care. We focus on the four measures discussed above because in the case of many of the other sample questions, the responses are either overwhelmingly positive or overwhelmingly negative leaving us with little variation in the data. For example, the RAND Health Insurance Experiment examined hospitalization rates among children (Manning *et al.*, 1987; Leibowitz *et al.* 1985). They show that although the number of pediatric outpatient visits increases with the generosity of insurance coverage, pediatric inpatient visits are unaffected. However, during their first year of life, only 8% of children in our sample are reported to have been hospitalized, 1% had surgery and 4% are reported to have used an emergency room. Inoculation histories might be useful but, in this sample, 96% of the children are reported to have received their first set of DPT shots. Similarly, among the older children, only 4% of children in 1986 and 6% of children in 1988 are reported to have a disability of any kind, where we define disability to include anything from allergies and asthma to deafness and blindness.

[9]The NLSY respondents are asked every year whether their own job provides health insurance. However, respondents were not asked whether they or their children were covered under a spouse or parent's policy.

family's income was low enough that the child would have qualified under a state Medically Needy program.[10] Unfortunately, it is not possible to reliably determine whether or not these children were covered by private health insurance in the birth year.

We checked our procedure for imputing Medicaid coverage by comparing the number of people we determined to be eligible for Medicaid in 1986 and 1988 with the number that said that their child was covered. In 1986, 3 out of 122 children that were eligible by our measure were not reported as being covered by their mothers. The comparable figure for 1988 was 14 out of 351 children. All 17 cases were ones in which we had imputed coverage on the basis of income rather than AFDC coverage: hence, it is possible that these low-income, non-welfare mothers were unaware that their children were eligible for Medicaid coverage. There were no cases in which the mother claimed coverage and we had not imputed it.

To summarize, we have two measures of health care in the birth year which are taken from all the years of the NLSY. These children are measured at the same age but in different calendar years. Using these data, it is possible to compare children with Medicaid coverage to those without but it is not possible to determine whether these children were covered by private health insurance. It is also possible to examine the relationship between differences in sibling receipt of medical care in the first year of life and differences in Medicaid coverage.

The two measures from the 1986 and 1988 surveys measure children of different ages in the same calendar years. These data can be analyzed in greater depth. First, we are able to examine the way the same child's medical care varies with changes in Medicaid and private health insurance coverage. Second, we can divide the population that is not covered by

[10]Medically Needy participants account for about 15% of the Medicaid caseload.

Medicaid into those without insurance and those with private health insurance. It is interesting to compare the effects of Medicaid and private insurance coverage because people on Medicaid are poor, while people with private insurance coverage tend to be better off. Hence, to the extent that social and private insurance have similar effects, we can conclude that Medicaid works through providing access to care rather than primarily through an income effect.

The last important feature to note about these data is that the NLSY oversampled blacks, hispanics, and poor families. Thus the sample is not nationally representative, but it does focus on the poor, minority children who are most likely to be covered by the Medicaid program, or to be uninsured if they are not. In preliminary work we found that we could reject pooling of whites and blacks but not the pooling of whites and hispanics. Hence, we pool whites and hispanics but include a full set of interactions with black in all our models. This amounts to estimating separate models for blacks and whites but has the advantage of placing the spotlight on differences between the two groups.

Table 1, which shows means of the key covariates used in our analyses by race and health insurance status, underscores the need to control for the characteristics of the children when investigating the effect of Medicaid. By virtue of the nature of the program, Medicaid children are less likely to be first born, and more likely to have poor[11], single, unemployed mothers. They are also more likely to have been low birth weight babies, and their mothers are

[11]We measure income using mean real household income over the 1978 to 1988 period. Household income in each year is deflated using the Consumer Price Index All Items (1977=100). Where available, the CPI for the SMSA is used; otherwise a measure which varies across the 4 region is adopted. The use of permanent income rather than income in a given year alleviates problems due to measurement error and the fact that Medicaid participation, marital status, employment status, and income are likely to be jointly determined.

less educated and score lower on the Armed Forces Qualification Test (AFQT), a standardized ability test[12]. On the other hand, Medicaid children are likely to live in states with better child health services if lower infant mortality rates are a reliable indicator. Black children are also more likely to be urban residents, which may also give them better access to at least minimal health services.

IV Results

a: The First Year of Life

We begin with an examination of health care in the first year of life and pool all years from the NLSY. Since two of the three measures of health care refer to the number of events in a 12 month window, children who were less than 12 months old in 1988 are excluded from the sample.

The following table shows that children who were covered by Medicaid are about 10 percentage points *less* likely to have obtained Well baby care in the first month of life and this is true for both blacks and whites. Since the standard errors on these differences are around 2.5%, they are clearly significantly different from zero.

[12]The Armed Forces Qualifications Test was administered to all the NLSY respondents at the same point in time. Since the respondents were of different ages, we have standardized the scores using the mean score in the NLSY for each year of age.

Medical Care in the First Year of Life

	White		Black	
Covered by Medicaid?	No	Yes	No	Yes
% Well Baby Care	52	45	44	35
% Any Doctor Visits	54	56	42	47
Mean # Doctor Visits	2.01	2.18	1.34	1.21
Conditional on any doctor visits:				
Mean # Visits for Illness	3.54	3.75	3.03	2.50
% Private Doctor or HMO	43	30	29	12

Among white children, there is little difference in the probability of visiting a doctor or in the number of visits for illness in the first year by Medicaid status. Among blacks, however, children covered by Medicaid are 10% *more* likely to visit a doctor but, conditional on seeing a doctor will make 20% *less* visits than a black child without Medicaid coverage. The most dramatic differences between children with and without Medicaid coverage lie in the type of care they receive: conditional on at least one visit for illness, both black and white Medicaid patients are much less likely to see a private doctor. 30% of white Medicaid patients see a private doctor compared to 43% of white non-Medicaid patients. Among blacks, only 12% of Medicaid patients see a private doctor compared to 29% of non-Medicaid patients.

Ordinary least squares (OLS) regressions of the probability of receiving Well baby care in the first month, the number of doctor visits for illness in the first year, and the probability of seeing a private doctor are shown in Table 2. These estimates may be biased by omitted variables bias as discussed above, however they do provide a convenient summary of the correlations in the data as well as a starting point for the evaluation of the importance of unobserved heterogeneity.

