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*Abstract:*

We estimate the effect of poor child health on the labor supply of new fathers post welfare reform, using a national sample of mostly unwed parents and their children--a group at high risk of living in poverty. We address the potential endogeneity of child health and find that having a young child in poor health reduces the father's probability of being employed by eight percentage points and that it reduces his work effort by over five hours per week. These results add to a growing body of literature suggesting that young children with serious health problems are likely to receive lower levels of health investment than their healthier peers.

## **Introduction**

A growing body of research reveals that not only does low income lead to poor child health, but that poor child health has deleterious effects on family resources that may contribute to health and economic disadvantages over the life course. Corman & Kaestner (1992), Mauldon (1992), and Joesch & Smith (1997) found that married couples are more likely to divorce when their child has a serious health problem. Reichman, Corman & Noonan (forthcoming) found that one-year-old children with serious health problems are less likely than their healthy peers to live with their fathers and that their parents' relationship commitment is more likely to have declined since they were born.

Parents' earnings, which are an important financial resource for most children, are in part a function of parents' employment status and number of hours they work. Having a child in poor health imposes additional time and financial constraints that might lead to changes in parents' labor supply. An extensive literature on the effects of child health on mothers' labor supply indicates that having children in poor health reduces mothers' labor force participation, and if they are employed, the number of hours they work (see Powers 2003 and Corman, Noonan & Reichman forthcoming). The effects are stronger for unwed mothers than they are for married mothers (Corman, Noonan & Reichman forthcoming). These results suggest that mothers with children in poor health reduce time spent in the labor market in order to care for their children. This substitution effect could potentially apply to fathers as well as mothers. However, the effect of child health on paternal labor supply has remained largely unaddressed, possibly due to limitations of most existing data sets.

Willis (1999) theorized that low-income men may choose to father children out of wedlock and to multiple mothers who are the main or sole sources of support for their children.

Based on this theory, having children in poor health may not affect the labor supply of low-income fathers because many would not support their children, under any circumstances. Recent findings, however, indicate that many unwed fathers are involved with the mothers of their children and that they also provide financial support. Approximately two-fifths of children born out-of-wedlock have parents who are living together at the time of the birth (Bumpass & Lu 2000 and McLanahan et al. 2003), and another two-fifths have parents who, although not co-residing when they are born, are actively involved with one another (McLanahan et al. 2003). In addition, the majority of unwed fathers provide financial support to the mothers and children, at least during the first year of their child's life (Nepomnyaschy 2003). The implications of these findings are that most unmarried mothers are not single parents and that unwed fathers' behaviors and earnings may have important implications for the level of health investments their children receive.

Determinants of the labor supply of young men with low levels of education are of recent interest because the labor supply of this group has been declining. In this study, we estimate the effect of having a child in poor health on the labor supply of new fathers, using data from a national birth cohort study that oversampled unmarried parents in the post-welfare-reform era. Unlike most other data sets in which non-custodial fathers are underrepresented, the child is the unit of analysis in this study and the birth triggered the inclusion of both the mother and the father in the sample. We control for both the potential endogeneity of child health and a rich set of covariates, including a detailed characterization of the parents' relationship status at the time of the birth; whether the parents have other children together, as well as with other partners; measures of both parents' human capital, including whether the father has ever been convicted of a crime; and characteristics of local labor markets. The results have implications for our

understanding of the processes underlying children's health and income trajectories in low-income families. They also contribute to the literature on the determinants of paternal labor supply in general, and among low-wage fathers in particular.

## **Background**

There has been very little research on the specific question we address: Does poor child health affect the labor supply of the father? However, there is a rich body of research that relates to our more general assessment of the labor supply of young men, particularly those with low levels of education. We describe the relevant literature below.

### *Trends in Male Labor Supply*

There has been significant interest in explaining the drop in male labor supply since the 1970s. Research by Juhn (1992), Juhn & Murphy (1997), Welch (1997), and Pencavel (1997) all found that male labor supply has declined since the mid-1970s, due largely to a drop in real wages. They also found that the decline in labor supply was the greatest for men with the lowest levels of wages and education. These findings suggest that men with low levels of education and wages have elastic labor supply responses, and that they might be more likely than men with higher levels of education and wages to adjust their hours of work in response to a negative event such as the birth of an unhealthy child.

