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SHORT-RUN EFFECTS OF PARENTAL JOB LOSS ON CHILD HEALTH

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### **ABSTRACT**

[Recent research suggests that parental job loss has negative effects on children's outcomes, including their academic achievement and long-run educational and labor market outcomes. In this paper we turn our attention to the effects of parental job loss on children's health. We combine health data from 16 waves of the Medical Expenditure Panel Survey, which allows us to use a fixed effects specification and still have a large sample of parental job displacements. We find that paternal job loss is detrimental to the physical and mental health of children in low-socioeconomic status \(SES\) families, increasing their incidence of injuries and mental disorders. We separately find that maternal job loss leads to reductions in the incidence of infectious illness among children in high-SES families, possibly resulting from substitution of maternal care for market-based childcare services. Increases in public health insurance coverage compensate for a large share of the loss in private coverage that follows parental displacement, and we find no significant changes in routine or diagnostic medical care.](#)

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## 1 Introduction

During the Great Recession, millions of American workers lost jobs as firms restructured, relocated, downsized, and closed in response to changing demand conditions. From January 2007 through December 2009—a period encompassing the official beginning and end of the recession—nearly one in six US workers experienced job displacement (Farber, 2011). Not only was the rate of job loss significantly higher during this period than during previous postwar recessions, the rate of reemployment was lower and the average duration of unemployment was longer. The severity of the recent economic downturn has generated renewed interest among researchers in the consequences of job displacement for workers and their families.

Though a substantial literature documents the effects of displacement on outcomes such as earnings, employment, health, and fertility for displaced workers, less is known about the consequences of displacement for another group of potential victims—the children of displaced workers. Given that job displacement causes changes in family income, parental time use, and the physical and mental wellbeing of parents, it is likely to alter family dynamics and affect parental investments in children. Recent studies of the effects of job displacement on children’s academic outcomes suggest that this is the case, finding that parental job loss is associated with increased likelihood of grade repetition and worse performance on standardized tests (Ananat et al., 2011; Stevens and Schaller, 2009). Parental job loss has also been found to have long-run effects on children in low-income families, reducing their educational attainment and earnings in adulthood (Oreopoulos et al., 2008; Page et al., 2009). However, the mechanisms by which parental job loss translates into worse outcomes for children in the short and long run are not well understood.

In this paper, we turn our attention to the effects of parental job loss on children’s physical and mental health. While previous work has shown that job loss is associated with increased mortality and worse physical and mental health among adults,<sup>1</sup> only a few papers

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<sup>1</sup>See, for example, Browning and Heinesen, 2012; Schaller and Stevens, 2015; Sullivan and von Wachter,

have examined the effects of parental job loss on children's health and none have looked at the effects of parental job loss on a broad set of health outcomes.<sup>2</sup> Child health is an important outcome because it is both an indicator of current welfare and a predictor of future outcomes including adult health, educational attainment, and earnings, and thus a potential mechanism for the intergenerational transmission of economic shocks (Currie, 2009).

As parental job loss is likely to affect a number of important inputs to child health, the predicted effects are unclear a priori. On one hand, a negative income shock may lead to reductions in medical care utilization and other health investments. On the other hand, an unanticipated period of unemployment may allow parents to take their children to the doctor more often or cause them to substitute parental care for market-based childcare, which may lead to changes in the quality of care and reduce exposure to contagious illness. Along these lines, the medical literature documents a correlation between daycare attendance and infectious illness (see, for example, Beijers et al., 2011; Bradley, 2003; Hardy and Fowler, 1993) and previous research in economics has produced evidence of deleterious effects of maternal employment on child health (Gennetian et al., 2010; Ruhm, 2000; Morrill, 2011). Other mechanisms are also possible. For example, a number of studies have found negative effects of job displacement on outcomes related to adult mental health (for example, Brand et al., 2008; Browning and Heinesen, 2012; Schaller and Stevens, 2015), which might have direct or indirect effects on children's health. Additionally, changes in insurance status or the source of insurance coverage may alter the cost and availability of medical care.

In this study, we exploit unique data from the Medical Expenditure Panel Survey (MEPS) that allow us to examine the reduced-form effects of parental job displacement on several different measures of child health and mental health and to investigate potential mechanisms behind these effects. The MEPS is a large-scale representative survey that collects detailed

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2009

<sup>2</sup>To our knowledge there are only three existing papers on the topic: Liu and Zhao (2014) study the effects of mass layoffs on child height and weight in China, Mork et al. (2013) look at the correlation between parental unemployment and children's hospital stays in Sweden, and Lindo (2011) studies the effects of parental job loss on health at birth using US data.

information on health outcomes, health insurance coverage, and health care utilization for families over a two-year period. To study the causal effects of parental job loss on children's health, we use a large sample of children with displaced parents by combining data from 16 waves of the MEPS covering the period from 1996 through 2012. To limit the effects of endogenous selection and omitted variables bias, we focus on job losses that are plausibly exogenous, including only layoffs, job endings, and business closures, and include child fixed effects in our main specification so that our estimates are identified by changes in health status after displacement for a given child rather than comparisons between the children of displaced workers and children of continually employed workers.

Our results show that both paternal and maternal job loss result in reductions in parent ratings of children's health and mental health. We find that a father's job loss also increases children's incidence of anxiety and depression and we see increases in the incidence of injuries following paternal job loss in low-SES families. By contrast, maternal job loss in high-SES families reduces children's incidence of infectious illness. Though the point estimates change across specifications, these patterns are robust to limiting the definition of job loss to include only firm closures and are generally stronger when we limit the sample to the children of workers who are more securely attached to the labor market at baseline.

Turning to the effects of parental job loss on child health insurance coverage and health care utilization, we find a small but statistically significant reduction in private insurance coverage in the period prior to paternal job loss, which is not surprising in light of previous work showing that male earnings begin to fall prior to displacement (e.g. Jacobson, Lalonde, and Sullivan, 1993). After job loss occurs, increases in public insurance coverage largely counteract the loss of private insurance coverage so that the estimated overall effect on children's insurance coverage after displacement is much smaller than corresponding estimates for adults (see Schaller and Stevens, 2015). We find no significant effects on children's use of routine or diagnostic medical care. We do see evidence, however, of increases in mental health visits after paternal job loss and reductions in prescription drug use after maternal

job loss.

Taken as a whole, our results suggest that, particularly in low-SES families, children's health is vulnerable to the stress associated with paternal job loss. This finding can potentially help to explain the long-term effects of paternal displacement on education and labor market outcomes of children in low-SES families found by Oreopoulos, Page, and Stevens (2008). Among children in more-advantaged families, the negative effects of paternal job loss are weak or nonexistent, and our results suggest that the substitution of parental care for market-based childcare following maternal job loss in families that can afford to do so may actually be beneficial for child health in the short-run.

## **2 Theoretical background**

In the standard model of child health production in economics (Grossman, 2000; Currie, 2009), parents are assumed to maximize an inter-temporal utility function whose arguments in each period are the stock of child health, the consumption of other commodities, and leisure. The health stock in any given period is a function of the health stock of the previous period, its depreciation rate, and the health investments made in the previous period. The health production function depends on both exogenous productivity shifters and permanent individual productivity shifters. Finally, the investment inputs in this production function include material inputs (including health care) and parental time inputs.

Within this framework, there are a few ways in which parental job loss can affect a child's health stock. First, the reduction in income associated with job loss can affect consumption and health investments, such as nutritious food, preventive health care, and the practice of physical exercise. Second, the loss of a job can cause the loss of employer-provided health insurance for the worker and his/her dependents. This will affect both the price and the quality of available health care and may lead to reduced use of health care, especially related to preventive care, treatment of chronic conditions, and purchase of prescription drugs. For children, however, the effects of job loss on health insurance coverage may be mediated

by the availability of the other parent's employer-provided health insurance, as well as the availability and take-up of public health insurance programs such as Medicaid and the State Children's Health Insurance Program (SCHIP).

Job loss may also change the availability of parental time and its allocation towards child health production, especially in the short run. A parent who recently lost a job may spend more time caring for the child, increasing non-market time inputs to health production, which may also increase the amount of health care received by the child (doctor visits, for example). Additionally, increased availability of parental time, combined with a reduced income, may cause children to spend less time in daycare, preschool, or after-school activities, which may reduce their exposure to illness or change their likelihood of incurring injuries. A final avenue by which parental job loss might lead to changes in child health is increased parental stress caused by job loss and the associated income shock. Parental stress might affect child health directly by causing children to experience more stress themselves or it might affect the quality of care that children receive.

The many potential mechanisms discussed above make it unclear whether we should expect job loss to lead to improvement or deterioration in child health on average. We can, however, make predictions about how these effects might vary depending on parent, child, and family characteristics. For one thing, the effects of job loss are likely to depend on the gender of the displaced parent. Research in psychology and sociology suggests that the stress effects of job loss are typically greater when fathers experience involuntary displacement. This is partly because male job loss often results in a larger shock to family income, but has also been attributed to a cultural emphasis on the role of the father as breadwinner. Meanwhile, maternal job loss may be more likely to result in increased time spent with children, as women are more likely to take on home-production and caregiving roles during periods of joblessness (Kalil and Ziol-Guest, 2008).

Another dimension along which the effects of parental displacement may be heterogeneous is child age. Though this type of heterogeneity is difficult to characterize a priori, one point is

worth noting: with outcomes such as infectious illness, for which changes in time use are an important mechanism, it is possible that the effects will be more pronounced among children who are not yet school-aged. At the same time, any differences across age groups will be muted if young children are exposed to infectious illness through parents or older siblings (or vice versa), or if older children are also changing their time use (for example, reducing participation in after-school care or extra-curricular activities) in response to job loss.

Other important sources of potential heterogeneity in the effects of fathers' and mothers' job losses include the number of earners in the family, parental educational attainment, family earnings, and the contribution of the displaced worker's earnings to family income prior to job loss. Single-earner families, and those with less education or lower income may experience more stress upon job loss and are likely to have fewer resources with which to moderate shocks to earnings and insurance coverage. Meanwhile, the displacement of a secondary earner in a family with high socioeconomic status may be less disruptive, both financially and emotionally.

### **3 Related Literature**

The literature on job displacement has only recently started to look at the consequences on children. Previous papers discuss the effects of parental job displacement on children's future earnings, finding different results for different countries and samples.<sup>3</sup> Some papers have looked at how parental job displacement affects educational outcomes of children, finding that it increases the likelihood of grade repetition (Stevens and Schaller, 2011; Kalil and Ziol-Guest, 2008), worsens school performance (Ananat et al., 2011; Rege et al., 2011), and reduces the likelihood of enrolling in post-secondary education (Coelli, 2011). Notably, papers that separately examine male and female displacements typically find negative effects

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<sup>3</sup>Oreopoulos et al. (2008) show that fathers' job displacement has a large negative effect on children's young adult earnings, using data for Canada. Page et al. (2009) only find significant effects for children that initially come from low income households in the U.S., but their sample is small. Bratberg et al. (2008) use administrative data from Norway, a country with a much lower intergenerational correlation of earnings, and find that job displacement reduces future earnings of the worker but not of their children.



following fathers' job losses only (Kalil and Ziol-Guest, 2008; Rege et al. 2011). Meanwhile, those that stratify by income find that the negative effects of parental job displacement are stronger among low-income families (Oreopoulos et al. 2008; Page et al, 2009).