In addition to the indicator variable for Medicaid, each regression includes controls for the log of household real permanent income (average household income over all years), the mother's education, AFQT score and residence at age 14, the child's age and gender. A series of characteristics of the community such as income and measures of the availability of health services are included in all the regressions but suppressed from the table due to space considerations.[13] All covariates in the table are interacted with an indicator equal to one if the child is black.

Column (1) of Table 2 shows that the gap between the probability of receiving Well Baby care among white children who are covered relative to those who are not covered by Medicaid is almost all accounted for by differences in observable characteristics. This is, however, not true for black babies: they are 6% *less* likely than other children to receive timely Well baby care if they are covered by Medicaid and this difference is statistically significant. The $F_{1,4667}$ test for joint significance of Medicaid and its interaction with black is 4.2 and has a p-value of 0.04.

Estimates for the number of visits to the doctor for illness are reported in column (2) of Table 2. Recall that among whites the number of visits to a doctor are about the same for those with and without Medicaid coverage; after controlling for observables, however, we find that on average Medicaid is associated with almost half an additional visit for illness in the first year and this is statistically significant. In contrast, among blacks those with and without Medicaid coverage see the doctor exactly the same number of times on average. If the number of doctor

[13]These variables include: county *per capita* income; the number of physicians and hospital beds measured at the state level in *per capita* terms; the infant mortality rate also measured at the state level; and regional dummies for the Northeast, South and West.

visits were a measure of morbidity, then a possible interpretation of this finding would be that white babies on Medicaid are sicker then other white babies while black babies on Medicaid are not similarly selected. But a look at the other covariates in the model suggests this interpretation may not be correct.

Both the probability of receiving Well Baby care and the number of doctor visits for illness are positively associated with income and mother's human capital (education or AFQT score), and negatively associated with being in the poverty sample. If the doctor visits were primarily a measure of morbidity then we would expect opposite signs on these coefficients given the well-established fact that there is a positive association between socio-economic status and health (Black, 1988; Feinstein, 1992).[14] Our results are consistent with previous work that shows that the number of doctor visits is positively related to economic status (Davis and Reynolds, 1976; Newhouse *et al.*, 1982). Thus, we view both indicators as being, at least in part, measures of access to health care.

We examine the probability that the baby was taken to a private doctor in column (3) of Table 2. It is remarkable that the gap between the probability of seeing a private doctor among white children who are covered relative to those who are not covered by Medicaid is more than fully accounted for by differences in observable characteristics. Conditional on observables, white children on Medicaid are actually slightly more likely to see a private doctor, although the difference is not statistically significant. Among black children, the 17% gap (reported in Table

[14]The positive association between maternal education and self-reported measures of child morbidity has been noted by many researchers (see Sindelar and Thomas (1991) for an example and discussion). We also find that these measures of health care are positively associated with per capita county income and residence in the (better off) Northeast.

1) is reduced to about 3% by the addition of the controls.

Since all these measures apply to the first year of life, the age coefficients can be interpreted as cohort effects and they indicate that the prevalence of Well Baby care increased between 1981 and 1985 (relative to 1979) but has subsequently decreased especially among whites so that in 1987 it was below the level of the early eighties. There has also been a substantial increase in the number of doctor visits in the first year during the second half of the eighties, particularly among whites. On average, a white infant born in 1986 or 1987 will have had one additional doctor visit in the first year relative to children born in the previous seven years. There has also been a substantial shift towards private health care: a child born in the late eighties was 50% more likely to see a private doctor than a child born a decade before. This evidence suggests there may have been a shift away from preventive care towards (private) curative care among infants in the latter half of the eighties.[15]

The results in Table 2 are robust to several changes in specification. We have estimated logits for the probability of receiving Well baby care and we have also estimated the number of doctor visits for illness equations using only the sample of children who had at least one illness. We also estimated models which included indicator variables for each state rather than the state-level characteristics described in footnote 13.

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[15]This shift appears to be concentrated in the group of children who are not on Medicaid. Among those children who were on Medicaid, the number of doctor visits in the first year rose slightly for each birth year from 1978 until it reached a maximum for children born in the mid-1980s. Since then, however, there has been a decline in the number of visits for both racial groups. We found no evidence of variation in the effect of Medicaid on Well Baby care over time. Congressionally mandated expansions of Medicaid coverage to poor women with incomes above the AFDC break-even level began in 1986; apparently these expansions had not resulted in increased access to Well Baby care by 1988, the end of our sample period.

Finally, as discussed above, the OLS coefficients in Table 2 may be biased by the omission of other important variables that are correlated with Medicaid coverage and with the unobserved health and medical care of the child. For example, Table 1 showed that Medicaid children were more likely to be born to younger mothers and less likely to have a father-figure in the home. It is possible that some of these unobserved characteristics are highly correlated with permanent income. Such a correlation might help account for the large estimated income effects: Table 2 indicates that among white children, a $1000 increase in permanent income would increase the probability of receiving timely Well Baby care by 34%, raise the number of visits for illness by .62, and increase the probability of seeing a private doctor by 69%. The corresponding figures for black children are 4%, .90, and 35% respectively.

One approach to the problem of omitted variables bias is to simply include all the observable characteristics of the mother and child. We have estimated models similar to those shown in Table 2 except that they include indicators equal to one if the child's birth weight was less than 2500 grams, if the child was the first born, if there was a spouse or partner present in the birth year, or if the mother was employed in the birth year are included as well as the number of children in the household and the mother's age at first birth. The inclusion of these variables did not alter the conclusions drawn from Table 2.[16]

However, we prefer to exclude these variables from the OLS models because whether

[16]The coefficients on the additional covariates themselves indicate that first born children are significantly more likely to receive Well Baby care, as are children born in a household where there is a spouse or partner present. Children with more siblings receive fewer doctor visits, as one might expect if there were a tradeoff between child "quality and quantity" (Becker and Lewis, 1974).

or not a child is of low birth weight, for example, may reflect the same decision process on the part of the mother as whether or not the baby gets Well Baby care. Similar arguments could be made regarding the endogeneity of age at first birth, the presence of a spouse or partner, or employment status.