In the context of a recent study of white males, Devereux (2003) claimed that the wage elasticities implied by the studies cited above are not supported by the empirical evidence and that the declines in labor supply, particularly among men with low levels of education, are consistent with a shift in, rather than a movement along, the labor supply curve. He cited the following possible reasons for the decline in labor supply for men with low levels of education:

increased criminal activity, declining marriage rates, and increasing wages and labor supply of women.<sup>1</sup>

Others have examined criminal activity as an alternative to legal labor market work. Bound and Freeman (1992) examined the relationship between criminal activity and male labor supply within a more general examination of reasons for the earnings and employment declines for young black men in the 1980s. They found that rates of incarceration for young black men who dropped out of high school have increased substantially, and that black men who are high school dropouts and who have previously been incarcerated are far less likely to be employed than their never-incarcerated peers. They estimated that criminal records account for over two-thirds of the decline in the employment rate of black high-school dropouts. These results underscore the importance of considering criminal histories when examining the labor supply of men with low levels of education.

#### *Labor Supply of Nonresidential Fathers*

Robertson (1997) examined the labor supply of nonresidential fathers using the National Longitudinal Survey of Youth (NLSY). Consistent with the research cited above, he found that men with lower levels of education have weaker labor force attachment. Controlling for a variety of factors such as education, experience, ability, and local labor market conditions, Robertson found that nonresidential fathers work less than both residential fathers and men who are not fathers--about 110 fewer hours per year. He noted that this figure may be an underestimate, since nonresidential fatherhood may be underreported by fathers in the NLSY.

A related literature has looked at the effect of child support on fathers' labor supply. If child support obligations are viewed by nonresidential fathers as a tax on their earnings, child

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<sup>1</sup> Findings of Juhn and Murphy (1997) that the largest female labor supply increases took place among the most educated women, whereas the largest male labor supply declines were for the least educated men, suggest that trends

support enforcement could serve either as an incentive (through an income effect) or a disincentive (through a substitution effect) to work. The empirical evidence on this issue is mixed, with existing studies finding positive, negative, or no effects of child support enforcement on father's labor supply.

Bitler (2002) found that having to pay child support may increase hours worked, although magnitudes and significance were sensitive to model specification. In a review of qualitative research, Waller & Plotnick (2001) cited four studies reporting that low-wage fathers often either quit their jobs or reduce their hours of regular work due to formal child support arrangements. They also found that fathers may engage in more unreported work to avoid the high "tax" on legitimate earnings associated with child support. Freeman and Waldfogel (1998) examined the effects of geographic variations in child support enforcement policies on the labor supply of noncustodial fathers, using data from the Survey of Income and Program Participation (SIPP). They found that variations in state enforcement policies do not affect the labor supply of noncustodial fathers.

#### *Disability Benefits and Labor Supply*

Families with a disabled child may be eligible for the Supplemental Security Income Program (SSI) assistance. Of course, adults could also be eligible for SSI because of their own health. Theoretically, this program would create a work disincentive because of its means-tested nature. Indeed, Kubik (1999) found that SSI generosity has a strong negative impact on both work probability and on hours of work among individuals with low levels of education. He found that the work disincentive operates through high marginal tax rates. Other means-tested public programs, such as Medicaid/SCHIP, could also create potential work disincentives.

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in women's wages and labor supply have not been contributing factors.

### *Child Health and Father's Labor Supply*

Only two studies that we know of have examined the effect of child health on the labor supply of fathers. As part of a much broader study of health trajectories of children by family socioeconomic status, Case, Lubotsky & Paxson (2002) explored this issue using data from the 1997 Panel Survey of Income Dynamics (PSID). They found no relationship between having a child in poor health (defined as having been low birthweight or in a neonatal intensive care unit) and paternal labor force participation. Asking a somewhat different question, Roberts (1999) used data from the 1987 National Medical Expenditure Survey to look at the effect of having any family member (not just children) with a mental illness on labor market participation and hours of work on the part of fathers. She found that having a family member with mental illness was associated with a ½ hour per week reduction among men who work.

Because the topic has been largely unaddressed, our hypotheses about the potential mechanisms by which having a child in poor health may affect paternal labor supply are guided by the past research discussed above. Poor child health may increase a father's labor supply due to the greater financial and time costs of raising the child. The father may work more to compensate for the financial resources directly required in caring for the child, the increased child support payments he is required, by law, or the lost earnings of the mother if she reduces her labor supply to care for the child. On the other hand, poor child health might decrease a father's labor supply if he spends a greater amount of time caring for the child. He might also work less to avoid investing in a child that is "lower quality" than had been expected, to avoid increased child support obligations related to the child's health status, or to qualify for means-tested public benefits.