So far, the only paper that has looked at the effects of parental job loss on child health in the US is Lindo (2011). Using data from the Panel Survey of Income Dynamics (PSID), Lindo compares the birth-weight of siblings born before and after a job loss. The results indicate that job displacement of the husband reduces the birth-weight of subsequent children by 4.5%, with larger treatment effects below the median of the birthweight distribution. Other papers have looked at child health effects of job displacements in other countries. Liu and Zhao (2014) look at job displacement in the context of mass layoffs from publicly owned firms in China following the reforms initiated in the 1990s. They find that the father's job loss has a large negative impact on height and weight of children, whereas they don't find evidence of an effect of mother's job loss. Mork et al. (2013) look at the effect of parental unemployment on child health outcomes using administrative data from Sweden. They find that children with unemployed parents are 1 percent more likely to be hospitalized in the same year as the job loss, and 5 percent more likely in the long run. However, due to data limitations they are not able to separately identify the effects of plausibly exogenous job displacement from all causes of job loss.

The evidence on the effects of job displacement on adult health is more abundant. Our paper is closest in methods to Schaller and Stevens (2015). Using data from the MEPS, they look at the effect of involuntary job loss on a worker's health outcomes in the short-run. They find that job loss has substantial negative effects on mental health and that it increases the likelihood of activity limitations and fair or poor self-reported physical health. However, they find no effects on the likelihood of reporting a number of specific chronic health conditions, including arthritis, diabetes, high cholesterol, and hypertension, and they find reductions in the incidence of infectious illness among adults after job loss. Other papers that look at job displacement and adult health have found significant effects on adult mortality, suicide risk,

cardiovascular health, risky behaviors such as alcohol abuse and smoking, traffic accidents and mental illness (Sullivan and Von Wachter, 2009; Deb et al., 2011; Classen and Dunn, 2012; Browning and Heinesen, 2012; Black et al., 2012).

A second strand of literature related to this paper is that on the stability of health insurance coverage and the effects of unemployment on access to health care. The loss of insurance coverage following displacement could potentially lead directly to changes in health status if it causes individuals to reduce their utilization of medical care. Among adults, Gruber and Madrian (1997) find that job separations (including both layoffs and quits) have a large impact on the probability of having any insurance. Schaller and Stevens (2015) also find significant effects of involuntary job loss on insurance coverage in their study of adults in the MEPS: a 10 percentage point reduction in insurance coverage following job loss among the full adult sample, and a 26 percentage point reduction in coverage among workers that were insured through their employer prior to displacement. They also find negative effects on health care utilization among workers who were insured through their employer prior to displacement.

For children, the effects of job loss on health insurance coverage are likely to be smaller than those for adults. While a majority of both adults and children are insured through an employer-provided policy,<sup>4</sup> there have been large expansions in the eligibility of children for public health insurance. Publicly provided child health insurance has the potential to insulate children from the consequences of job instability. Cawley and Simon (2005) and Cawley et al. (2013) study the effects of state unemployment rates on health insurance coverage for both adults and children, and find that an increase in the unemployment rate significantly decreases the probability of being insured for men, but not for women and children, who they argue are relatively insulated from these fluctuations due to public insurance policies. To our knowledge, the only paper that looks at the effects of parental job loss on child health insurance coverage is that of Fairbrother et al. (2010), which finds large increases in

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<sup>4</sup>In our sample, 62% of children whose parents were employed in the first round of the panel had employer-provided health insurance.

children's likelihood of becoming uninsured in the three months after parental displacement. However, the authors categorize any job separation as a job loss, and they do not control for unobserved characteristics that may be correlated with both a job separation and loss of insurance.

Finally, as job displacement constitutes an arguably exogenous shock to both employment and income, studying its effects on child health can provide insight into the nature of the causal effects of parental employment and family income on child health. With regard to employment status, existing research has documented negative effects of maternal employment on child health outcomes (see, for example, Gennetian et al., 2010; Ruhm, 2000; Morrill, 2011), though none have used job displacement as a source of identifying variation. With regard to income, though there is well documented evidence of a positive cross-sectional correlation between family income and child health (Currie, 2009 provides a review of these studies), it has proven difficult to identify causal effects. It could be that unobserved characteristics of the parents or the environment in which the child is raised are correlated with both family income and child health. So far, the few papers that do try to establish the causal effect of income on child health only look at health at birth.<sup>5</sup>

In our paper we are able to build significantly on the existing literature by using a dataset that allows us to (i) identify plausibly exogenous sources of job separation, (ii) link parents to their children and follow them over several survey waves, (iii) obtain information on health insurance coverage, health care utilization, and health outcomes from the same source, and (iv) explore heterogeneity in the treatment effects of parental job displacement on child health along several dimensions, including family structure, family income, and parental education.

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<sup>5</sup>Conley and Bennett (2000, 2001) use mother fixed effects and find that income at time of birth does not have a significant effect on birth-weight in general, but they do find effects for children whose mothers had low birth-weight themselves. A caveat of these papers is that the data they use from the PSID has a relatively small sample. Hoynes et al. (2013) exploit variations caused by tax reforms in the generosity of the federal Earned Income Tax Credit (EITC) as a source of exogenous variations in family income. They find that an increase in the EITC income increases the mean birth-weight and reduces the incidence of low birth-weight. They also find that it increases the use of prenatal care and reduces smoking by pregnant women.

## 4 Data

We use data from the Medical Expenditure Panel Survey (MEPS), maintained by the Agency for Healthcare Research and Quality (AHRQ). Since 1996, each year the MEPS selects a new nationally representative subsample of households participating in the previous year's National Health Interview Survey (NHIS) conducted by the National Center for Health Statistics. In each new panel the respondents are interviewed in five rounds spanning two full calendar years. Round length varies across rounds and across households - in our sample, reference periods are between three and five months, with an average duration of 4.2 months. This survey provides information on health care use, expenditures, sources of payment, and health insurance coverage, as well as reported health status, demographic and socioeconomic characteristics, employment, access to care, and satisfaction with health care. The information provided by the household respondents is complemented with information collected from a sample of medical providers, which is primarily used by the MEPS as an imputation source to supplement or replace household reported information on visits, diagnosis, and expenditures. Our sample includes 16 waves of the MEPS, covering the period 1996-2012. We limit our sample to children who were 1 to 16 years old and had at least one parent employed at the time of the first interview (round) of the survey.<sup>6</sup>

The MEPS is ideally suited for this analysis for several reasons. First, it provides rich information on child health that includes parent-reported health and mental health status, specific health conditions, and mental disorders. This provides a broad picture of health while also allowing us to isolate changes in specific conditions that are especially common and/or costly among children.<sup>7</sup> Second, it allows us to examine potential mechanisms,

<sup>6</sup>We do not count self-employed parents as employed when defining our sample. We trimmed 6.4% of the children in the sample because they did not have data for all five rounds of the survey. Another 4.4% of children were dropped from the sample because they had missing data on parental education, mother's marital status, or health outcomes, and 9% of children did not have either parent employed in the first round of the survey.

<sup>7</sup>Our choice of specific health conditions to include in our analysis is motivated in part by a statistical brief from the AHRQ (Soni, 2008) that ranks children's conditions in terms of total medical expenditures. According to this brief, the five most expensive conditions for children aged 0-17 in 2006 in terms of total expenditures were mental disorders, asthma, trauma-related disorders, acute bronchitis, and infectious

such as changes in insurance coverage and health care utilization, using the same dataset. Finally, by combining many short panels it provides a relatively large sample of children with displaced parents, which is unusual in studies of displacement that rely on survey data. This enhances our statistical power and allows us to explore heterogeneity in the effects of parental displacement on child health.

Our indicators for involuntary job displacement are constructed from a section of the MEPS survey in which respondents are asked to choose the main reason why they changed jobs since the last interview from a list of possible responses. In most of our analysis, we define involuntary displacement as displacement for one of three reasons: “job ended,” “business dissolved or sold,” or “laid off.”<sup>8</sup> Although the three causes for job loss considered are clearly involuntary, it is possible that layoffs and jobs that end are correlated with unobservable individual or family shocks that are also related to child health. Though other possible responses to the survey such as “quit to take care of home or family,” “illness or injury,” and “quit to take some time off,” are likely to capture many job changes that are potentially endogenous, one limitation of the MEPS data is that we are not able to identify workers who were fired for cause. To address this concern, we also create an alternative definition of job displacement that only includes firm closures—an approach that is common in the literature on job displacement. We note, however that limiting the definition of involuntary displacements in this way comes at a cost, resulting in a substantial decrease in the number of displacements that we observe. We also interpret differences across specifications carefully in light of possible heterogeneous treatment effects, as the baseline characteristics of individuals displaced in business closure events are different from those of the full sample of displaced workers.

We begin by restricting our samples so that for the estimates of the effects of fathers' diseases.

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<sup>8</sup>When asked why they changed jobs since the last interview, respondents are given the following options: job ended, business dissolved or sold, retired, illness or injury, laid off, quit to have a baby, quit to go to school, quit to take care of home or family, quit because wanted time off, quit to take another job, unpaid leave, or other.

displacements, the at-risk sample includes all children whose father is employed in the first round of the survey, and for the estimates of the effects of mothers' displacements, the at-risk sample includes all children whose mother is employed in the first round of the survey. Defining the samples this way ensures that the sample used to help identify the control variables in our analysis is as similar as possible to the treatment group. We note, however, that there are differences in baseline characteristics between children in the father-employed sample and children in the mother-employed sample that make direct comparison of the effects of paternal and maternal job displacement more difficult. In addition to the models estimated on these broader samples, we estimate models in which we restrict our father-employed and mother-employed samples to children whose relevant parent had at least one year of job tenure prior to displacement. These samples represent groups of children whose parents were more securely attached to the labor market, for whom job loss is likely to be a more severe, unexpected, and plausibly exogenous shock. Based on precedent in the literature on job displacement, we use this as our preferred estimation sample when we conduct robustness checks and heterogeneity analysis.

The outcome variables that we examine can be divided into the following categories:

- (i) *Health outcomes*: These include the following: *Reported health*: Respondents are asked to rate the health and mental health status of each child in the family according to the following categories: excellent, very good, good, fair, and poor. We create indicators for whether a child's health and mental health were reported to be fair or poor and indicators for whether a child's health and mental health were reported to be excellent; *Health conditions*: Medical conditions are reported by respondents when there is an event related to this condition, such as a doctor visit, hospital stay, disability day, or prescription drug purchase. Conditions are reported verbatim by the interviewer and then coded to ICD-9-CM codes. We use these codes to identify the following specific conditions: infectious illnesses, bronchitis, asthma, injuries (trauma), attention deficit disorder (ADD), and stress-related mental disorders (anxiety, depression);

(ii) *Health insurance status*: We look at whether the child is covered by any insurance, private insurance, or public insurance (including Medicaid, SCHIP, Tricare, and other public hospital/physician coverage).

(iii) *Health care and prescription drug utilization and expenditures*: These include indicators for any doctor visit, checkups, diagnostic, emergency room (ER) visits, and mental health visits, as well as overall prescription drug use and the use of antibiotics and mental health drugs.

Throughout the paper, we include all children ages 1 and up in the regressions with outcomes related to physical health. In case diagnosis of mental disorders in childhood is correlated with a child's exposure to teachers or other non-parental care providers, we limit the sample to school-aged children (ages 6 and up) for all mental-health-related outcomes, including mental health ratings, conditions, visits and prescriptions drugs.