We turn, therefore, to an alternative estimation strategy. As discussed above, both observed and unobserved characteristics of the mother (though not unobservable characteristics of the individual child) can be controlled for by comparing siblings in cases where one sibling was covered and one was not covered by Medicaid. The results of this experiment are shown in Table 3.[17]

Part A shows the percentages of sibling pairs who "gained" or "lost" Well Baby care, doctor visits for illness, or private doctor care between the births by changes in Medicaid

[17]A second solution to potential problems associated with omitted variable and selection is to use Two Stage Least Squares (TSLS) to purge common elements in Medicaid usage and the unobservable health endowment, ε, in [1]. Following the spirit of several recent "natural experiments" reported in the economics literature, we have treated county and state-level variation in the generosity of welfare programs as instruments for the mother's participation in Medicaid. These instruments include Medicaid payments *per capita* and AFDC payments *per capita* measured at the county level; the number of Medicaid recipients, value of payments and number of AFDC recipients per capita measured at the state level; the fraction of state Medicaid payments which are made to dependent children under 21 years of age; the fraction of state Medicaid recipients who are dependent children under 21 years of age; and the income cutoff for the participation of pregnant women and infants in the Medicaid program. All of these variables are measured in the birth year. There is a good deal of variation in the instruments and they do have explanatory power with over a quarter of the variation in the probability of Medicaid coverage being explained in first stage regressions. The second stage estimates, however, are very imprecise and according to Wu-Hausman tests, Medicaid may be treated as exogenous in these models and so there is no statistical reason to prefer TSLS over OLS estimates. It is well known that Hausman tests can lack power and our finding is hardly surprising in view of the imprecision of the TSLS estimates. Nelson and Startz (1990) demonstrate that in the bivariate case, the TSLS "cure" for endogeneity bias can be worse than the disease when the correlation between the instrument and endogenous regressor is low.

coverage. Changes in maternal employment, marital status, and income are also shown. All differences are taken between a younger and an older child. The table illustrates that there are racial differences even in the pattern of these changes. For example, white mothers who lost Medicaid coverage appear to be more likely to have "gained" Well Baby care for the second child (and less likely to have "lost" it) than other white mothers. But black mothers who gained Medicaid coverage are less likely to have gained Well Baby care and more likely to have lost it than other black mothers. Mothers who lost coverage were less likely to have lost a doctor's visit for the younger child, while black mothers who gained coverage were also less likely to have lost a visit. And whites who gained Medicaid coverage were much more likely then blacks who gained coverage to lose access to a private doctor's care.

Some of these differences may reflect the fact that white women who lost Medicaid coverage were more likely to have exited through marriage than through employment, while the opposite is true for black women. It is interesting to note that both methods of exit are associated with similar increases in mean income: white women who left Medicaid experienced a mean gain in income of $3570 while black women gained $4100.[18]

Estimates of the effect of Medicaid coverage from fixed effects models of the determinants of medical care in the first year are shown in Panel B of Table 3. Because of the dichotomous nature of the outcome variables, the models of Well Baby care and of whether the child saw a private doctor are estimated using Chamberlain's (1980) conditional logit, while the

[18]In any year of the NLSY, household income is often missing. In order to attenuate the effects of missing data and random measurement error, we use three year moving averages of income centered around each birth as the measure of income in these regressions. For children born within one year of each other, income in that year does not enter the difference calculations.

model of doctor visits is estimated using OLS on sibling differences.[19]

All the models allow for cohort effects by including age dummies and the difference in the ages of the siblings. We have also included a variable indicating whether or not the child (or one of the children in the pair) is the first born since the underlying data showed that firstborn children are more likely to receive some services than other children.[20] The even numbered columns include the changes in employment, marital status, and income discussed above so that we can see whether the estimated effects of Medicaid are sensitive to their inclusion. In order to allow for the racial differences we include interactions of the indicator for "black" with all of the variables in the model.

The regression results in Panel B rely crucially on "changers" within the sample: that is sibling pairs in which one received the care and the other did not. There are rather few of these changers (see the foot of Panel A) and so coefficient estimates are very imprecisely estimated; only the effects of Medicaid and its interaction with black are presented. Qualitatively, however, the results in Table 3 are not dissimilar from the OLS estimates in Table 2. To see this, it is necessary use the conditional logit estimates to calculate the changes in the probability of obtaining Well Baby care and of going to a private doctor that are associated with gaining Medicaid for whites and blacks. By assuming a value for the fixed effects (which are not estimated) it is possible to use the estimates of the slopes to calculate the difference in the

[19]The conditional logits were run using Limdep, which requires a balanced panel. In cases where there were more than 2 children we did the following: If there was an even number we treated each pair of siblings as an observation. If there were an odd number, we deleted the first born and then treated each pair as an observation.

[20]The results are not sensitive to the exclusion of this variable.

probability of an event that is associated with changes in Medicaid coverage.[21]

The estimates in columns (1) and (2) of Table 3 imply that both whites and blacks on Medicaid are about 3 to 4% less likely than similar whites and blacks to receive timely Well Baby care, and that blacks on Medicaid are a further 2 to 3% less likely to receive Well Baby care then whites on Medicaid. The estimates in columns (3) and (4) suggest that whites with Medicaid coverage receive about .3 more visits on average then similar children without coverage, but that there is no similar effect for blacks. Finally, the estimates in columns (5) and (6) imply that, among whites, those on Medicaid are about 5% less likely to see a private doctor; the estimates for blacks are very unstable which is unsurprising in view of the small number of "changers" in this group.[22]

b: Results for Older Children

In the previous section, we drew data from all rounds of the NLSY and examined health care during the first year of life of each child; in that section we controlled for mother fixed effects by comparing the experience of siblings. In this section, we examine the detailed data on child and family characteristics that are reported in the two NLSCM modules, pooling data

[21]The probability that the event occurs is $(1/(1 + \exp(-\alpha - \beta x)))$ and the problem is that α is not estimated. However, given the estimates of β, we can by assuming a value for α, calculate changes in the probability of the event that are associated with changes in x. To obtain the numbers given in the text, we set $\alpha=0$. We found that while the probabilities were sensitive to the value chosen for α, the changes in probabilities associated with changes in Medicaid status were little affected by the choice of α.