To address these hypotheses, we use the national Fragile Families and Child Wellbeing data to estimate the effects of poor child health on fathers' labor supply. The survey interviewed both mothers and fathers at the time of their children's birth and followed them forward, whether or not they lived with the child. It includes detailed information about the parents' human capital, living arrangements, and multiple partner fertility, as well as their child's health. This urban post-welfare-reform sample includes large proportions of unwed fathers with low levels of education, minority status, and prior criminal convictions, all of which are related to paternal labor supply.

### **Analytical Framework**

We consider the following model to estimate the effect of poor child health on a father's labor supply:

(1) Father's labor supply =  $f$ (Own wage rate, wage rate of child's mother, quality and quantity of children, labor market opportunities, availability of public support,  $\mu$ )

A father's labor supply is a function of his earnings capacity (wage), the child's mother's wage, the quality and quantity of their children (together and with other partners), their labor market opportunities, and the availability of public support. The labor supply function may also contain another set of factors,  $\mu$ , that are unobserved. To estimate this model, we need good measures or proxies for parents' wages, the quantity and quality of their children, and their local labor market opportunities and policy environments. For wages, we use a set of characteristics including age, race/ethnicity, nativity, education, work history, job training, criminal history, and health status. We also include measures of the parents' relationship status, which may play a role in decisions about paternal labor supply. We focus on the labor supply effects of one measure of

child quality—child health, but we also consider the child’s gender. For quantity of children, we include whether the parents have other children together and whether each has children with other partners. For local labor markets, we include job growth, city unemployment rates and average full-time male wages. Finally, we include state fixed effects to capture availability of public support that may vary by state. Because we are interested in father's behavior following the birth of a child in poor health, we hold constant the father's labor supply before the birth of the child.

## **Data**

The Fragile Families and Child Wellbeing Study follows a cohort of new parents and their children in 20 large US cities (in 15 states).<sup>2</sup> Baseline interviews were conducted from 1998 to 2000 with 4,898 sets of new, mostly unwed parents shortly after their children’s births. Baseline response rates were 86 percent among eligible mothers and 78 percent among eligible fathers; 89% of the mothers and 88% of the fathers who completed baseline interviews were re-interviewed when their children were between 12 and 18 months old.

The Fragile Families data are well suited for analyzing the effects of child health on paternal labor supply because they were collected as part of a longitudinal birth cohort study and include: (1) interviews with the fathers regardless of whether they ever lived with their children, (2) considerable detail about fathers’ human capital, including labor force activity, education, job training, military service, and prior criminal convictions; (3) characteristics (e.g., health status) of both fathers and mothers, and (4) detailed information on the parents’ relationship status,

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<sup>2</sup> Additional background on the research design of the Fragile Families and Child Wellbeing Study is available in Reichman et al. (2001).

living arrangements, and other children (together and with other partners) at the time of the birth.

## **Descriptive Analysis**

The purpose of this paper is to estimate the effects of poor child health on fathers' labor supply. Below we describe the measures we use in our analyses, present summary statistics (in Table 1), and point out many salient characteristics of the sample. Unless indicated otherwise, all individual level characteristics are measured at baseline. In general, we use father reports for information about the father and mother reports for information about the mother. However, in cases where father's data are missing, we use mother reports about the father if these are available. We restrict our sample to the 3,029 cases in which there were no missing data on any of the analysis variables.<sup>3</sup>

We estimate the following outcomes: (1) whether the father was employed at the time of the follow-up interview (currently working), and (2) the number of hours that he worked the week prior to the follow-up interview. Table 1 shows that 80 percent of the fathers were employed at the time of the follow-up interview. The average number of hours per week for all fathers (both working and non-working) was 36; the corresponding figure for fathers who were working was 45 hours per week (not shown in table).

We also present the characteristics of the children, fathers, and mothers, as well as other measures that we include in our models. As discussed earlier, we consider several measures of both child quality and quantity. Following the approach of Reichman, Corman and Noonan (forthcoming), we consider a child to have poor health if at least one of the following criteria is

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<sup>3</sup> Since fathers' hours of work come from their own reports (mothers were not asked about this), the sample is limited to cases in which fathers completed follow-up interviews.

met (all are from mothers' reports): the child weighed less than 4 pounds at birth (2.4%);<sup>4</sup> the mother reported at follow-up that the child had a physical disability (2.0%); or, if the child was at least 12 months old at follow-up, the child had neither walked nor crawled (0.8%) (figures not shown in table). We used a stringent definition of low birthweight rather than the typical 5.5-pound cutoff, in order to better identify cases of serious and chronic health problems (many of the heavier low birthweight children do not experience long-term health problems). Almost five percent of the children in our sample meet at least one of these three criteria and are therefore characterized as having poor child health.<sup>5</sup>