Before proceeding, we emphasize that, as in most of the existing literature, our measures of child health are reported by household survey respondents (usually the mother). As such, it is possible that changes in these measures may result from changes in respondent awareness or perception of a child's health status, or even the respondent's own mental state, rather than changes in the child's actual health. Moreover, because a medical condition is identified in the data when a health event related to the condition occurs, changes in the incidence of health conditions may be related to changes in the consumption of health care. We interpret our findings with these caveats in mind. We also explore the potential for changes in the frequency of medical care to influence reporting directly by looking for changes in the use of routine care after displacement.

Table 1 presents round 1 summary statistics by parental displacement status.<sup>9</sup> A number of statistically significant differences between the columns highlight the importance of our empirical approach, which includes individual fixed effects and linear time trends that are allowed to vary depending on baseline health status. Specifically, the children of displaced

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<sup>9</sup>Additional summary statistics for a number of subgroups can be found in Appendix Table A1.

workers are less likely to be white and their parents are less likely to have a college education, less likely to have had at least one year of job tenure in round 1, and more likely to have individual earnings below the sample median. The children of displaced workers also are more likely to come from single-earner families and families with income below 200 percent of the poverty line, and have lower levels of private health insurance coverage and higher levels of public insurance coverage. For the most part, the differences between never-displaced and displaced samples are less pronounced when the displaced-parent samples are limited to include only the children of parents who had at least one year of job tenure prior to displacement or only the children of workers displaced in a firm closure.

Looking at health outcomes, Table 1 shows that the children of displaced workers are less likely to have their physical and mental health reported as “excellent” and the children of displaced mothers are more likely to have physical and mental health reported as “fair or poor.” The children of displaced fathers are less likely to be diagnosed with specific mental disorders including ADD, anxiety, and depression, which could be driven by lower levels of health insurance coverage. There are also a few differences in the incidence of physical health conditions, for example, a lower incidence of injuries among the children of displaced mothers and a lower incidence of infections among the children of displaced fathers. The summary statistics in Table 1 also reveal important differences between the father-employed and mother-employed samples. Specifically, black children and children in families with income below 200 percent of the poverty line make up a larger share of the mother-employed sample. Employed mothers are also less likely to have job tenure than their male counterparts.



## 5 Empirical Approach

We estimate a series of fixed-effects models, each with a different health-related dependent variable. Our main regression equation is as follows:

$$Y_{it} = \alpha_i + \beta D_{it} + \gamma X_{it} + \delta_t + \varepsilon_{it} \quad (1)$$

where  $Y_{it}$  is the outcome variable for child  $i$  in round  $t$ ,  $\alpha_i$  is a child-specific fixed effect,  $D_{it}$  is an indicator for post-parental displacement periods,  $X_{it}$  is a vector of time-varying control variables, and  $\delta_t$  is a set of round dummies. Child fixed effects are included to account for permanent characteristics of children and families that may be related both with child health and the likelihood of parental displacement. The time-varying controls include dummies for child age and the calendar year in which the interview took place, month of interview dummies to control for seasonality in both health outcomes and the likelihood of parental displacement, and separate linear time trends for each of the five baseline health categories. We also control for the length of the round in days, which varies across individuals even within the same panel and round due to variation in interview dates across households. Observations are weighted by MEPS individual sample weights.<sup>10</sup> To adjust for correlations across children within families and correlation within families over time the standard errors are clustered at the household level.

Within this empirical framework, causal identification of the effects of parental job loss relies on the assumption that the job loss is exogenous with respect to family and child outcomes. In other words, there must be no unobservable *time-varying* factors that are correlated both with the probability of worker displacement and with child health outcomes. It must also be the case that changes in child health do not directly cause changes in the likeli-

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<sup>10</sup>Following Solon et al. (2014), we have also conducted our analysis without using sample weights. Though there are some differences between the results from the unweighted analysis and our main results, the discrepancies between the two sets of results are consistent with the known oversampling of minority groups in the MEPS and the heterogeneity in treatment effects that we observe between groups. Unweighted results are available from the authors upon request.

hood of parental displacement. While we cannot entirely rule out either of these possibilities, we address concerns about endogeneity in several ways. Most importantly, we choose our definition of job displacement carefully and test robustness to an alternative definition of the variable. Limiting our sample to workers with more stable employment history also helps to address potential endogeneity. Finally, we check for a potential red flag by estimating models in which we include an indicator for the survey round prior to displacement to see if the health effects of parental displacement on child health seem to occur prior to the event.

## **6 Main Results**

### **6.1 Parental Job Loss and Child Health**

We begin, in Table 2, by estimating the effects of fathers' and mothers' job losses on child health and mental health. As described in Section 4, we estimate the effects of each parent's job loss with (1) the full samples and all involuntary displacements, (2) samples limited to the children of workers with at least one year of job tenure prior to displacement, and (3) a restricted definition of displacement that includes only firm closures.

The results in Table 2 show modest decreases (about 6-10 percent) in the likelihood that a child's health or mental health is reported to be "excellent" following the job loss of either parent. Focusing on specific health conditions, however, the estimated effects of fathers' and mothers' job losses on child health differ. Paternal job loss is associated with substantial (100 to 150 percent) increases in the likelihood of depression and anxiety in both the tenured-father sample and the firm closures specification, while maternal job loss has no significant effect on mental illness. Meanwhile, a mother's job loss is associated with 7-8 percent decreases in the incidence of infectious illness (including viral and bacterial infections such as flu, colds, intestinal infection, and otitis) while a father's job loss is not associated with changes in infectious illness. Other results in Table 2 are mostly insignificant, with point estimates that vary across specifications. Two exceptions are a weakly significant (at 10% significance level) reduction in trauma in the male firm-closure specification, and a weakly

significant reduction in asthma in the full-sample female displacement specification.

The differences between the effects of fathers' and mothers' job losses in Table 2 are interesting in light of the existing literature and potential mechanisms at work. As discussed in Section 2, previous social science research suggests that the stress effects of paternal displacement are likely to be larger than those from maternal job loss. Our finding that children are more likely to be diagnosed and treated with mental disorders commonly associated with stress following paternal displacement is consistent with this story. Research also tells us that mothers are more likely to spend time as caregivers during periods of unemployment and may remain unemployed longer than fathers, particularly in two-earner families. Thus, the finding that the incidence of infectious illness is decreased among children after maternal displacement can either be explained by reductions in mothers' own exposure to infectious illness in the workplace or by changes in children's exposure from reductions in the use of out-of-home childcare. Considering the long-run implications of these findings, the short-run changes in stress following paternal job loss might have broader impacts on children's health and academic achievement that could translate into the long-run effects on educational attainment and labor market outcomes that have been found in other studies. At the same time, it is difficult to know whether short-run reductions in infectious illness are a net positive or negative for children's health (we discuss this issue in more detail below).

## 6.2 Parental Job Loss, Health Insurance Coverage, and Health Care Utilization

To investigate the mechanisms behind the health effects observed in Table 2, we next explore the effects of parental job loss on health insurance coverage and healthcare utilization in Table 3. If parents forego treatment for the conditions in question as a result of a lack of insurance coverage or a change in the source of coverage, these results have potentially important implications for the interpretation of our main results. While we believe that the acute nature of many of the health conditions that we consider makes it unlikely that parents would not seek treatment for these conditions even in the absence of health insurance,

we acknowledge the possibility that the observed reduction in the incidence of events related to infectious diseases following maternal displacement may reflect reductions in the likelihood of diagnosis and treatment. Reduced diagnosis may also be masking increased incidence of other health conditions as well. If we find significant decreases in health insurance coverage and routine healthcare use following displacement, then we have reason to be concerned about this issue.

The effects of parental job loss on children's health insurance status are shown in the top panel of Table 3. The results show that both paternal and maternal job losses lead to reductions in private insurance coverage and increases in public insurance coverage. Comparing the coefficients on maternal and paternal job loss across columns, we can see that children are also more likely to lose private coverage and gain public coverage following the loss of a job with tenure, and that the effects of firm closure on insurance coverage are smaller than the effects of other types of displacement. Focusing on the tenured samples, we see that while the effects of parental job loss on private insurance coverage are fairly substantial (with decreases of around 15 percent in both the tenured father and tenured mother samples), these effects are largely counteracted by increases in the likelihood of public coverage (26 percent in the father-tenured sample and 19 percent in the mother-tenured sample). As a result, even in the sample of tenured workers, the likelihood of having insurance coverage from any source is reduced by only 5-6 percent following displacement. These effects are substantially smaller than the effects found by Schaller and Stevens (2015), who use the MEPS to study the effects of job displacement on adult health outcomes, insurance, and utilization.<sup>11</sup> Thus, our results suggest that families are making use of the public safety net following involuntary displacement.

In the bottom panel of Table 3 we explore whether parental job loss results in changes in children's medical care utilization. We acknowledge that changes in utilization may be

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<sup>11</sup>Schaller and Stevens (2015) find that job displacement results in a 14.4 percent reduction in the likelihood of having any insurance for adults in the MEPS sample. Part of this difference can be explained by differences in the availability of public insurance coverage to adults; only 8 percent of displaced adults in their sample had public coverage in round 1.

driven simultaneously by changes in family income, changes in insurance status and source of coverage, and changes in health status, and interpret our findings with caution. Perhaps not surprisingly, given the relatively small changes in insurance coverage that we observe, we find no significant effects of parental displacement on the likelihood of receiving a checkup or well-child visit during the survey round. Thus, it appears that family income shocks and changes in insurance coverage do not substantially affect the use of routine medical care in the short run. This finding is reassuring, as it suggests that our health effects are unlikely to be driven by changes in the likelihood of diagnosis.<sup>12</sup> We also find no significant effects of parental displacement on diagnostic or emergency visits.

There are two significant results that do appear in Table 3, each of which is potentially consistent with the health results from the previous table. First, we find an increase in the likelihood of a mental health visit following paternal displacement, which corresponds with the increase in mental disorders after paternal displacement seen in Table 2. We also see a significant reduction in prescription drug use following maternal displacement, which could be related to the reductions in infectious illness seen in Table 2. However, the effects on antibiotic use, while negative, are not statistically significant.