[22]The conjecture that the lack of significance in these results is due to small sample sizes is supported by the results below which show that models estimated using OLS and fixed effects for each child lead to very similar conclusions for older children.

from both the 1986 and 1988 surveys. We can distinguish children covered by Medicaid, those with no coverage at all and those with private insurance coverage. In these estimates we exploit the panel dimension of the NLSCM and control for child fixed effects.

We focus on the number of illnesses that required medical attention in the previous year and the percentage of children who had a routine checkup in the previous 6 months. The following tables illustrates the changes in these variables with health insurance coverage and the child's age:

Medical Care in the 86 and 88 Surveys

	White			Black		
Form of health insurance:	Med	Pvt	None	Med	Pvt	None
% routine health checkup in past 6 months						
1 to 3 years	79	80	71	86	80	73
3 to 5 years	68	51	50	70	57	61
5 to 9 years	48	44	36	57	48	35
# illnesses requiring medical attention in past 12 months						
1 to 3 years	1.64	2.01	1.38	.69	1.17	1.10
3 to 5 years	1.15	1.19	.87	.48	.60	.54
5 to 9 years	.74	.84	.53	.34	.45	.32
# Observations						
1 to 3 years	238	1064	322	225	279	83
3 to 5 years	324	1042	348	269	294	100
5 to 9 years	429	1392	474	468	498	210

As the table indicates, the probability of seeing a doctor declines with age and, in general, children who are on Medicaid are more likely than other children to report a routine health checkup in the past 6 months. Children with private insurance are more likely to see a doctor than those without any coverage. Among white children, those on Medicaid are more likely to report a checkup than those without any insurance but the gap between those with

Medicaid and private health insurance appears to be less important.[23]

The reported number of illnesses requiring medical attention is an indicator of both morbidity and access to health care and we cannot disentangle the two. Like routine checkups, they tend to decline with age of the child. With respect to insurance, the clearest patterns emerge for children with private coverage: in general, they are reported as having more illnesses than both those with Medicaid and those without any insurance whatsoever. These differences are significant for black children aged 1 to 3 and over 5. The differences between those with Medicaid coverage and those without insurance coverage are negligible except among whites: those with Medicaid report more visits to the doctor for illness.[24] This pattern may reflect selection of white families with children who are less healthy into Medicaid. If this is true, then the selection will be taken into account in the fixed effects models reported below.

The hypothesis that children of all ages can be pooled is rejected in our regression models and so the data have been stratified into the three age groups. This may reflect differences in the health production function over the course of a child's life.

Ordinary Least Squares estimates of the probability that a child had a routine health checkup in the past 6 months and of the number of illnesses requiring medical attention in the past year are shown in Table 4. Since observations from both the 1986 and 1988 NLSCM surveys have been pooled, a control for the earlier survey is included to allow for possible

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[23]In a linear regression of a dummy variable equal to one if the child had a routine doctor checkup on indicators for Medicaid and private health insurance coverage, the Medicaid effect was positive and statistically significant except for white children 1 to 3, and for black children 3 to 5. The indicator for private insurance was not statistically significant except for white children 1 to 3.

[24]The difference is significant for children over 3 years old.

differences between the two waves.

These regressions include dummy variables for both Medicaid coverage and private health insurance coverage. The excluded category is no insurance. We obtained very similar results when we estimated models which included either the Medicaid variables or the private health insurance variables separately. As in the previous section, all models include full interactions with an indicator equal to one if the child is black.

Turning first to the linear probability models for doctor checkups, we find that Medicaid coverage is estimated to increase the probability of a routine checkup among white children and this effect is large (13%) and significant for those 3 to 5 years of age. Black children on Medicaid are between 8% and 15% more likely to have a doctor checkup (and these effects are significant for children aged 1 through 3 and 5 or older).[25]

There appear to be no significant effects of private health insurance coverage on the probability of a routine checkup except for white children 5 and older. This result may reflect the fact that many private insurance policies do not cover pediatric preventive care (Mitchell and Schurman, 1984) so that children do not receive regular preventive care until they enter the school system.[26]

Turning to the number of illnesses requiring medical attention, white children with insurance are more likely to visit a doctor for an illness than those without any coverage. The

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[25]The F tests for joint significance of Medicaid and its interaction with black are 3.7 and 9.6 respectively.

[26]We expect that one would find a similar result for Well Baby care were we able to examine the effect of private insurance coverage. The Alan Guttmacher Institute reports found in a 1987 survey of large insurers which included Blue Cross/Blue Shield that only 50 percent covered routine Well Baby care (AGI, 1988).

benefits of insurance are essentially the same for both those with private coverage and those with Medicaid. Among white children who are 1 to 3 years old these effects are large and significant: those with some insurance coverage are estimated to receive half a visit more than children who have no coverage. This estimate is very similar to the impact of Medicaid on doctor visits during infancy, reported in Table 2. The benefits of both private insurance and Medicaid tend to dissipate with age and are not statistically significant for school-aged children.

In contrast, neither the sum of the Medicaid coefficient and the interaction between black and Medicaid nor the sum of the private insurance coefficient and its interaction is significantly different than zero for any age group which indicates that neither Medicaid coverage nor private insurance coverage has any effect on the number of doctor visits for blacks. In fact, among children aged 1 through 3 who are covered by private insurance, black children have significantly fewer visits than white children.

The positive estimated coefficients on permanent income, the mother's highest grade, and AFQT score, and the negative signs on the indicator for being in the poverty sample, indicate that as discussed above, the reported number of illnesses requiring medical attention is positively associated with socio-economic status and hence is a measure of access to care rather than just morbidity.

We also estimated models similar to those reported in Table 4, which included whether or not the child was the firstborn, the mother's age at first birth and indicators of her employment and marital status. Instead of birth weight, we included an indicator equal to one if the child had a disability. The results of these experiments were similar to those of Table 4

in that although some of the new covariates were statistically significant,[27] the coefficients on the variables of interest were little changed.