We include several additional measures of child quality and quantity that may affect the father's level of commitment to the child and his work effort: the gender of the focal child, whether the parents had any other children together, and whether each parent had at least one child with another partner. Approximately one third of the parents had other children (together) at the time of the focal child's birth; about the same proportion of mothers had at least one child with another partner at that time. About one third of fathers had at least one child with another partner at the time of the mother's follow-up interview, according to mothers' reports.<sup>6</sup>

We go beyond whether the father was present in the mother's household to characterize the parents' relationship at the time of the birth; we consider whether the parents were married, cohabiting, romantically involved or friends, or rarely or never talked. About 70 percent of the new parents were not married at baseline; about 60 percent of the unwed parents lived together. Overall, 98 percent of the parents were in some type of relationship.

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<sup>4</sup> In a separate analysis, we compared mother respondents' reports of birthweight with the corresponding figures from the hospital records for a sub-sample of over 1800 cases. We found exact matches (to the ounce) between the maternal reports in the survey and the entries in the hospital charts in 76% of the cases, and matches within 8 ounces in 94% of the cases. The correlation of babies' birthweight from the two sources was .98. To assure adequate sample sizes for analysis, we used 4 pounds rather than the typical 3.5 pound cutoff used to designate very low birthweight.

<sup>5</sup> The percentages for the individual measures sum to more than 5 because some children fit more than one criterion.

We take advantage of the longitudinal nature of our data by estimating models that control for father's labor supply at baseline, which we characterize by the number of hours he worked per week at the time of the baseline interview. We have baseline information on several characteristics relevant to a father's labor supply: his health status,<sup>7</sup> whether he had served in the military, whether he had attended vocational education, and whether he had ever been convicted of a crime. Given the literature cited above, criminal history is especially relevant when analyzing labor supply of low-income men.

The sample is comprised predominantly of minority parents. Indeed, only 23 percent of the fathers are white and non-Hispanic. About 30 percent of the fathers did not complete high school, and one in six had been convicted of at least one crime in the past. That said, 36 percent of the fathers had at least some college, over one quarter had vocational training, and 11 percent had served in the military. Over half of the fathers did not live with both parents when they were 15 years old and about 60 percent of the births were covered by Medicaid.

Finally, we include city-level rates of job growth, unemployment rates, and mean full-time wages of males to characterize local labor markets. The mother's baseline state of residence is included to capture state policies and environments that may impact parents' family formation behaviors, reliance on public assistance, and labor supply.

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<sup>6</sup> Data limitations make it impossible to ascertain whether the father had any children with another partner at the time of the baseline.

<sup>7</sup> Rather than dropping the cases with missing self-reported health information for fathers (we do not have mother-reported information on health status of the father), we include a dummy variable indicating missing data on this measure. It is important to note, therefore, that this indicator largely reflects whether the father completed a follow-up interview.

## Modeling Strategy

As discussed earlier, having a child in poor health increases a father's financial and time constraints and, as a result, his labor supply may either increase or decrease. To estimate the effect of poor child health, we operationalize Equation (1) as follows:

(2) Father's labor supply =  $f$ (child health, other measures of child quality, child quantity, mother and father characteristics, city labor market characteristics, state policy and economic environments,  $\mu$ )

Estimation of Equation (2) would be straightforward if the measured child health were truly random (exogenous). It is possible, however, that despite our best efforts at measuring true health shocks, we may capture non-random components of child health that are correlated with unobserved determinants of the father's labor supply ( $\mu$ ) that even the state fixed effects do not eliminate. If so, our measure of child health would be endogenous and its estimated effect on father's labor supply would be biased.

Since we may not be completely successful at characterizing poor child health as a random event, we need to consider causes of possible endogeneity. Consider, for example, the case of a "workaholic father," who may be unavailable to help care for his pregnant partner and work long hours after the child is born. This scenario suggests that poor child health and labor supply would be positively correlated. Another hypothetical example is an "immature father," who may neither invest in the health of his unborn child nor have a strong attachment to the labor market. This latter scenario suggests a negative correlation between poor child health and labor supply. By including baseline values of father's labor supply on the right-hand side, as well as a rich set of covariates intended to capture characteristics related to both child health and father's labor supply, we attempt to eliminate the endogeneity problem. However, because we cannot be

certain that we have been 100 percent successful in doing so, we model our system with two equations, one of which expresses child health as a function of parental characteristics and health care inputs, as follows:

(3) Child Health =  $g$  (mother & father characteristics, prenatal & perinatal health inputs)

### *Paternal labor supply models*

As described earlier, we use two different measures of the father's labor supply: a dichotomous measure of whether or not the father was employed at the time of the follow-up interview (currently working), and a censored measure of the number of the hours the father worked the previous week (some fathers had zero hours).