### 6.3 Timing of the Effects

Next, we estimate models in which we include three separate displacement indicators: one for the period prior to displacement, one for the period in which displacement occurs, and one

<sup>12</sup>To further alleviate the concern that sick children might be less likely to visit the doctor and thus less likely to be diagnosed with a particular medical condition following parental displacement, we additionally investigated the raw and regression-adjusted correlations between parent-reported general health ratings, which are not mechanically related to specific to medical events, and the likelihood of checkup or diagnostic visits. We wanted to see if these correlations are different for children whose parents were recently displaced than for other children. The idea behind this exercise is that parents' ratings of their child's overall health status should reflect not only conditions for which the child visited a doctor, but also conditions that the family chose to treat at home or opted not to treat. If the relationship between reported general health and doctor visits is weaker following displacement, we might worry that some conditions are not being officially "diagnosed" in our data. We find that the correlations seen immediately following parental displacement are very similar to those for the rest of our sample. Though they do not necessarily reflect causal relationships, the fact that these correlations don't change following parental displacement suggests that the likelihood of getting treated for a particular health condition also does not change dramatically.

for the periods after displacement. There are two reasons to do this. The first reason is that previous research has shown that the earnings losses associated with job displacement may begin as early as two years before the displacement occurs (Jacobson et al. 1993). Though the reasons for the pre-displacement decline in earnings are unknown, this pattern could mean that child health may be affected by changes in income, parental time use, and stress *before* displacement. This could affect the magnitude of our estimated coefficients if our pre-period is contaminated with treatment effects. For example, if the pre-period treatment effects on a health outcome are negative, then we will be underestimating the total treatment effect in our main specification. It is also possible that individuals anticipating displacement might choose to attend the doctor or fill prescriptions in the period before they lose their health insurance, which would bias the magnitude of the health care utilization effects upward. The second reason for estimating these models is to use the pre-displacement indicators as a placebo test to reduce concerns about the endogeneity of parental displacement. However, this relies on the assumption that there are *no* treatment effects in the pre-period. If we were to find significant deterioration in child health in the period prior to parental displacement, it would be difficult to sort out the reasons for this—we may be able to attribute it to early treatment effects, as described above, but we would also be concerned that the health shock is related to the reason for the subsequent job displacement.

Estimates showing the timing of the health effects of fathers' and mothers' job losses are presented in Table 4. In this and all remaining tables, we restrict the sample to workers with at least one year of job tenure at the start of the survey.<sup>13</sup> Consistent with the pre-displacement earnings losses seen in the literature, we do see a small marginally significant decline in private insurance coverage in the period prior to paternal displacement. However, we do not see any significant health effects in the period prior to displacement. This suggests that any decreases in income, increases in stress levels and changes in time use associated

<sup>13</sup> Many studies of displaced workers restrict their samples to workers with three or more years of job tenure prior to displacement. We estimated models in which we restricted our analysis to the children of workers with three years of tenure in round 1. The estimates were very similar, though less precise.

with job loss do not measurably affect children’s health before job loss occurs. This also mitigates concerns about reverse causality and omitted variables bias.

## 7 Heterogeneity

As discussed in Section 2, it is possible that the effects of parental job displacement seen in the full sample are masking heterogeneity in the treatment effects along a number of dimensions. In this section, we explore heterogeneity in the treatment effects of parental displacement by family type, child age, and family socioeconomic status. We also explore whether the effects of parental displacement are proxying for changes in local economic conditions and whether they are affected by the macroeconomic environment in which they occur.

### 7.1 Family Type

First, in Table 5, we consider family structure and the number of earners in the family, comparing the effects of paternal displacement in dual-earner and single-earner families and comparing the effects of maternal displacement in two-parent versus single-mother families. A priori, it is difficult to predict how the effects will differ by family type. Single earner families may have fewer resources with which to respond to an earnings shock, and displacement is more likely to cause a child to lose private health insurance coverage when only one parent is employed. On the other hand, Kalil and Ziol-Guest (2008) provide evidence that the negative effects of paternal displacement on children’s academic outcomes are more pronounced in two-earner households and suggest that this is because fathers are distressed at losing their “breadwinner” status. Meanwhile, mothers in two-parent families may be more likely to remain out of the labor force longer following displacement than single mothers, so it may be more likely to observe reductions in infectious illness and other effects related to changes in childcare arrangements for these mothers.

The results by family type show a slightly larger increase in mental disorders after pa-

ternal displacement in dual-earner families, but the difference is not statistically significant. Turning to the effects of maternal displacement, all of the estimated effects, including both the declines in parent-reported health and mental health and the reduction in infectious illness, are larger and more precisely estimated in two-parent families. In general, while we do not have enough data to rule out similar effects across family types, it appears as though the effects of both paternal and maternal job loss in Table 2 are at least as large in two-earner families as they are in single-earner families, and possibly larger.

## 7.2 Socioeconomic Status (SES)

One of the striking findings from studies of the long-run effects of parental job displacement is that the effects tend to be concentrated among relatively disadvantaged households. Oreopoulos et al. (2008) and Page et al. (2009) find that the strongest effects of parental job loss on children's labor market and educational outcomes in adulthood are found at the bottom of the income distribution. In Table 6 we explore whether the effects of parental job loss differ depending on whether the earnings of the displaced parent were above or below the sample median in round 1, whether family earnings were below 200 percent of the federal poverty line, and whether either of the child's parents have attended college.

As in previous studies, we find striking patterns when we stratify by socioeconomic status (SES). Specifically, we find that the negative effects of paternal displacement on child mental health are concentrated among low-SES families. We additionally find statistically significant negative effects of paternal job loss on a child's physical health rating and significant increases in the incidence of injuries following paternal job loss among children in low-SES families that are not apparent in the full sample. Looking at the effects of maternal displacement, the coefficients are mostly similar for low- and high-SES children, with one major exception: we see that the reductions in infectious illness are substantially larger among children in high-earnings families and children with more-educated parents. This is consistent with our predictions, since these are the families in which mothers are more likely to have the



luxury of choosing to substitute home care for market-based childcare during a period of unemployment.

As a side note, while fathers' job losses are associated with increases in injuries among the children of in low-SES families, they are associated with decreases in injuries in more-advantaged families. It is difficult to know what to make of this result—it could be driven by differential changes in maltreatment rates (for example, if child maltreatment were exacerbated by financial stress in low-income families and exacerbated by workplace stress in high-income families) but also could be related to different patterns of time use and participation in sports and other extracurricular activities between low- and high-SES children.

### 7.3 Child Age

Next, in Table 7, we estimate the effects of parental job loss on child health by the age of the child. Recall from Section 2 that we might expect to see the largest reductions in infectious illness among young children if mothers are substituting home care for market-based childcare after job loss, but otherwise it is difficult to predict how the effects should vary by age. To check for heterogeneity by age, we separate our data into three age groups: age 1-5 (pre-school aged), age 6-12 (primary and middle school), and age 13-18 (teens). Though the coefficients do vary across columns for most outcomes, we don't have enough power to identify significant differences across age groups in the estimated health effects of parental displacement. For what it is worth, we do not see evidence that the effects of maternal job loss on infectious illness are concentrated among young children, as we might have expected if changes in daycare attendance were the only mechanism, and we do not see significant differences in the effects of paternal job loss on mental illness by age.

### 7.4 Economic Conditions

A final factor not yet considered is the state of the local economy at the time of displacement. A large literature has shown that macroeconomic conditions are associated with

health, mental health, time use, and other outcomes for adults. As displacements are more likely to occur when macroeconomic conditions are bad, it is possible that our displacement indicator is picking up the effects of experiencing an economic downturn, rather than the direct effects of involuntary job loss. Another way in which macroeconomic conditions might play a role in our analysis is as a source of heterogeneity in our estimated coefficients. In particular, it is possible that the effects of job displacement on child health might vary depending on the state of the local economy at the time that the displacement occurs. However, the direction of the changes is unclear. It is possible that job displacement might carry less stigma during an economic downturn, as displacement is widespread when the economy is suffering, but displacement may also result in more financial strain and a longer period of unemployment during an economic downturn.<sup>14</sup>

To explore the link between parental job loss and local economic conditions, we use restricted information on the geographic location of the MEPS respondents, obtained with special permission from the AHRQ. First, we estimate our health regressions with an additional control for the state monthly unemployment rate. The results, presented in columns 1 and 6 of Table 8, show that the effects of parental displacement are unchanged when local economic conditions are included in the regressions. Next, we examine whether the treatment effects of parental job displacement are different during an economic downturn by interacting the displacement variables with an indicator for whether the state unemployment rate is high (above 5) or low at the time of the displacement. Perhaps surprisingly, the results again show no role for local economic conditions in mediating the effects of parental job displacement on child health; while the coefficients are sometimes different across the two columns, the differences between them are never statistically significant.

As an alternate way of exploring whether the state of the economy matters for the effects of parental displacement on child health, we split our sample into two parts, separating

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<sup>14</sup>It is also important to keep in mind that selection into job displacement is also likely to be different during an economic downturn, so any differences in the estimated coefficients may be the result of a change in the composition of the treated group.

panels that end prior to 2008 (the start of the Great Recession) from panels that end in 2008 or later. This approach is somewhat crude, given that there may be changes in health behaviors, sample composition, survey methodology, or other unobservable factors over the time period that contribute to differences in the estimated effects. However, it gives us some idea of whether the health effects of parental displacement are substantially different in the later years of our data, when the national economy was in the midst of a severe downturn and slow recovery. These results, also shown in Table 8, show that our main results—the effects of paternal job loss on mental health conditions and the effects of maternal job loss on infectious illness—are not different in the two time periods. However, a few differences between the time periods do emerge. In particular, paternal job loss results in increases in the likelihood of reporting a child’s health and mental health to be fair or poor in the period before 2008, but does not have the same effect after 2008. We also see that paternal job loss results in a reduction in infectious illness in general and bronchitis and upper respiratory infections in particular during the later time period. This could be because men were more likely to remain out of work for a long period following displacement during the downturn, and thus children were less likely to be exposed to infectious illness through their fathers.<sup>15</sup>

## 8 Discussion and Conclusion

This study examines the short-run effects of parental job loss on children’s health. Our results suggest differing patterns in the effects of paternal and maternal job loss on child health in the short-run. In particular, while both male and female job losses are associated with declines in parents’ ratings of child health and mental health, paternal job loss is uniquely associated with increases in depression and anxiety and visits to mental health professionals among children, while maternal job loss reduces the incidence of infectious illness and the use of prescription drugs. We find that these patterns are robust to replacing our definition of involuntary job displacement with one that includes only firm closures,

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<sup>15</sup>Schaller and Stevens (2015) find that both men and women experience reductions in infectious illness following job displacement.

though sometimes the estimates based on the alternative definition are less precise, and we do not see any statistically significant changes in child health in the period prior to displacement. Exploring heterogeneity in our estimated effects, we find that the negative effects of paternal job loss are larger for children in low-SES families, while the reductions in infections after maternal job loss are concentrated among children in high-SES two-parent families. We are not able to discern significant differences in the estimated effects of parental displacement by child age or the state of the economy at the time of displacement. Our paper is the first to document the negative mental health effects of paternal job loss on children, and can potentially provide insight as to why parental job loss has been found to have negative effects on children's academic achievement and long-run outcomes. At the same time, the finding that maternal job loss reduces children's incidence of infectious illness in the short-run suggests that changes in maternal time use are more important for child health than changes in income and health insurance status when mothers lose their jobs.

In addition to documenting the differing effects of paternal and maternal job loss on child health and mental health, another important finding from this study is that public health insurance programs such as Medicaid and the SCHIP are providing an effective safety net for children. It does not appear that the reductions in the observed incidence of specific health conditions that we observe are due to reduced diagnosis resulting from changes in insurance coverage, as we find only limited effects of job loss on children's health insurance coverage and no effects on the utilization of routine and diagnostic medical care. When we look at health insurance coverage by source, we find a substantial increase in the probability of having public insurance coverage following displacement, which largely counteracts the decrease in private coverage. As a result, our estimated effects of job displacement on the likelihood of children having coverage from any source are substantially smaller than the corresponding estimates for adults using the MEPS data (Schaller and Stevens, 2015). As the share of the population eligible for Medicaid is expanded in some states through the Affordable Care Act, this safety net may become larger still.