Changes in the probability of a routine checkup and in the number of illnesses requiring medical attention with changes in Medicaid and private insurance status are shown in Table 5. These changes are the differences for the same child between 1988 and 1986.

The first panel of Table 5 shows changes in percentages of white and black children in various categories by changes in Medicaid status. Both white and black children who lost Medicaid status were least likely to have gained and most likely to have lost a routine checkup relative to children who gained coverage or experienced no change in coverage. White children were least likely to have gained a visit if they lost coverage and vice-versa, but there is little effect of changes in Medicaid coverage on the probability that a black child gained or lost visits.

Racial differences in the pattern of changes in the mother's marital and employment status with changes in Medicaid status are less pronounced than they were in the sibling data -- the largest difference is that white children who gained Medicaid were more likely to have mothers that had lost a spouse than black children.

The second panel of Table 5 shows changes in key variables by changes in private insurance status. In general, patterns associated with changes in private insurance status are less pronounced than the patterns associated with changes in Medicaid status. However, it is interesting to note the pattern of income changes:[28] families of children who lost private

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[27]In particular, the estimates indicated that children who have a disability receive much more medical attention than those who do not.

[28]Here we use contemporaneous income in 1986 and 1988.

insurance status typically lost income while those who gained private insurance gained income. The pattern is the opposite for children who gained or lost Medicaid coverage which indicates that if gaining Medicaid and gaining private insurance coverage have similar effects on medical care, it is unlikely to be due only to an income effect of the Medicaid program.

Models of the probability of a routine checkup and the number of illnesses that control for child-specific fixed effects are shown in Table 6. The models of routine checkups are estimated using Chamberlain's conditional logits, while the models of the number of illnesses are estimated using OLS on first differences. Unlike the mother fixed effects models in Table 3, these estimates control for both unobserved characteristics of the mother and unobserved characteristics of the child.

The estimates shown in columns (1) and (2) of Table 6 indicate that whether or not income, marital status, and maternal employment are controlled for, Medicaid coverage increases the probability that a child received a routine checkup in the past 6 months by 10 to 12%. The point estimate for blacks is 7% but the black-Medicaid interaction is not statistically significant. This result can be compared to the average effect (across the three age groups) of 7% for white children and 11% for black children obtained by OLS in Table 4. In either case, we are unable to reject the null hypothesis that the effect of Medicaid coverage is the same for white and black children. The fact that private insurance coverage is not estimated to have a significant effect on the probability of a checkup is also consistent with the OLS results in Table 4.

The significant coefficient on employment in column (2) indicates that other things being equal, maternal employment decreases the probability that a child received a routine checkup by

7 to 8%. Presumably, this result reflects an increase in the opportunity cost of the mother's time.

Ordinary least squares estimates of the change in the number of illnesses requiring medical attention between 1988 and 1986 on changes in the child's insurance status are shown in columns (3) and (4) of Table 6. These estimates indicate that whether or not changes in the mother's income, employment, or marital status are controlled for, both Medicaid coverage and private insurance coverage are associated with increases in the number of doctor visits for white children, but not for black children. The point estimate of about half a visit is similar to that obtained in Tables 2, 3, and 4.

The results shown in column (4) also indicate that having the mother gain a spouse is associated with a loss of a fifth of a doctor's visit -- This result is consistent with several studies in demography that suggest that separation of parents is associated with increased utilization of medical services (see, for example, Mauldon, 1990).

VI Discussion and Conclusions

The striking similarity between our OLS estimates and fixed effects estimates of the effects of Medicaid and private insurance coverage suggest that in this example, there is little bias involved in using OLS.[29] If this conclusion is accepted, then we can state our results as follows. First, Medicaid coverage increases the probability that all children receive regular

[29] Other researchers have used OLS on cross sections to investigate the effects of Medicaid coverage on medical care (c.f. Colle and Grossman, 1978; Decker, 1992). Our results suggest that their estimates may also be relatively free of bias due to unobserved heterogeneity.

preventive care in the form of routine checkups. Second, Medicaid coverage *decreases* the probability that black children receive timely Well Baby care and increases the number of doctor visits for illness only for white children.

In our opinion, the most likely explanation for this pattern of results is that white and black children on Medicaid receive care from different sources -- we find that black children on Medicaid are 23 to 38% less likely to receive care from a private doctor than white children on Medicaid, and that overall, black children on Medicaid are least likely to see private doctors. This difference is almost entirely explained by differences in observables such as education and permanent income rather than by Medicaid coverage *per se*. Hence, it seems that the Medicaid program has little impact one way or the other on access to private physicians care. A limitation of our methodology is that it focuses on the care of an individual child given the community's health care resources -- but it is silent regarding the effect of the Medicaid program on the provision of services. Previous research has shown that private doctors are more likely to participate in the Medicaid program in high fee states (c.f. Decker, 1992). It would be interesting to know how the Medicaid program affects the quality of care in the clinics and emergency rooms that poor black children rely on.

It is easy to imagine that even at a crowded clinic a parent could make an appointment for a doctor's checkup 6 months in advance -- but it might be much more difficult and/or time consuming to get unscheduled appointments for a sick child. Alternatively, it may be the case that many black children attend clinics which provide indigent care to uninsured sick children. This would mean that Medicaid conferred little advantage to an individual child in terms of access to visits for illness although it might well be that Medicaid payments provided essential

support to the clinic. Given that many of the sample children became eligible for Medicaid at birth, delays in processing applications, combined with difficulties in getting an initial appointment could also account for the fact that black children on Medicaid are less likely than other children to receive Well Baby care in the first month of life.

In any case, our results suggest that expansion of coverage alone will not eliminate racial disparities in access to care. Ensuring equal access to health care may also depend on improving the provision of services to minority communities.