We test for the endogeneity of child health using a full information maximum likelihood estimator (FIML). In all cases, we assume that the error terms are normally distributed, and allow for correlation between the error terms in the child health and labor supply equations.

For the "currently working" equations, we use a bivariate probit specification because the outcome measures are both dichotomous. If child health is found to be exogenous, then a standard probit is the appropriate model for estimating whether the father was employed. Similarly, we test for the endogeneity of child health in the father's hours of work estimation. If child health is found to be exogenous, then a standard Tobit is the appropriate model.<sup>8</sup>

## **Results**

### *Models of Fathers' Labor Supply*

In Table 2, we present multivariate results for whether the father was currently working and his hours of work. For each outcome, we exclude cases for which we do not have full

information at both waves. Standard errors are corrected for city clustering of observations using the Huber-White method. All models include state fixed effects (results not shown). For both outcomes, we tested for the endogeneity of child health using two-equation estimations described above and were unable to reject the null hypothesis of zero correlation between the error terms in the child health and the father's labor supply equations. Therefore, the single-equation models are appropriate and we present those estimates below.<sup>9</sup>

As indicated earlier, our sample is restricted to cases in which the two parents completed both baseline and follow-up interviews. We excluded 727 cases because the fathers did not complete follow-up interviews and used a Heckman sample selection model to investigate whether our restricted sample is representative of the full sample. Using data on all fathers (results not shown) we found that sample selection does not appear to be a significant problem.<sup>10</sup>

In the second column of Table 2, we present probit estimates for whether the father was employed at the time of the follow-up interview. Because the coefficients in probit models are not easy to interpret, we also present marginal effects in the third column. We find that fathers of children in poor health are eight percentage points less likely to be working than those with children in good health. This represents a ten percent reduction in employment and is highly significant. This large result is at odds with that from the only comparable study, that by Case, Lubotsky & Paxson (2002), who found no significant effects of poor child health on paternal labor supply using the PSID.

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<sup>8</sup> We attempted to estimate a FIML model that treats the hours of work as a censored variable and child health as dichotomous; however, this model would not converge. Therefore, in order to test for the endogeneity of child health we used a FIML model that treats the hours of work as a censored variable and child health as continuous.

<sup>9</sup> The FIML estimates, with full description of the identifiers, are available from the authors upon request.

<sup>10</sup> This is not surprising, given findings by Teitler, Reichman & Sprachman (2003) that fathers in the sample who did not complete interviews at baseline were similar on many observed measures to those who did complete baseline interviews. Note that selectivity models were run for both dependent variables. However, in the selection model for hours, the dependent variable was treated as a continuous rather than a censored variable.

Several of the other right-hand-side variables also have significant impacts on the father's employment status. Interestingly, having any children with another mother reduces the probability that the father is employed, by five percentage points.<sup>11</sup> This result is consistent with the hypothesis that child support may create a work disincentive rather than a positive effect on fathers' employment (see Waller & Plotnick 2001). The parent's non-marital relationship status negatively affects father's employment, although the effect is generally not significant. In contrast, human capital, for which we have very good measures, has very large effects: ever having been convicted of a crime reduces employment by eight percentage points (this is consistent with results of Bound and Freedman, who analyzed trends in male labor supply), and fathers with at least a high school education are three to six percentage points more likely to be working those who did not complete high school. A father in good health is more likely to work, by two percentage points. Poverty, as measured by the mother's Medicaid status at birth, reduces father's probability of employment by five percentage points. Finally, job growth in the city of residence is positively related to father's employment.

In the next columns, we present Tobit coefficients that represent average effects on number of hours fathers worked per week. We find that having a child in poor health reduces fathers' hours of work by an average of 5.7 per week (the Tobit coefficient). This magnitude is large, representing average reductions in hours per week of 16 percent among all fathers and 13 percent among fathers who were employed.<sup>12</sup>

Poverty, as proxied by whether the birth was covered by Medicaid, is associated with a reduction in fathers' work effort by three hours per week. This result is consistent with the

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<sup>11</sup> It is possible that the existence of children by other mothers may not be exogenous (Willis 1999).