One limitation of our study is that we cannot extend our observation period beyond the scope of the MEPS panel, which is only two years in length. As a substantial fraction of displaced workers are likely to regain employment soon after displacement, it is likely that the reductions in contagious illness that we observe will disappear over time. It is also possible that the effects of job displacement related to income loss and stress will become larger over time. Job displacement is associated with permanent decreases in earnings and increased likelihood of future displacement (Jacobson et al., 1993, Stevens 1997) so an initial displacement may be only the beginning of a tumultuous period for a family. Increased stress in the period immediately following displacement may also take time to translate into worse physical health. We also acknowledge that it is difficult to foresee whether temporary reductions in contagious illness in childhood translate into any changes in longer-term health, human capital, or labor market outcomes. According to the “cohort morbidity phenotype” theory of Finch and Crimmins (2004), the inflammatory processes that result from early life exposure to infectious illness persist from early age into adulthood and may ultimately be related to old-age mortality. On the other hand, a substantial literature in medicine and public health is dedicated to exploring the hypothesis that daycare attendance and early exposure to infectious disease in fact protect against the development of asthma, allergy, and other diseases later in life (see, e.g. Ball et al. (2000), Nafstad et al. (2005)).

Though we acknowledge that we cannot draw any conclusions about the long-term welfare effects of parental job displacement from our findings due to these limitations, we emphasize that the results from this study highlight the importance of considering not only changes in income, but also of changes in mental health, parental time use, and childcare arrangements, when studying the effects of job displacement on individuals and families.

**Table 1: Summary Statistics**

	Father Not		Father Displaced		Mother Not		Mother Displaced	
	Displaced	All	Tenured	Closure	Displaced	All	Tenured	Closure
<b>Health</b>								
Health Fair/Poor	0.023	0.028	0.023	0.031	0.026	0.038*	0.032	0.030
Health Excellent	0.572	0.519*	0.524*	0.484*	0.568	0.526*	0.555	0.508*
Infectious Illness	0.399	0.371*	0.372	0.392	0.388	0.396	0.400	0.369
Bronchitis	0.204	0.196	0.197	0.223	0.202	0.195	0.193	0.178
Asthma	0.113	0.114	0.105	0.131	0.117	0.119	0.114	0.124
Trauma	0.054	0.054	0.058	0.077	0.059	0.048*	0.048	0.040
<b>Mental Health+</b>								
Mental Hlth F/Poor	0.020	0.023	0.019	0.025	0.024	0.035*	0.030	0.020
Mental Hlth Exc.	0.612	0.561*	0.553*	0.547	0.599	0.550*	0.571	0.560
Attention Deficit Dis.	0.041	0.032*	0.024*	0.029	0.044	0.037	0.037	0.045
Depression/Anxiety	0.018	0.012*	0.008*	0.004*	0.021	0.032	0.035	0.015
<b>Health Insurance</b>								
Any Insurance	0.915	0.841*	0.900*	0.908	0.902	0.840*	0.871*	0.844*
Private Ins	0.775	0.591*	0.705*	0.734	0.731	0.513*	0.649*	0.597*
Public Insurance	0.162	0.273*	0.218*	0.197	0.191	0.350*	0.244*	0.263*
<b>Health Care Utilization</b>								
Doctor Visit	0.434	0.416	0.423	0.445	0.425	0.425	0.429	0.402
Checkup	0.151	0.151	0.153	0.155	0.141	0.148	0.149	0.115
Diagnostic	0.291	0.268*	0.273	0.311	0.282	0.272	0.269	0.282
Emergency Visit	0.027	0.033	0.032	0.038	0.031	0.034	0.026	0.019
Any Prescription	0.337	0.307*	0.313	0.362	0.332	0.337	0.329	0.357
Antibiotic Rx	0.167	0.148*	0.158	0.193	0.155	0.154	0.143	0.150
Mental Visit+	0.015	0.009*	0.010	0.011	0.016	0.019	0.026	0.016
Mental Rx+	0.039	0.028*	0.021*	0.022	0.040	0.032	0.033	0.030
<b>Demographic and Socioeconomic</b>								
Male	0.514	0.502	0.506	0.531	0.510	0.507	0.497	0.516
Age	8.267	8.014*	8.332	8.056	8.819	8.507*	8.937	9.074
Black Non-Hispanic	0.081	0.106*	0.105*	0.070	0.157	0.216*	0.186*	0.193*
Hispanic	0.175	0.268*	0.249*	0.218*	0.153	0.223*	0.209*	0.183
Parents HS or Less	0.330	0.445*	0.393*	0.361	0.356	0.509*	0.435*	0.491*
Below 200% FPL	0.261	0.406*	0.322*	0.317	0.383	0.577*	0.472*	0.513*
Dad 1 Yr Tenure	0.816	0.592*	1.000	0.783				
Single Earner	0.359	0.402*	0.400*	0.421*				
Dad Low Earnings	0.282	0.444*	0.364*	0.332				
Mom 1 Yr Tenure					0.733	0.512*	1.000	0.639*
Single Mom					0.249	0.380*	0.311*	0.291
Mom Low Earnings					0.356	0.529*	0.410*	0.467*
Observations	29711	3644	1990	743	29089	3514	1631	611

*Note:* This table reports means estimated with data from the first round of each MEPS panel using sampling weights. The reported number of observations is unweighted. The sample includes children who were 1-16 years old and whose father (columns 1-4) or mother (columns 5-8) was employed in round 1. The samples in column 1 and 5 include children whose father or mother did not suffer a job loss during the survey period. The sample in column 2 (6) includes children whose father (mother) lost his (her) job due to a layoff, job ending, or business closure after the first round of the survey. The sample in column 3 (7) includes children whose father (mother) had at least 1 year tenure in the job in round 1, and suffered a job loss after round 1 as previously defined. The sample in column 4 (8) includes children whose father (mother) was employed in round 1, and lost his (her) job loss due to a business closure.

\* The difference in means between the children of displaced workers and the corresponding sample of children whose parents were never displaced is statistically significant at the 5 percent level.

+ Mental health sample is age 6+.

Table 2: Effects of Parental Job Loss on Child Health

HEALTH (AGES 1+)						
	Father Displaced			Mother Displaced		
	All	Tenured	Closure	All	Tenured	Closure
Health Fair/Poor	0.003 (0.003)	0.005 (0.004)	0.003 (0.006)	0.003 (0.002)	-0.001 (0.003)	0.009* (0.005)
Health Excellent	-0.015 (0.010)	-0.012 (0.014)	-0.051*** (0.017)	-0.013 (0.010)	-0.031** (0.014)	-0.015 (0.023)
Infectious Illness	0.002 (0.011)	-0.002 (0.015)	0.023 (0.020)	-0.028** (0.011)	-0.031** (0.016)	-0.014 (0.026)
Bronchitis	-0.006 (0.009)	-0.012 (0.012)	-0.002 (0.016)	0.001 (0.009)	0.008 (0.012)	0.017 (0.019)
Asthma	0.002 (0.006)	0.005 (0.008)	0.015 (0.011)	-0.010* (0.006)	-0.003 (0.009)	-0.010 (0.014)
Trauma	-0.002 (0.005)	-0.009 (0.007)	-0.017* (0.010)	-0.002 (0.005)	-0.004 (0.008)	0.011 (0.011)
Individuals	33001	24633	33001	32242	21343	32242
Displacements	3593	1969	732	3470	1618	597

MENTAL HEALTH (AGES 6+)						
	Father Displaced			Mother Displaced		
	All	Tenured	Closure	All	Tenured	Closure
Mental Hlth Fair/Poor	0.003 (0.004)	0.005 (0.005)	0.001 (0.006)	0.001 (0.004)	0.002 (0.005)	0.008 (0.011)
Mental Hlth Exc.	-0.008 (0.012)	-0.001 (0.016)	-0.044** (0.021)	-0.006 (0.013)	-0.038** (0.017)	-0.058** (0.026)
Attention Deficit Dis.	-0.002 (0.003)	-0.001 (0.004)	-0.000 (0.005)	0.002 (0.003)	0.006 (0.005)	0.007 (0.008)
Depression/Anxiety	0.002 (0.003)	0.008** (0.004)	0.006* (0.004)	-0.004 (0.004)	-0.006 (0.007)	0.003 (0.005)
Individuals	21926	16785	21926	23009	15859	23009
Displacements	2358	1328	496	2410	1201	451

*Note:* The table reports results from linear probability models. Samples in columns labeled *Father Displaced* (*Mother Displaced*) include children whose father (mother) was employed in the first round. Columns 1 and 4 (*All*) present estimates of the effects of job losses due to layoff, job ending or business closures. Columns 2 and 5 (*Tenured*) restrict the sample to children whose father or mother had at least 1 year of tenure in the main job in round 1. Columns 3 and 6 (*Closure*) present estimates of the effects of job losses due to business closures only. All regressions include individual fixed effects, dummies for age, calendar year of interview, month, and survey round, a control for the length of the round in days, and linear time trends specific to the health status reported in the first round. Standard errors (in parentheses) are clustered at the household level (\*  $p < .10$ , \*\*  $p < .05$ , and \*\*\*  $p < .01$ ). Estimates are weighted using MEPS sampling weights.

Table 3: Effects of Parental Job Loss on Insurance Coverage and Health Care Utilization

HEALTH INSURANCE COVERAGE						
	Father Displaced			Mother Displaced		
	All	Tenured	Closure	All	Tenured	Closure
Any Insurance	-0.042*** (0.010)	-0.055*** (0.013)	-0.029** (0.012)	-0.032*** (0.010)	-0.046*** (0.014)	-0.001 (0.019)
Private Ins.	-0.094*** (0.011)	-0.109*** (0.014)	-0.050*** (0.013)	-0.071*** (0.010)	-0.100*** (0.016)	-0.042** (0.022)
Public Ins.	0.050*** (0.008)	0.057*** (0.011)	0.015 (0.010)	0.034*** (0.008)	0.047*** (0.011)	0.034** (0.017)
HEALTH CARE UTILIZATION						
	Father Displaced			Mother Displaced		
	All	Tenured	Closure	All	Tenured	Closure
Doctor Visit	0.001 (0.011)	-0.004 (0.014)	-0.010 (0.019)	-0.016 (0.011)	-0.013 (0.015)	-0.010 (0.024)
Checkup	-0.012 (0.009)	-0.010 (0.012)	-0.011 (0.016)	-0.014 (0.009)	0.005 (0.013)	-0.030 (0.020)
Diagnostic	0.004 (0.009)	-0.001 (0.013)	0.002 (0.017)	-0.004 (0.010)	-0.007 (0.014)	0.005 (0.023)
ER Visit	-0.007 (0.005)	-0.010 (0.006)	-0.010 (0.008)	-0.004 (0.004)	-0.001 (0.006)	0.011 (0.008)
Mental Hlth Visit+	0.006* (0.003)	0.008* (0.005)	0.002 (0.004)	-0.004 (0.005)	-0.008 (0.008)	0.001 (0.007)
Any Rx	0.004 (0.010)	-0.010 (0.013)	-0.021 (0.016)	-0.025** (0.010)	-0.015 (0.014)	-0.028 (0.022)
Antibiotic Rx	-0.000 (0.008)	-0.007 (0.011)	-0.010 (0.014)	-0.010 (0.008)	-0.009 (0.011)	-0.013 (0.017)
Mental Hlth Rx+	0.003 (0.004)	0.006 (0.004)	0.007 (0.006)	0.006 (0.004)	0.009 (0.007)	-0.002 (0.008)
Individuals	21926	16785	21926	23009	15859	23009
Displacements	2358	1328	496	2410	1201	451

*Note:* The table reports results from linear probability models. All samples include children who were age 1-16 in the first round, unless otherwise indicated. Samples in columns labeled *Father Displaced* (*Mother Displaced*) include children whose father (mother) was employed in the first round. Columns 1 and 4 (*All*) present estimates of the effects of job losses due to layoff, job ending or business closures. Columns 2 and 5 (*Tenured*) restrict the sample to children whose father or mother had at least 1 year of tenure in the main job in round 1. Columns 3 and 6 (*Closure*) present estimates of the effects of job losses due to business closures only. All regressions include individual fixed effects, dummies for age, calendar year of interview, month, and survey round, a control for the length of the round in days, and linear time trends specific to the health status reported in the first round. Standard errors (in parentheses) are clustered at the household level (\*  $p < .10$ , \*\*  $p < .05$ , and \*\*\*  $p < .01$ ). Estimates are weighted using MEPS sampling weights.