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Table 1: Characteristics of the Sample Children in the First Year of Life

	White		Black	
Covered by Medicaid?	No	Yes	No	Yes
Child characteristics				
% Male	48	51	49	50
% First born	56	39	57	39
% Birth weight lt 2500 gms.	7	10	14	14
Age in months, 1988 survey	73.08	69.57	89.86	70.20
Mother characteristics				
Mother age, first birth	20.30	18.87	18.63	18.40
% Spouse or partner at birth	68	38	33	12
HH permanent income*	10.82	5.44	7.17	4.29
% From Poverty sample	43	59	72	73
Top education grade in 1988	11.80	10.85	12.09	11.62
AFQT score	1.09	.89	.83	.77
% Employed	37	15	29	13
% Living in urban area at 14	77	82	76	82
Community characteristics				
County per capita income	7.32	7.53	7.19	7.15
Doctors per 1000 state res.	1.92	2.02	1.88	1.78
Hosp. beds per 1000 st. res.	5.58	5.55	6.01	5.87
State infant mortality rate	11.09	10.78	12.63	12.09
# Observations	3715	648	1257	670

Notes: * Mean real household income over 1978 to 1988 period.

Table 2: Medicaid and Medical Care in the First Year of Life - OLS

	(1) Well Baby care	(2) # Visits for Illness	(3) Private Doctor
Intercept	-.432	-.204	-.772
	(.209)	(1.451)	(.235)
Black	.097	.016	.038
	(.326)	(2.269)	(.394)
Medicaid	-.008	.441	.038
	(.026)	(.178)	(.028)
Black * Medicaid	-.054	-.455	-.065
	(.040)	(.277)	(.048)
Mother Characteristics:			
Log Permanent Income	.049	.091	.103
	(.018)	(.122)	(.020)
Black * Log Income	-.043	.039	-.052
	(.030)	(.206)	(.036)
Poverty Sample	-.030	-.275	-.002
	(.018)	(.126)	(.020)
Black * Poverty	-.005	.136	.007
	(.035)	(.241)	(.042)
Top Grade in 88	.018	.050	.004
	(.005)	(.037)	(.006)
Black * Top Grade	-.004	-.002	.003
	(.011)	(.076)	(.014)
AFQT Score	.119	.276	.058
	(.032)	(.224)	(.037)
Black * AFQT Score	.092	-.620	.019
	(.066)	(.459)	(.080)
Urban at Age 14	.007	-.047	-.012
	(.021)	(.144)	(.023)
Black * Urban	.009	-.170	.010
	(.040)	(.279)	(.049)
Child Characteristics:			
Male	.008	-.290	-.043
	(.017)	(.117)	(.019)
Black * Male	.006	.322	.042
	(.031)	(.217)	(.037)
Age in Years in 1988:			
1 to 3	.045	.951	.536
	(.032)	(.221)	(.035)
Black * 1 to 3	.063	-.729	-.060
	(.057)	(.398)	(.072)
3 to 5	.125	-.042	.494
	(.028)	(.195)	(.031)
Black * 3 to 5	.012	.298	-.045
	(.050)	(.345)	(.060)
5 to 7	.072	-.113	.085
	(.025)	(.175)	(.027)
Black * 5 to 7	.018	.272	-.040
	(.045)	(.311)	(.052)
R-Square	.076	.033	.279
Observations	4702	4621	2627

Notes: Standard errors in parentheses. All regressions also include: county income per capita; number of physicians and number of beds per 1000 state residents; state infant mortality rates; dummy variables for residence in the Northeast, South, or West; and interactions of all these variables with the indicator for black.

Table 3: Differences in the Medical Care of Siblings in the First Year

Panel A: Change in Medicaid Status Between Births

	Lost Med.		No Change		Gained Med.	
	White	Black	White	Black	White	Black
Well Baby Care						
% Gained	24.36	24.07	18.94	18.38	18.28	15.49
% Lost	11.54	22.22	19.90	18.16	22.58	26.76
Doctor's Visits for Illness						
% Gained	39.74	31.48	36.10	31.95	36.56	30.99
% Lost	29.49	37.04	32.07	30.42	38.71	25.35
Private Doctor						
% Gained	33.33	41.67	33.63	24.32	40.00	42.86
% Lost	15.15	16.67	16.48	13.51	22.86	7.14
Mother's Job						
% Gained	20.51	37.04	13.70	12.69	11.83	7.04
% Lost	5.13	7.41	14.83	10.94	13.98	14.08
Spouse						
% Gained	46.15	33.33	21.84	17.94	13.98	12.68
% Lost	6.41	1.85	4.19	1.97	12.90	5.63
% of Diffs Involving First Born	60.26	61.11	66.16	52.52	60.22	71.83
Change in Income[1]	3.57	4.10	1.76	1.76	-.50	.62
	(5.94)	(4.76)	(4.69)	(3.74)	(3.37)	(2.27)
# Observations						
Full sample	78	54	1241	457	93	71
Conditional on at least one visit	33	12	443	111	35	14

Panel B: OLS and Conditional Logit Results

	Well Baby Care C. Logit		# Doctor Visits OLS 1st diffs		Private Doctor C. Logit	
	(1)	(2)	(3)	(4)	(5)	(6)
Medicaid	-.172	-.144	.340	.402	-.218	-.206
	(.275)	(.281)	(.344)	(.348)	(.495)	(.516)
Black * Medicaid	-.105	-.045	-.552	-.613	-.403	-.468
	(.426)	(.441)	(.530)	(.545)	(1.302)	(1.600)

Notes: Fixed effects regressions include dummies for age and first born in odd columns; even columns also include controls for presence of spouse, employment of mother and income. All covariates in all cases are interacted with an indicator for black.

Table 4: OLS Estimates of the Effect of Medicaid and Private Insurance on the Health Care of Older Children