<sup>12</sup> In previous research, we found that having a child in poor health reduces the mother's work effort by an average of 5 hours per week (Corman, Noonan & Reichman forthcoming). A supplemental model of parents' combined

previous research indicating that low-wage men have relatively weak labor force attachment. Consistent with that result, we find that college-educated fathers work the greatest number of hours, and those who did not complete high school work the fewest. Controlling for education, having received vocational training also has a positive effect on hours worked. Another human capital indicator, father's very good or excellent health, results in an extra 1½ hours of work per week. Having been convicted of a crime has a large negative impact on labor supply; it reduces fathers' hours worked by six per week, almost a 17 percent reduction. Finally, the existence of children with other partners (either the mother's children with other fathers or the father's children with other mothers) reduces father's hours by over two per week, again possibly supporting the notion that child support may serve as a work disincentive on the part of fathers.

### *Supplemental Analyses*

In this section, we explore the potential mechanisms behind our findings. As discussed earlier, the negative relationship between poor child health and father's hours of work could potentially be due to a substitution of care-giving time for time spent working. We explored this possibility by estimating whether the father spent at least one hour with the child several times per week (using the same set of covariates on the right-hand side).<sup>13</sup> We found that poor child health is not a significant predictor of this measure of time spent—for the sample of fathers overall, for those who were married at baseline, for those who cohabited but were not married, and for those who did not cohabit.<sup>14</sup> These preliminary findings do not support the hypothesis that fathers are substituting care-giving time for market time.

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hours (not shown) indicates that having a child in poor health decreases total hours (the father's plus the mother's) by about 8 per week. Thus, the parents' combined reduction in hours is mostly additive.

<sup>13</sup> We use the mother's report of the time the father spends with the child. Note that about 83 percent of the fathers in our sample spent at least one hour at least several times per week with the child. A better measure would be number of hours spent, but this information is not available in our data set.

<sup>14</sup> The results for time the father spends with his child (not presented) are based on single-equation probit estimates. As we have been unable to find suitable identifiers to test for the endogeneity of child health in these models, we

If fathers of children in poor health are less likely to work in the legal sector in order to obtain greater public benefits or to avoid mandated child support obligations, we would expect the negative effect of poor child health on paternal employment to be greater in states with relatively generous TANF benefits or strict child support policies. Unfortunately, we do not have the data to test these hypotheses directly. Rather, we explored such potential work disincentives by running supplemental models that included state policies instead of state fixed effects, and interacted the policy variables with poor child health (results not shown).<sup>15</sup> We found no evidence that fathers of children in poor health living in states with high TANF benefits or strict child support enforcement are less likely to work. Although these results should be interpreted with caution, since our policy measures are imprecise and may be picking up variations in other state policies, they do suggest that the negative effect of poor child health on fathers' work effort is not due to a policy-induced work disincentive. Rather, it may reflect a father's reduced commitment to invest when a child is of lower quality than expected.

Because the father's reaction to the health of the child may vary depending on the strength of his commitment to the family unit, we also estimated hours of work of fathers who were married, cohabiting but not married, and not cohabiting at baseline (results not shown). We found that married fathers with children in poor health work a greater number of hours than married fathers with children in good health, although the effect is not significant. In contrast, poor child health significantly reduces work effort, by about nine hours, for both groups of unmarried fathers. Thus, it appears that the effects of having a child in poor health on paternal

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therefore consider the results very preliminary.

<sup>15</sup> We did not include a measure of SSI generosity because differences across states are generally small and the program is administered by the Social Security Administration, a federal agency.

labor supply apply to unmarried but not married fathers, and that they do not depend on whether or not the parents cohabited at the time of the birth.

As discussed earlier, researchers have found that labor supply is more elastic for low-wage than high-wage workers. We thus hypothesized that low wage workers would react more strongly to having an unhealthy child. To test this, we stratified our sample by education (some college, versus high school education or less) and whether the birth was covered by Medicaid (in both cases, to proxy low- and high-wage individuals), conducted subgroup analyses, and compared estimates of the effect of poor child health on fathers' hours across groups (results not shown). Whether we used education or Medicaid status to proxy earnings capacity, we found that lower-wage workers with unhealthy children reduce their hours of work significantly more than their higher-wage counterparts. Stratifying by education, we found that poor child health reduces fathers' hours of work by 7 hours per week among the "lower-wage" group compared to an insignificant reduction of 3 hours among the "higher-wage" group. The corresponding effect for fathers for with Medicaid-financed births was over 9 hours per week, compared to an insignificant reduction of 1 1/4 hours per week among fathers with non-Medicaid births.

Finally, we also considered whether our results are confounded by the health status of siblings. If poor child health runs in families, it is possible that (1) the effect on fathers' hours of work we are attributing to the health status of the focal child actually reflects the effect of having multiple unhealthy children, or (2) a father whose focal child is in poor health works fewer hours in order to care for an older unhealthy child. Since our data do not provide health or other quality-related information about the fathers' other children, we tested for potential sibling effects by estimating hours of work among fathers who have no other children. We found that

the effect of poor child health for this group is identical to that for the full sample, ruling out potential confounding effects of siblings.