+ Mental health sample is age 6+



Table 5: Effects of Parental Job Loss on Child Health and Mental Health, by Family Type

HEALTH (AGES 1+)					
	Father Displaced			Mother Displaced	
	Two Parent	Dual Earner	Single Earner	Two Parent	Single Mom
Health Fair/Poor	0.005 (0.005)	-0.000 (0.005)	0.012* (0.007)	0.002 (0.004)	-0.008 (0.007)
Health Excellent	-0.016 (0.014)	-0.016 (0.018)	-0.008 (0.021)	-0.038** (0.018)	-0.011 (0.024)
Infectious Illness	-0.001 (0.015)	-0.006 (0.019)	-0.004 (0.025)	-0.043** (0.020)	-0.007 (0.025)
Bronchitis	-0.013 (0.012)	-0.024 (0.016)	0.002 (0.018)	-0.002 (0.015)	0.031 (0.020)
Asthma	0.007 (0.008)	0.005 (0.010)	0.004 (0.012)	-0.007 (0.011)	0.007 (0.017)
Trauma	-0.010 (0.007)	-0.011 (0.009)	-0.005 (0.011)	-0.004 (0.010)	-0.000 (0.012)
Individuals	24001	14578	10054	15232	6110
Displacements	1903	1075	894	991	627

  

MENTAL HEALTH (AGES 6+)					
	Father Displaced			Mother Displaced	
	Two Parent	Dual Earner	Single Earner	Two Parent	Single Mom
Mental Health Fair/Poor	0.004 (0.005)	0.006 (0.006)	0.002 (0.008)	0.005 (0.006)	-0.006 (0.011)
Mental Health Exc.	-0.005 (0.017)	-0.021 (0.021)	0.030 (0.025)	-0.047** (0.022)	-0.017 (0.026)
Attention Deficit Dis.	-0.002 (0.004)	-0.002 (0.005)	0.002 (0.006)	0.004 (0.005)	0.012 (0.010)
Depression/Anxiety	0.008* (0.004)	0.009* (0.005)	0.007 (0.006)	-0.006 (0.008)	-0.007 (0.013)
Individuals	16248	10424	6360	11123	4735
Displacements	1271	756	572	723	478

*Note:* The table reports results from linear probability models. Samples in columns labeled *Father Displaced* (*Mother Displaced*) include children whose father (mother) was employed in the first round with at least 1 year tenure, and present estimates of the effects of father's (mother's) job loss due to layoff, job ending or business closure. *Two Parent* indicates that the sample is restricted to children with both parents present in the household in round 1. The sample *Dual Earner* includes children with both parents employed in round 1. *Single Earner* includes children with the father but not the mother employed in round 1. *Single Mom* includes children with no father present in the household in round 1. All regressions include individual fixed effects, dummies for age, calendar year of interview, month, and survey round, a control for the length of the round in days, and linear time trends specific to the health status reported in the first round. Standard errors (in parentheses) are clustered at the household level (\*  $p < .10$ , \*\*  $p < .05$ , and \*\*\*  $p < .01$ ). Estimates are weighted using MEPS sampling weights.

Table 6: Effects of Parental Job Loss by Pre-Displacement Earnings and Parental Education

HEALTH (AGES 1+)								
	Father Displaced				Mother Displaced			
	Family Earnings		Highest Education		Family Earnings		Highest Education	
	Low	High	High School	College	Low	High	High School	College
Health F/Poor	0.019**	-0.002	0.011**	0.001	-0.005	0.001	-0.007	0.002
	(0.009)	(0.005)	(0.005)	(0.006)	(0.005)	(0.004)	(0.005)	(0.004)
Health Exc.	0.001	-0.016	-0.004	-0.015	-0.014	-0.037*	-0.022	-0.031
	(0.019)	(0.018)	(0.019)	(0.019)	(0.020)	(0.021)	(0.021)	(0.019)
Infectious	0.023	-0.017	0.027	-0.019	-0.012	-0.052**	-0.007	-0.052**
	(0.026)	(0.018)	(0.019)	(0.021)	(0.019)	(0.024)	(0.020)	(0.023)
Bronchitis	0.006	-0.022	0.005	-0.022	0.003	0.008	0.018	-0.001
	(0.019)	(0.015)	(0.015)	(0.017)	(0.015)	(0.019)	(0.016)	(0.018)
Asthma	-0.010	0.011	-0.007	0.012	-0.003	0.000	0.007	-0.008
	(0.012)	(0.010)	(0.010)	(0.011)	(0.010)	(0.014)	(0.012)	(0.013)
Trauma	0.017*	-0.020**	0.025***	-0.030***	-0.003	-0.004	0.003	-0.010
	(0.009)	(0.009)	(0.010)	(0.009)	(0.009)	(0.012)	(0.010)	(0.012)
Individuals	8565	16067	10642	14013	9366	11976	8990	12381
Displacements	906	1063	1038	931	942	676	854	764

#### MENTAL HEALTH (AGES 6+)

	Father Displaced				Mother Displaced			
	Family Earnings		Highest Education		Family Earnings		Highest Education	
	Low	High	High School	College	Low	High	High School	College
Mental F/Poor	0.006	0.005	0.008	0.003	-0.005	0.009	-0.000	0.004
	(0.010)	(0.005)	(0.008)	(0.005)	(0.009)	(0.005)	(0.007)	(0.008)
Mental Exc.	0.041	-0.019	0.017	-0.013	-0.035	-0.034	-0.035	-0.031
	(0.027)	(0.020)	(0.024)	(0.022)	(0.023)	(0.026)	(0.026)	(0.023)
ADD	-0.005	0.001	-0.001	-0.001	0.006	0.008	0.010	0.004
	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.007)	(0.008)	(0.006)
Depress/Anx	0.011	0.006	0.012**	0.005	-0.004	-0.009	0.000	-0.011
	(0.008)	(0.004)	(0.006)	(0.005)	(0.009)	(0.010)	(0.007)	(0.010)
Individuals	5500	11284	7369	9431	7061	8797	6850	9030
Displacements	579	749	721	607	716	485	648	553

*Note:* The table reports results from linear probability models. Samples in columns labeled *Father Displaced* (*Mother Displaced*) include children whose father (mother) was employed in the first round with at least 1 year tenure, and present estimates of the effects of father's (mother's) job loss due to layoff, job ending or business closure. *Family Earnings-Low (High)* indicates that the sample is restricted to children whose family had total earnings below (above) 200% of the federal poverty line in round 1. *Highest Education-High School* and *Highest Education-College* samples include children whose parents' highest educational attainment is High School and College, respectively. All regressions include individual fixed effects, dummies for age, calendar year of interview, month, and survey round, a control for the length of the round in days, and linear time trends specific to the health status reported in the first round. Standard errors (in parentheses) are clustered at the household level (\*  $p < .10$ , \*\*  $p < .05$ , and \*\*\*  $p < .01$ ). Estimates are weighted using MEPS sampling weights.

Table 7: Effects of Parental Job Loss on Child Health and Mental Health, by Age

HEALTH (AGES 1+)						
	Father Displaced			Mother Displaced		
	Age 1-5	Age 6-12	Age 13-16	Age 1-5	Age 6-12	Age 13-16
Health F/Poor	0.013 (0.011)	0.003 (0.004)	-0.002 (0.006)	-0.009 (0.005)	-0.001 (0.004)	0.005 (0.008)
Health Exc.	-0.016 (0.022)	-0.000 (0.019)	-0.023 (0.022)	-0.020 (0.026)	-0.044** (0.021)	-0.025 (0.021)
Infectious	-0.028 (0.029)	0.027 (0.022)	-0.026 (0.024)	-0.040 (0.030)	-0.029 (0.021)	-0.025 (0.026)
Bronchitis	-0.023 (0.021)	0.007 (0.018)	-0.035* (0.021)	0.025 (0.024)	0.008 (0.017)	-0.011 (0.020)
Asthma	0.019 (0.015)	0.003 (0.011)	-0.010 (0.011)	0.018 (0.022)	-0.009 (0.012)	-0.011 (0.013)
Trauma	-0.009 (0.012)	-0.017* (0.010)	0.006 (0.015)	-0.014 (0.011)	-0.010 (0.013)	0.016 (0.015)
Individuals	7847	10996	5788	5483	9776	6082
Displacements	641	881	447	417	734	467

  

MENTAL HEALTH (AGES 6+)					
	Father Displaced		Mother Displaced		
	Age 6-12	Age 13-16	Age 6-12	Age 13-16	
Mental F/Poor	0.008 (0.005)	0.001 (0.008)	0.006 (0.006)	-0.004 (0.010)	
Mental Exc.	0.002 (0.020)	-0.003 (0.026)	-0.046** (0.021)	-0.027 (0.025)	
ADD	-0.005 (0.004)	0.007 (0.007)	0.009 (0.007)	0.003 (0.006)	
Depress/Anx	0.007 (0.004)	0.010 (0.008)	0.002 (0.006)	-0.019 (0.014)	
Individuals	10996	5788	9776	6082	
Displacements	881	447	540	321	

*Note:* The table reports results from linear probability models. Samples in columns labeled *Father Displaced* (*Mother Displaced*) include children whose father (mother) was employed in the first round with at least 1 year tenure, and present estimates of the effects of father's (mother's) job loss due to layoff, job ending or business closure. The sample in each column is restricted to children whose age in round 1 was in the age group indicated in the column head. All regressions include individual fixed effects, dummies for age, calendar year of interview, month, and survey round, a control for the length of the round in days, and linear time trends specific to the health status reported in the first round. Standard errors (in parentheses) are clustered at the household level (\*  $p < .10$ , \*\*  $p < .05$ , and \*\*\*  $p < .01$ ). Estimates are weighted using MEPS sampling weights.