	Routine Checkup			Visits for Illness		
	(1)	(2)	(3)	(4)	(5)	(6)
Age in Years:	1-3	3-5	5-9	1-3	3-5	5-9
Intercept	.226	.712	.104	-.212	1.806	.530
	(.237)	(.290)	(.290)	(1.667)	(1.114)	(.937)
Black	.238	-.027	-.406	-3.674	-2.697	-1.242
	(.387)	(.482)	(.447)	(2.723)	(1.854)	(1.443)
Medicaid	.044	.133	.043	.565	.253	.176
	(.036)	(.039)	(.037)	(.254)	(.152)	(.121)
Black * Medicaid	.051	-.052	.102	-.595	-.195	-.110
	(.061)	(.069)	(.060)	(.431)	(.265)	(.193)
Private Ins.	.031	.005	.069	.459	.314	.171
	(.028)	(.033)	(.032)	(.194)	(.125)	(.102)
Black * Private	-.008	-.044	-.046	-.765	-.231	-.141
	(.054)	(.063)	(.056)	(.377)	(.242)	(.180)
Mother Characteristics						
Permanent Income	-.004	-.057	-.040	.122	-.149	-.047
	(.023)	(.027)	(.027)	(.159)	(.105)	(.089)
Black * Income	.034	.005	.041	.353	.195	.158
	(.039)	(.048)	(.044)	(.272)	(.184)	(.142)
Poverty Sample	-.023	-.040	-.037	-.282	.035	-.338
	(.022)	(.026)	(.025)	(.155)	(.101)	(.082)
Black * Poverty	-.001	.010	-.040	-.213	-.025	.201
	(.044)	(.052)	(.046)	(.313)	(.200)	(.150)
Top Grade in 88	.021	.019	.017	.063	.027	.072
	(.006)	(.008)	(.008)	(.044)	(.031)	(.025)
Black * Top Grade	-.014	-.004	.019	.016	.017	-.086
	(.014)	(.017)	(.015)	(.097)	(.064)	(.047)
AFQT	-.031	-.061	-.159	.545	.484	.187
	(.039)	(.048)	(.045)	(.276)	(.183)	(.146)
Black * AFQT	-.010	.125	.154	-.041	-.362	.101
	(.086)	(.100)	(.085)	(.607)	(.384)	(.274)
Urban at 14	.001	.034	-.005	.007	-.046	.144
	(.026)	(.030)	(.028)	(.180)	(.116)	(.092)
Black * Urban	-.006	.036	.053	-.037	.192	-.127
	(.050)	(.060)	(.052)	(.351)	(.230)	(.167)
Child Characteristics:						
Male	-.001	-.042	-.013	-.377	-.096	.044
	(.020)	(.024)	(.023)	(.143)	(.093)	(.075)
Black * Male	.015	.009	.015	.517	.153	-.051
	(.039)	(.046)	(.041)	(.276)	(.178)	(.133)
R-Squared	.035	.044	.033	.049	.030	.035
# Observations	2183	2260	2642	2183	2260	2642

Notes:

Standard errors in parentheses. All regressions also included: County income per capita; the number of physicians per 1000 state residents; the number of hospital beds per 1000 state residents; the state infant mortality rates; dummy variables for residence in the northeast, south, or west; an indicator equal to one if the data came from the 1986 survey and zero otherwise; and interactions of all these variables with the indicator for black.

Table 5: Differences in the Medical Care of a Given Child, 1988-1986

Panel A: Change in Medicaid Status

	Lost Med.		No Change		Gained Med.	
	White	Black	White	Black	White	Black
Checkup						
% gained	9.94	12.20	26.43	17.27	18.12	18.75
% lost	30.14	24.39	26.43	21.99	20.29	21.88
# Visits						
% gained	11.70	14.63	23.83	15.72	26.81	11.46
% lost	36.84	17.68	51.46	22.51	11.70	19.79
Mother Job						
% gained	39.18	39.02	17.98	13.98	9.42	12.50
% lost	2.92	3.05	11.40	7.61	24.64	17.71
Spouse						
% gained	16.37	13.41	6.59	6.58	5.80	5.21
% lost	8.19	7.93	7.71	8.53	42.75	31.25
Change in Income	2.68	1.09	.65	.10	-.51	.17
# Observations	171	164	2308	973	138	96

Panel B: Change in Private Insurance Status

	Lost Ins.		No Change		Gained Ins.	
	White	Black	White	Black	White	Black
Checkup						
% gained	13.13	20.66	15.06	16.53	14.70	14.67
% lost	22.22	21.49	26.79	22.14	26.22	24.00
# Visits						
% gained	17.68	19.83	24.28	14.55	19.88	16.00
% lost	36.87	19.83	32.77	21.83	36.02	22.00
Mother Job						
% gained	19.70	14.88	17.47	15.28	27.09	31.33
% lost	20.71	14.88	10.86	7.28	10.37	5.33
Spouse						
% gained	4.04	1.65	6.61	7.17	12.39	13.33
% lost	19.19	17.36	9.22	9.36	6.34	10.00
Change in Income	-.67	-.25	.62	.03	2.09	1.92
# Observations	198	121	2072	962	347	150

Table 6: OLS and Conditional Logit Results for Health Care of Older Children

	Routine Checkup C. Logit		Visits for Illness OLS First Diffs.	
	(1)	(2)	(3)	(4)
Intercept	...	...	.583	.587
			(.183)	(.183)
Black	...	...	-.332	-.333
			(.344)	(.344)
Medicaid	.499	.421	.446	.425
	(.193)	(.198)	(.136)	(.139)
Black * Medicaid	-.207	-.208	-.580	-.641
	(.296)	(.304)	(.209)	(.214)
Private Insurance	-.120	-.098	.366	.379
	(.143)	(.144)	(.103)	(.103)
Black * Private Ins.	-.003	-.007	-.485	-.460
	(.256)	(.258)	(.186)	(.187)
Spouse Present	...	-.019	...	-.171
		(.163)		(.113)
Black * Spouse	...	-.389	...	-.097
		(.301)		(.196)
Employed	...	-.320	...	.073
		(.117)		(.084)
Black * Employed	...	.170	...	-.314
		(.219)		(.163)
Income (1000's)	...	-.004	...	-.005
		(.008)		(.006)
Black * Income	...	-.008	...	-.008
		(.017)		(.011)
Log Likelihood	-1075	-1070	...	...
R-Squared	...	...	.024	.023
# Pairs Obs.	3850	3850	3849	3849

Notes:
Standard errors in parentheses.