## **Conclusion**

The purpose of this paper was to ascertain whether father's labor supply is affected by having a young child in poor health. We found that fathers of children in poor health are 8 percentage points less likely to be employed, and that they work an average of 5-6 fewer hours per week than those with healthy children. The effect is stronger for low-wage fathers than for high-wage fathers and for men who are not married to the mothers of their children.

We found no evidence that fathers with unhealthy children work fewer hours in order to spend more time with them, to obtain public benefits, or to avoid child support. Thus, their behavior may reflect fathers' lower level of commitment to seriously unhealthy children. An important area for future research is to further test these different hypotheses.

Placing our results in a broader context, it is increasingly apparent that children in poor health have fewer financial resources than their healthy peers. Not only are they less likely to live with both parents and to have mothers who bring home a paycheck, their fathers also work fewer hours. The negative effect on fathers' work effort is particularly strong for children born to unmarried parents and to low-wage fathers, who have limited resources to invest in their children's health from the outset. Our results strongly suggest that the detrimental effects of poor child health on family resources contribute to the widening socioeconomic disparities in health as children age.

Finally, although our key focus was on the effect of poor child health, we contribute more generally to the literature on determinants of paternal labor supply among relatively young, low-

wage fathers. We highlighted how labor supply in a probability sample of new fathers varies by nonresidential fatherhood status, parental relationship status, non-partner fertility, educational attainment, health status, criminal history, and local labor markets. Our finding that the labor supply of new, mostly unwed fathers so strongly reflects human capital and earnings capacity, which are very low, does not bode well for the health and income trajectories of their children (or their own) in the post-welfare-reform era of limited safety nets.

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**Table 1: Sample Means**

<b>Father is Currently Working</b>	.80	<b>Father's Characteristics (continued)</b>	
		Non-White/Non-Hispanic	.50
<b>Number of Hours Father Works Per Week</b>	35.8 (20.9)	Immigrant	.16
		Lived with Both Parents at Age 15	.45
<b>Child Quality and Quantity</b>		Hours of Work at Time of Birth	34.7 (21.3)
Child is in Poor Health	.05	Health is Very Good or Excellent	.68
Child is Male	.52	Health Status Missing	.06
Parents Have Other Child(ren) Together	.34		
Mother Has Child(ren) with Other Father(s)	.31	<b>Mother Characteristics</b>	
Father Has Child(ren) with Other Mother(s)	.30	Age	25.3 (6.1)
		Less than High School*	.31
<b>Parents' Relationship at Baseline</b>		High School Grad	.30
Married at Baseline*	.30	Some College	.26
Cohabiting	.41	College	.13
Romantic or Friends	.27	Medicaid	.58
Rarely/Never Talk	.02	White/Non-Hispanic*	.25
		Hispanic	.27
<b>Father Characteristics</b>		Non-White/Non-Hispanic	.48
Age	27.8 (7.1)	Immigrant	.16
Less than High School*	.31	Worked Within 2 years Before Birth	.81
High School Grad	.33	Attends Religious Services Several Times/Month	.39
Some College	.24		
College	.12	<b>Local Labor Market and Hospital Characteristics<sup>†</sup></b>	
Attended Vocational School	.28	Rate of Job Growth in City	3.53 (2.50)
Served in the Military	.11	Unemployment Rate in City	5.39 (1.95)
Ever Convicted of a Crime	.17	Average Full-Time Male Earnings in City (dollars)	34,627 (4,706)
White/Non-Hispanic*	.23	Level III NICU in Birth Hospital	.87
Hispanic	.27	<b>Number of Observations</b>	3,029

Notes: Standard deviations in parentheses for continuous variables.

\* Excluded Category in Regression Models

<sup>†</sup> Data on earnings were obtained from the 2000 U.S. Census at the following link: [http://factfinder.census.gov/servlet/DTGeoSearchByListServlet?ds\\_name=DEC\\_2000\\_SF1\\_U&\\_lang=en&\\_ts=73400311652](http://factfinder.census.gov/servlet/DTGeoSearchByListServlet?ds_name=DEC_2000_SF1_U&_lang=en&_ts=73400311652); data on city unemployment rates (in the year baseline interviews were conducted in a given city) and rates of job growth (between 1997 to 1999) were obtained from the US Bureau of Labor Statistics at: <http://www.bls.gov/>; data on Level III NICUs were collected by the authors and verified against data from the American Hospital Association's Annual Survey Database FY1998 (American Hospital Association 1998).