## 9 References

- Ananat, E.O., A. Gassman-Pines, D.V. Francis, and C.M. Gibson-Davis (2011). "Children Left Behind: The Effects of Statewide Job Loss on Student Achievement," *NBER Working Paper No. 17104*.
- Ball, T. M., J.A. Castro-Rodriguez, K.A. Griffith, C.J. Holberg, F.D. Martinez, and A.L. Wright (2000). "Siblings, Day-Care Attendance, and the Risk of Asthma and Wheezing during Childhood," *The New England Journal of Medicine*, 343:538-543.
- Banthin, J. S., and T.M. Selden (2003). "The ABCs of children's health care: how the Medicaid expansions affected access, burdens, and coverage between 1987 and 1996." *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 40(2): 133-145.
- Beijers, R. J. Jansen, M.Riksen-Walraven, and C. de Weerth (2011). "Nonparental Care and Infant Health: Do the Number of Hours and Number of Concurrent Arrangements Matter?" *Early Human Development*, 87(1): 9-15.
- Black, S.E., P.J. Devereux and K.G. Salvanes (2012). "Losing Heart? The Effect of Job Displacement on Health," *NBER Working Paper 18660*.
- Bradley, R.H. (2003). "Child Care and Common Communicable Illnesses in Children Aged 37 to 54 Months," *Archives of Pediatrics and Adolescent Medicine*, 157(2): 196-200.
- Brand, J.E., B.R. Levy, and W.T. Gallo (2008). "Effects of Layoffs and Plant Closings on Subsequent Depression Among Older Workers." *Research on Aging*, 30(6): 701-721.
- Bratberg, E., O.A. Nilsen and K. Vaage (2008). "Job Losses and Child Outcomes," *Labour Economics*, 15(2008): 591-603.
- Browning, M. and E. Heinesen (2012). "Effect of job loss due to plant closure on mortality and hospitalization," *Journal of Health Economics*, 31(2012): 599-616.
- Cawley, J. and K.I. Simon (2005). "Health Insurance Coverage and the Macroeconomy," *Journal of Health Economics*, 24(2005): 299-315.
- Cawley, J., A.S. Moriya, and K. Simon (2013). "The impact of the macroeconomy on health insurance coverage: evidence from the great recession," *Health Economics*, forthcoming.
- Classen T.J. and R.A. Dunn (2012). "The Effect of Job Loss and Unemployment Duration on Suicide Risk in the United States: a New Look Using Mass-Layoffs and Unemployment Duration," *Health Economics*, 21: 338-350.
- Coelli, M.B. (2011). "Parental Job Loss and the Education Enrollment of Youth," *Labour Economics*, 18(2011): 25-35.
- Conley, D., and N.G. Bennett (2000). "Is biology destiny? Birth weight and life chances." *American Sociological Review*, 458-467.

- Conley, D., and N.G. Bennett (2001). "Birth weight and income: interactions across generations." *Journal of Health and Social Behavior*, 450-465.
- Currie, J. (2009). "Healthy, Wealthy, and Wise: Socioeconomic Status, Poor Health in Childhood, and Human Capital Development," *Journal of Economic Literature*, 47(1): 87-122.
- Deb, P., W.T. Gallo, P. Ayyagari, J.M. Fletcher, J.L. Sindelar (2011). "The Effect of Job Loss on Overweight and Drinking," *Journal of Health Economics*, 30(2011): 317-327.
- Fairbrother, G.L., A.C. Carle, A. Cassedy and P.W. Newacheck (2010). "The Impact Of Parental Job Loss On Children's Health Insurance Coverage," *Health Affairs*, 29(7): 1343-1349.
- Farber, H. S. (2011). "Job Loss in the Great Recession: Historical Perspective from the Displaced Worker Survey, 1984-2010." *NBER Working Paper 17040*.
- Finch, C.E., and E.M. Crimmons (2004). "Inflammatory Exposure and Historical Changes in Human Life-Spans," *Science*: 305(5691): 1736-1739.
- Gassman-Pines, A., E.O. Ananat, and C.M. Gibson-Davis (2014). "Effects of Statewide Job Losses on Adolescent and Suicide-Related Behaviors," *American Journal of Public Health* 104(10): 1964-1970.
- Gennetian, L.A., H.D. Hill, A.S. London, and L.M. Lopoo (2010). "Maternal Employment and the Health of Low-Income Young Children," *Journal of Health Economics*, 29: 353-363.
- Grossman, M. (2000). "The Human Capital Model," in *Handbook of Health Economics*, A.J. Culyer and J.P. Newhouse (eds.), Volume I, Chapter 7, Elsevier Science B. V.
- Gruber, J. and B.C. Madrian (1997). "Employment Separation and Health Insurance Coverage," *Journal of Public Economics*, 66(3): 349-382.
- Hardy, A.M. and M.G. Fowler (1993). "Child Care Arrangements and Repeated Ear Infections in Young Children," *American Journal of Public Health*, 83(9): 1321-1325.
- Hoynes, H. W., D. L. Miller, and D. Simon (2012). "Income, the earned income tax credit, and infant health." NBER Working Paper No. 18206, National Bureau of Economic Research.
- Jacobson, L.S., R.J. Lalonde, and D.G. Sullivan (1993). "Earnings Losses of Displaced Workers," *American Economic Review*, 83(4): 685-709.
- Kalil, A. and K.M. Ziol-Guest (2008). "Parental employment circumstances and children's academic progress," *Social Science Research*, 37: 500-515.
- Lindo, J.M. (2011). "Parental Job Loss and Infant Health," *Journal of Health Economics*, 30(2011): 869- 879.
- Liu H. and Z. Zhao (2014). "Parental Job Loss and Children's Health: Ten Years after the Massive Layoff of the SOEs' Workers in China." *China Economic Review*, 31(2014):

- Luca, D.L. (2014). "The Long-Term Effects of Post-Neonatal Childhood Health: Evidence from Mandatory School Vaccination Laws," *Mimeo*.
- Mörk, E., A. Sjögren and H. Svaleryd (2013). "Parental Unemployment and Child Health," *Mimeo*.
- Morrill, M.S. (2011). "The Effects of Maternal Employment on the Health of School-Age Children," *Journal of Health Economics*, 30: 240-257.
- Natstad, P., B. Brunekreef, A. Skrondal, and W. Nystad (2005). "Early Respiratory Infections, Asthma, and Allergy: 10-Year Follow-up of the Oslo Birth Cohort," *Pediatrics*, 116(2): e255-e262.
- Oreopoulos, P., M. Page and A.H. Stevens (2008). "The Intergenerational Effects of Worker Displacement," *Journal of Labor Economics*, 26(3): 455-483.
- Page, M., A.H. Stevens and J.Lindo (2009). "Parental Income Shocks and Outcomes of Disadvantaged Youth in the United States," in *The Problems of Disadvantaged Youth: An Economic Perspective*, J. Gruber (ed.), Conference held April 13-14, 2007, published in October 2009, University of Chicago Press.
- Rege, M., K. Telle and M. Votruba (2011). "Parental Job Loss and Children's School Performance," *Review of Economic Studies*, 78(2011): 1462-1489.
- Ruhm, C.J. (2000). "Parental Leave and Child Health," *Journal of Health Economics*, 19(6): 931-960.
- Schaller, J. and A.H. Stevens (2015). "Short-run Effects of Job Loss on Health Conditions, Health Insurance, and Health Care Utilization," *Journal of Health Economics*, advance online publication, doi:10.1016/j.jhealeco.2015.07.003, available online 26 July 2015.
- Solon, G., S.J. Haider, and J. Wooldridge (2013). "What are we Weighting For?" *NBER Working Paper 18859*.
- Soni, A. (2009). "The Five Most Costly Children's Conditions, 2006: Estimates for the U.S. Civilian Noninstitutionalized Children, Ages 0-17," *Agency for Healthcare Research and Quality, Statistical Brief #242*.
- Stevens, A.H. and J. Schaller (2011). "Short-run effects of parental job loss on children's academic achievement," *Economics of Education Review*, 30(2011): 289-299.
- Sullivan, D. and T. von Wachter (2009). "Job Displacement and Mortality: an Analysis Using Administrative Data," *Quarterly Journal of Economics*, 124(3): 1265-1306.

**Table A1: Summary Statistics by Groups, Children of Displaced Fathers**

	Family Type			Family Earnings		Education		Age		
	2-Parent	2-Earner	1-Earner	Low	High	HS	College	1-5	6-12	13-16
<b>Health</b>										
Health F/P	0.023	0.016	0.033	0.042	0.014	0.026	0.021	0.028	0.020	0.023
Health Exc.	0.530	0.550	0.487	0.399	0.584	0.444	0.576	0.546	0.510	0.521
Infectious	0.371	0.384	0.355	0.312	0.401	0.302	0.418	0.419	0.380	0.295
Bronchitis	0.198	0.206	0.183	0.168	0.210	0.156	0.223	0.216	0.200	0.163
Asthma	0.107	0.114	0.091	0.099	0.107	0.094	0.112	0.115	0.110	0.082
Trauma	0.060	0.060	0.056	0.035	0.069	0.037	0.072	0.039	0.061	0.079
<b>Mental Health±</b>										
Mental F/P	0.020	0.015	0.025	0.018	0.020	0.022	0.017		0.015	0.027
Mental Exc.	0.562	0.551	0.558	0.427	0.607	0.484	0.602		0.563	0.536
ADD	0.025	0.025	0.023	0.019	0.027	0.018	0.029		0.022	0.028
Depress/Anx	0.008	0.008	0.008	0.010	0.007	0.004	0.011		0.004	0.015
<b>Health Insurance</b>										
Any	0.903	0.915	0.878	0.794	0.950	0.839	0.940	0.912	0.902	0.879
Private	0.707	0.810	0.546	0.330	0.883	0.504	0.835	0.666	0.715	0.740
Public	0.221	0.127	0.356	0.495	0.087	0.342	0.139	0.278	0.206	0.159
<b>Health Care Utilization</b>										
Doctor Visit	0.426	0.433	0.409	0.417	0.426	0.379	0.452	0.580	0.382	0.284
Checkup	0.154	0.136	0.178	0.177	0.141	0.149	0.155	0.251	0.108	0.099
Diagnostic	0.276	0.300	0.233	0.222	0.297	0.221	0.307	0.387	0.254	0.152
ER	0.034	0.034	0.030	0.023	0.037	0.019	0.041	0.043	0.027	0.026
Prescription	0.314	0.331	0.286	0.281	0.328	0.269	0.342	0.380	0.287	0.269
Antibiotic	0.157	0.168	0.142	0.111	0.180	0.125	0.178	0.221	0.142	0.098
Mental±	0.010	0.011	0.007	0.014	0.008	0.010	0.010		0.011	0.008
Mental Rx±	0.021	0.020	0.021	0.019	0.021	0.015	0.025		0.017	0.027
<b>Demographic and Socioeconomic</b>										
Black	0.103	0.129	0.069	0.096	0.109	0.112	0.100	0.124	0.095	0.097
Hispanic	0.254	0.183	0.348	0.501	0.129	0.435	0.129	0.298	0.224	0.228
HS or Less	0.380	0.320	0.503	0.692	0.251	1.000	0.000	0.353	0.411	0.413
< 200% FPL	0.309	0.170	0.550	1.000	0.000	0.566	0.163	0.373	0.325	0.246
Observations	1903	1075	894	906	1063	1038	931	641	881	447

*Note:* This table reports means estimated with data from the first round of each MEPS panel using sampling weights. The reported number of observations is unweighted. The sample includes children who were 1-16 years old, and whose mother was employed in round 1 with at least 1 year of tenure and lost her job due to a layoff, job ending, or business closure after the first round of the survey. *2-Parent* indicates that the sample is restricted to children with both parents present in the household in round 1. *2-Earner* includes children with both parents employed in round 1. *1-Earner* includes children with the father but not the mother employed in round 1. *Family Earnings-Low (High)* indicates that the sample is restricted to children whose family had total earnings below (above) 200% of the federal poverty line in round 1. *Education-HS* and *Education-College* samples include children whose parents' highest educational attainment is High School and College, respectively. The samples in each column under *Age* are restricted to children whose age in round 1 was in the age group indicated in the column head.