Appendix Table 1: Questions from the NLSY Supplemental Fertility File

	1ST PREGNANCY SINCE DATE OF 1988 OR PRIOR INTERVIEW	2ND PREGNANCY SINCE DATE OF 1988 OR PRIOR INTERVIEW
192. In (1ST CHILD/2ND CHILD)'s first year, did you take (him/her) to a clinic, hospital, or doctor because (he/she) was sick or injured?	Yes.(GO TO Q.193).. 1 No..(SKIP TO Q.212, PG.9-129)..... 0 21-22/	Yes.(GO TO Q.193).. 1 No..(SKIP TO Q.212, PG.9-129)..... 0 35-36/
196. In (1ST CHILD/2ND CHILD)'s first year, altogether how many visits were made to a clinic, hospital, or doctor because (he/she) had (ILLNESS OR INJURY NAMED IN Q.193, PAGE 9-127)?	Once (GO TO Q.208) 01 OR |__|__| 45-46/ NUMBER OF TIMES (GO TO Q.207)	Once (GO TO Q.208) 01 OR |__|__| 51-52/ NUMBER OF TIMES (GO TO Q.207)
202. In (1ST CHILD/2ND CHILD)'s first year, did you take (him/her) to a clinic, hospital, or doctor because (he/she) was sick or injured with a different illness or injury than the one we have just talked about?	Yes..(GO TO Q.203). 1 37-38/ No..(SKIP TO Q.212, P.9-129)..... 0	Yes..(GO TO Q.203). 1 09-10/ No..(SKIP TO Q.212, P.9-129)..... 0
206. In (1ST CHILD/2ND CHILD)'s first year, altogether how many visits were made to a clinic, hospital, or doctor because (he/she) had (ILLNESS OR INJURY NAMED IN Q.203, PAGE 9-127)?	Once (GO TO Q.208) 01 OR |__|__| 45-46/ NUMBER OF TIMES (GO TO Q.207)	Once (GO TO Q.208) 01 OR |__|__| 51-52/ NUMBER OF TIMES (GO TO Q.207)
208. (HAND CARD 80). Please look at this card. In (1ST CHILD/2ND CHILD)'s first year when you took (him/her) to a clinic, hospital or doctor because (he/she) had (ILLNESS/INJURY FROM Q.203, PAGE 9-127), where did you take (him/her)? CODE ALL THAT APPLY. | HAND | | CARD | | 80 |	Private doctor's office..... 01 55-56/ Public clinic..... 02 57-58/ Private clinic..... 03 59-60/ Health Maintenance Organization (HMO)..... 04 61-62/ Hospital clinic, walk-in clinic.... 05 63-64/ Community health center..... 06 65-66/ Emergency room out-patient..... 07 67-68/ Other (SPECIFY) _____ 08 69-70/ Hospital admission..... 09 71-72/	Private doctor's office..... 01 17-18/ Public clinic..... 02 19-20/ Private clinic..... 03 21-22/ Health Maintenance Organization (HMO)..... 04 23-24/ Hospital clinic, walk-in clinic.... 05 25-26/ Community health center..... 06 27-28/ Emergency room out-patient..... 07 29-30/ Other (SPECIFY) _____ 08 31-32/ Hospital admission..... 09 33-34/

Appendix Table 1 (con't)
Questions from the NLSY Supplemental Fertility File

	1ST PREGNANCY SINCE DATE OF 1988 OR PRIOR INTERVIEW	2ND PREGNANCY SINCE DATE OF 1988 OR PRIOR INTERVIEW
Now we are going to discuss well baby care.		
212. In (1ST CHILD/2ND CHILD)'s first year, did you take (him/her) to a clinic or doctor for well baby care when (he/she) was not sick?	Yes..(GO TO Q.213, PAGE 9-130).... 1 15-16. No..(SKIP TO Q.215, PAGE 9-131)..... 0	Yes..(GO TO Q.213, PAGE 9-130).... 1 41-42/ No..(SKIP TO Q.215, PAGE 9-131)..... 0
213. How many months old was (1ST CHILD/2ND CHILD) when you took (him/her) to a clinic or doctor for well baby care the first time?...How old was (he/she) the next time?	98 |_|_| 43-46/ (DON'T KNOW) (SKIP TO Q.214A)	98 |_|_| 29-32/ (DON'T KNOW) (GO TO Q.214A)
(CODE ALL THAT APPLY.)	MONTH (Q.213) PLACE (Q.214)	MONTH (Q.213) PLACE (Q.214)
	01 |_|_| 47-50/	01 |_|_| 33-36/
	02 |_|_| 51-54/	02 |_|_| 37-40/
	03 |_|_| 55-58/	03 |_|_| 41-44/
→ INTERVIEWER NOTE: CONTINUE TO ASK UNTIL THE LAST TIME IS CODED. THEN GO TO Q.214.	04 |_|_| 59-62/	04 |_|_| 45-48/
	05 |_|_| 63-66/	05 |_|_| 49-52/
	06 |_|_| 67-70/	06 |_|_| 53-56/
	07 |_|_| 71-74/	07 |_|_| 57-60/
	BEGIN DECK 48	
	08 |_|_| 09-12/	08 |_|_| 61-6
	09 |_|_| 13-16/	09 |_|_| 65-68/
		BEGIN DECK 49
	10 |_|_| 17-20/	10 |_|_| 09-12/
	11 |_|_| 21-24/	11 |_|_| 13-16/
	12 |_|_| 25-28/	12 |_|_| 17-20/

Appendix Table 1 (con't)

Questions from the National Longitudinal Survey Child Mother File

9. During the past 12 months has (CHILD) had any illnesses that required medical attention or treatment?

Yes.....(ASK A)..... 1 25/
No..... 0

A. How many such illnesses has (CHILD) had in the past 12 months? (RECORD NUMBER.)

|___|___| 26-27/
NUMBER OF ILLNESSES

10. When did (CHILD) last see a doctor for a routine health checkup?

Less than 1 month ago..... 01

1 - 3 months ago..... 02

4 - 6 months ago..... 03

7 - 11 months ago..... 04

1 year - 23 months ago.... 05

2 or more years ago..... 06

Never..... 07 28-29/

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14. Is (CHILD)'s health care now covered by health insurance provided either by an employer or by an individual plan that pays part or all of a hospital, doctor's, or surgeon's bill? [THIS DOES NOT INCLUDE PUBLIC ASSISTANCE HEALTH CARE PROGRAMS.]

Yes..... 1 33/
No..... 0

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15. There is a national program called Medicaid that pays for health care for persons in need. Is (CHILD)'s health care now covered by Medicaid?

Yes..... 1 34/
No..... 0