**Table 2:** Effects of Child, Mother, Father, Relationship, and Labor Market Characteristics on Father's Labor Supply

	<b>Father is Currently Working</b>		<b>Father's Hours/Week</b>
	<b>Probit</b>		<b>Tobit</b>
	Coefficient (standard error)	Marginal Effect	Coefficient (standard error)
<b>Child Quality and Quantity</b>			
Child is in Poor Health	-.29** (.11)	-.08	-5.69** (2.12)
Child is Male	-.10** (.04)	-.02	.55 (.97)
Parents Have Other Child(ren) Together	-.03 (.07)	-.01	-.13 (.81)
Mother Has Child(ren) with Other Father(s)	-.02 (.09)	-.01	-2.62*** (.94)
Father Has Child(ren) with Other Mother(s)	-.22*** (.07)	-.05	-2.64*** (.93)
<b>Parents' Relationship at Baseline</b>			
Cohabiting	-.05 (.11)	-.01	.63 (1.26)
Romantic or Friends	-.13 (.11)	-.03	-.88 (1.73)
Rarely/Never Talk	-.37* (.20)	-.10	-1.32 (4.30)
<b>Father Characteristics</b>			
Age	.09*** (.03)	.02	1.02** (.42)
Age Squared	-.00** (.00)	-.00	-.02** (.01)
High School Grad	.14** (.07)	.03	4.75*** (1.32)
Some College	.26** (.11)	.06	6.08*** (1.84)
College Grad	.15 (.14)	.03	6.84*** (1.36)
Attended Vocational School	.02 (.08)	.00	1.57* (.91)

*continued on next page*

**Table 2:** Effects of Child, Mother, Father, Relationship, and Labor Market Characteristics on Father's Labor Supply

	<b>Father is Currently Working</b>		<b>Father's Hours/Week</b>
	<b>Probit</b>		<b>Tobit</b>
	Coefficient (standard error)	Marginal Effect	Coefficient (standard error)
<b>Father Characteristics (continued)</b>			
Served in the Military	.03 (.11)	.01	1.02 (1.75)
Ever Convicted of a Crime	-.32*** (.06)	-.08	-5.99*** (1.56)
Hispanic	.03 (.13)	.01	-.30 (2.04)
Non-White/Non-Hispanic	-.16 (.11)	-.04	-1.77 (2.71)
Immigrant	.25 (.17)	.05	.58 (2.12)
Lived with Both Parents at Age 15	-.14* (.08)	-.03	-1.63* (.89)
Hours of Work at Time of Birth	.02*** (.00)	.00	.38*** (.04)
Health is Very Good or Excellent	.09** (.04)	.02	1.53* (.78)
Health Status Missing	.27** (.11)	.06	9.22*** (1.57)
<b>Mother Characteristics</b>			
Age	-.03 (.05)	-.01	.85* (.51)
Age Squared	.00 (.00)	.00	-.01 (.01)
High School Grad	.01 (.08)	.00	-.29 (1.70)
Some College	.13 (.09)	.03	.93 (1.65)
College Grad	.33** (.13)	.07	1.20 (1.58)

*continued on next page*

**Table 2:** Effects of Child, Mother, Father, Relationship, and Labor Market Characteristics on Father's Labor Supply

	<b>Father is Currently Working</b>		<b>Father's Hours Per Week</b>
	<b>Probit</b>		<b>Tobit</b>
	Coefficient (standard error)	Marginal Effect	Coefficient (standard error)
<b>Mother Characteristics (continued)</b>			
Medicaid	-.24*** (.05)	-.05	-3.19*** (.83)
Hispanic	-.07 (.12)	-.02	1.90 (2.26)
Non-White/Non-Hispanic	-.31** (.12)	-.07	-3.37* (1.82)
Immigrant	.14 (.16)	.03	3.12 (2.62)
Worked Within 2 Years Before Birth	.01 (.09)	.00	-0.91 (1.04)
Attends Religious Services Several Times/Month	-.01 (.04)	-.00	1.14 (.90)
<b>Local Labor Market</b>			
Rate of Job Growth in City	.04*** (.01)	.01	.62*** (.17)
Unemployment Rate in City	-.01 (.04)	-.00	.61 (.51)
Average Full-Time Male Earnings in City	-.02 (.02)	-.00	-.00 (.00)
<b>Number of Observations</b>	3,029		3,029
<b>Log Likelihood</b>	-1,231.01		-11,546.61