± Mental health sample is age 6+.

**Table A2: Summary Statistics by Groups, Children of Displaced Mothers**

	Family Type		Family Earnings		Education		Age		
	2-Parent	Single	Low	High	High Sch	College	1-5	6-12	13-16
<b>Health</b>									
Health F/P	0.024	0.050	0.046	0.020	0.044	0.024	0.026	0.038	0.029
Health Exc.	0.578	0.504	0.524	0.582	0.490	0.604	0.603	0.510	0.576
Infectious	0.414	0.368	0.365	0.431	0.341	0.446	0.451	0.408	0.338
Bronchitis	0.201	0.174	0.176	0.207	0.160	0.218	0.217	0.192	0.170
Asthma	0.112	0.119	0.113	0.115	0.121	0.109	0.133	0.127	0.078
Trauma	0.045	0.056	0.047	0.050	0.030	0.063	0.027	0.043	0.077
<b>Mental Health<sup>±</sup></b>									
Mental F/P	0.017	0.057	0.052	0.009	0.034	0.026		0.027	0.034
Mental Exc.	0.604	0.500	0.532	0.608	0.533	0.602		0.573	0.569
ADD	0.029	0.056	0.046	0.030	0.025	0.047		0.043	0.029
Depress/Anx	0.029	0.048	0.038	0.032	0.024	0.043		0.017	0.061
<b>Health Insurance</b>									
Any	0.895	0.818	0.785	0.948	0.823	0.908	0.924	0.860	0.837
Private	0.766	0.391	0.386	0.885	0.493	0.770	0.640	0.635	0.680
Public	0.156	0.440	0.431	0.078	0.341	0.170	0.299	0.249	0.183
<b>Health Care Utilization</b>									
Doctor Visit	0.435	0.414	0.400	0.455	0.362	0.480	0.561	0.441	0.283
Checkup	0.158	0.129	0.119	0.176	0.107	0.181	0.268	0.123	0.074
Diagnostic	0.282	0.238	0.238	0.296	0.238	0.293	0.365	0.280	0.158
ER	0.017	0.044	0.039	0.014	0.021	0.029	0.026	0.030	0.019
Prescription	0.344	0.295	0.280	0.373	0.287	0.361	0.417	0.317	0.261
Antibiotic	0.164	0.099	0.107	0.176	0.115	0.165	0.248	0.124	0.073
Mental+	0.019	0.040	0.027	0.024	0.017	0.033		0.026	0.024
Mental Rx+	0.033	0.034	0.024	0.042	0.018	0.046		0.034	0.032
<b>Demographic and Socioeconomic</b>									
Black	0.114	0.346	0.274	0.108	0.224	0.157	0.174	0.202	0.176
Hispanic	0.183	0.267	0.286	0.141	0.313	0.129	0.211	0.220	0.192
HS or Less	0.367	0.585	0.607	0.281	1.000	0.000	0.402	0.449	0.446
< 200% FPL	0.283	0.890	1.000	0.000	0.659	0.328	0.437	0.480	0.494
Observations	991	627	942	676	854	764	417	734	467

*Note:* This table reports means estimated with data from the first round of each MEPS panel using sampling weights. The reported number of observations is unweighted. The sample includes children who were 1-16 years old, and whose father was employed in round 1 with at least 1 year of tenure and lost his job due to a layoff, job ending, or business closure after the first round of the survey. *2-Parent* indicates that the sample is restricted to children with both parents present in the household in round 1. *Single* includes children with no father present in the household in round 1. *Family Earnings-Low (High)* indicates that the sample is restricted to children whose family had total earnings below (above) 200% of the federal poverty line in round 1. *Education-High Sch* and *Education-College* samples include children whose parents' highest educational attainment is High School and College, respectively. The samples in each column under *Age* are restricted to children whose age in round 1 was in the age group indicated in the column head.

<sup>±</sup> Mental health sample is age 6+.



Table A3: Effects of Parental Job Loss on Insurance Coverage and Health Care Utilization, by Pre-Displacement Earnings and Parental Education

HEALTH INSURANCE COVERAGE								
	Father Displaced				Mother Displaced			
	Family Earnings		Education		Family Earnings		Education	
	Low	High	HS	College	Low	High	HS	College
Any Ins.	-0.039*	-0.065***	-0.074***	-0.045***	-0.047**	-0.049**	-0.094***	-0.011
	((0.022)	((0.015)	((0.022)	((0.015)	((0.019)	((0.020)	((0.024)	((0.015)
Private	-0.093***	-0.118***	-0.141***	-0.089***	-0.127***	-0.078***	-0.151***	-0.060***
	((0.022)	((0.018)	((0.022)	((0.019)	((0.020)	((0.024)	((0.028)	((0.016)
Public	0.057**	0.055***	0.063***	0.051***	0.068***	0.027*	0.046**	0.044***
	((0.023)	((0.013)	((0.019)	((0.014)	((0.017)	((0.014)	((0.020)	((0.012)
HEALTH CARE UTILIZATION								
	Father Displaced				Mother Displaced			
	Family Earnings		Education		Family Earnings		Education	
	Low	High	HS	College	Low	High	HS	College
Any Visit	0.018	-0.015	-0.005	-0.004	-0.014	-0.012	0.012	-0.029
	((0.022)	((0.018)	((0.023)	((0.018)	((0.019)	((0.023)	((0.020)	((0.022)
Checkup	-0.027	0.000	-0.018	-0.003	0.017	-0.005	0.026	-0.009
	((0.018)	((0.015)	((0.015)	((0.017)	((0.018)	((0.017)	((0.018)	((0.018)
Diagnostic	0.040**	-0.023	0.004	-0.004	-0.012	-0.003	-0.001	-0.011
	((0.018)	((0.017)	((0.018)	((0.017)	((0.016)	((0.022)	((0.018)	((0.020)
ER	0.010	-0.019**	0.020***	-0.029***	-0.009	0.007	-0.002	0.000
	((0.009)	((0.008)	((0.008)	((0.009)	((0.009)	((0.008)	((0.009)	((0.008)
Psych.+	0.002	0.011*	0.001	0.012	0.005	-0.021**	0.003	-0.017
	((0.004)	((0.006)	((0.003)	((0.007)	((0.013)	((0.009)	((0.007)	((0.013)
Any Rx	0.013	-0.022	-0.020	-0.003	-0.008	-0.021	0.013	-0.037*
	((0.017)	((0.018)	((0.020)	((0.017)	((0.018)	((0.021)	((0.018)	((0.020)
Antibiotic	0.021	-0.024*	-0.008	-0.007	0.003	-0.021	0.003	-0.020
	((0.014)	((0.014)	((0.013)	((0.015)	((0.012)	((0.018)	((0.014)	((0.016)
Mental Rx+	0.005	0.006	0.007	0.006	0.014*	0.006	0.022**	-0.000
	((0.007)	((0.005)	((0.006)	((0.006)	((0.008)	((0.011)	((0.010)	((0.010)
Individuals	5500	11284	7369	9431	7061	8797	6850	9030
Displacements	579	749	721	607	716	485	648	553

*Note:* The table reports results from linear probability models. Samples in columns labeled *Father Displaced* (*Mother Displaced*) include children whose father (mother) was employed in the first round with at least 1 year tenure, and present estimates of the effects of father's (mother's) job loss due to layoff, job ending or business closure. *Family Earnings-Low* (*High*) indicates that the sample is restricted to children whose family had total earnings below (above) 200% of the federal poverty line in round 1. *Education-High School* and *Education-College* samples include children whose parents' highest educational attainment is High School and College, respectively. All regressions include individual fixed effects, dummies for age, calendar year of interview, month, and survey round, a control for the length of the round in days, and linear time trends specific to the health status reported in the first round. Standard errors (in parentheses) are clustered at the household level (\*  $p < .10$ , \*\*  $p < .05$ , and \*\*\*  $p < .01$ ). Estimates are weighted using MEPS sampling weights. + Mental health sample is age 6+.

Table A4: Effects of Parental Job Loss on Insurance Coverage and Health Care Utilization, by Family Type

HEALTH INSURANCE COVERAGE					
	Father Displaced			Mother Displaced	
	Two Parent	Dual Earner	Single Earner	Two Parent	Single Mother
Any Ins.	-0.053*** (0.012)	-0.040** (0.016)	-0.079*** (0.021)	-0.044** (0.017)	-0.051** (0.022)
Private	-0.105*** (0.015)	-0.101*** (0.019)	-0.123*** (0.022)	-0.082*** (0.021)	-0.141*** (0.021)
Public	0.055*** (0.012)	0.065*** (0.015)	0.045** (0.018)	0.028** (0.013)	0.089*** (0.020)
HEALTH CARE UTILIZATION					
	Father Displaced			Mother Displaced	
	Two Parent	Dual Earner	Single Earner	Two Parent	Single Mother
Any Visit	-0.001 (0.015)	-0.001 (0.018)	-0.011 (0.023)	0.001 (0.020)	-0.042* (0.021)
Checkup	-0.008 (0.012)	0.001 (0.014)	-0.024 (0.021)	0.015 (0.016)	-0.013 (0.021)
Diagnostic	0.002 (0.013)	-0.017 (0.017)	0.022 (0.019)	-0.001 (0.018)	-0.018 (0.021)
ER	-0.011* (0.007)	-0.012 (0.009)	-0.008 (0.009)	0.004 (0.007)	-0.011 (0.011)
Psych.+	0.008 (0.005)	0.013* (0.007)	-0.001 (0.005)	-0.011 (0.010)	-0.002 (0.013)
Any Rx	-0.008 (0.014)	-0.014 (0.017)	-0.007 (0.021)	-0.018 (0.017)	-0.011 (0.024)
Antibiotic	-0.005 (0.011)	-0.007 (0.013)	-0.010 (0.017)	-0.020 (0.014)	0.013 (0.016)
Mental Rx+	0.005 (0.004)	0.006 (0.005)	0.005 (0.007)	0.004 (0.009)	0.019 (0.012)
Individuals	16248	10424	6360	11123	4735
Displacements	1271	756	572	723	478

*Note:* The table reports results from linear probability models. Samples in columns labeled *Father Displaced* (*Mother Displaced*) include children whose father (mother) was employed in the first round with at least 1 year tenure, and present estimates of the effects of father's (mother's) job loss due to layoff, job ending or business closure. *Two Parent* indicates that the sample is restricted to children with both parents present in the household in round 1. *Dual Earner* includes children with both parents employed in round 1. *Single Earner* includes children with the father but not the mother employed in round 1. *Single Mom* includes children with no father present in the household in round 1. All regressions include individual fixed effects, dummies for age, calendar year of interview, month, and survey round, a control for the length of the round in days, and linear time trends specific to the health status reported in the first round. Standard errors (in parentheses) are clustered at the household level (\*  $p < .10$ , \*\*  $p < .05$ , and \*\*\*  $p < .01$ ). Estimates are weighted using MEPS sampling weights.

+ Mental health sample is age 6+.