Published in final edited form as:

Child Youth Serv Rev. 2007 June ; 29(6): 782–801. doi:10.1016/j.chilgyouth.2006.12.006.

Welfare, Work, and Health Care Access Predictors of Low-Income Children's Physical Health Outcomes

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Abstract

This analysis examines whether young children's (N= 494) general physical health is associated with parental employment, welfare receipt, and health care access within a low-income population transitioning from welfare to work. A latent physical health measure derived from survey and medical chart data is used to capture children's poor health, and parental ratings of child health are used to identify excellent health. Controlling for a host of factors associated with children's health outcomes, results show that children of caregivers who are unemployed and off welfare have better health than children of caregivers who are working and off welfare. Children whose caregivers are unemployed and on welfare, or combining work and welfare, have health outcomes similar to children of caregivers who are working and off welfare. Health care access characteristics, such as gaps in health insurance coverage, source of primary care setting, and type of health insurance are associated with children's general physical health. Implications of these results for state TANF programs are discussed.

Children in low-income families are more likely to be reported by their caregivers as having poor health and have been shown to have higher rates of mortality, disability, and co-occurring health conditions than children from higher-income families (Starfield, 1997;

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Newacheck & Starfield, 1988; McCarty & Levine, 1999). Furthermore, several studies have found that welfare reform has negatively affected adult health insurance coverage, with implications for access to and utilization of health care for adults as well as for children (Holl, Slack, & Stevens, 2005; Pati, Romero, & Chavkin, 2002; Polit, London, & Martinez, 2001). Although a growing body of research addresses the effects of welfare reform on child well-being, relatively little work has been done to examine the relationship between welfare reform and children's physical health, specifically.

The Illinois Families Study: Child Well-Being (IFS-CWB) is a five-year panel study of families (N=553) in one state who were receiving Temporary Assistance for Needy Families (TANF) in late 1998. In addition to survey data, the IFS-CWB study also gathered longitudinal medical chart data related to the youngest child in each family and administrative data from multiple service systems (e.g., welfare, unemployment insurance) related to the family. We assess whether caregiver employment and welfare status are related to children's general physical health. We also test whether several indicators of health care access (i.e., health insurance coverage, health insurance type, and primary health care setting) partially explain these relationships. To capture children's physical health, we rely on a latent health construct derived from several caregiver report measures and a medical chart indicator. The analyses control for an array of factors that potentially influence caregiver assessments of children's health and health care utilization, including caregiver assessments of personal health, depression, and somatization symptoms, and chronic conditions associated with any children in the home. We also conduct sensitivity analyses that exclude different groups of children likely to have greater health care needs to determine whether our findings hold for a generally healthy population of low-income children.

Background

Much has been written about the passage of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996 and its impact on parents and caregivers transitioning from welfare to work. Furthermore, numerous studies focus on the socio-emotional, behavioral, cognitive, and academic outcomes of children of welfare recipients. Yet there is a striking lack of information on the effect of welfare reform on the physical health of children (Wise, Wampler, Chavkin, & Romero, 2002; Smith, Wise, Chavkin, Romero, & Zuckerman, 2000; Chavkin & Wise, 2002). The small body of existing information suggests that as the number of working poor grow, children are more likely to be in poor health, experience food insufficiency, and suffer from chronic illness (Wise et al., 2002; Chavkin & Wise, 2002; Alaimo, Olson, Frongillo, & Briefel, 2001). However, the influences of caregiver employment, welfare receipt, and family health care access on children's physical health outcomes are not well understood. Potential mechanisms linking welfare reform to child physical health may include changes in health care access, family economic resources, and child care arrangements (Klerman, 2004; Moore & Zaslow, 2004; Smith et al., 2000). In addition, changes in parental health and well-being, or in other domains of child development, may indirectly affect child health (Huston, 2002; Moore & Zaslow, 2004).

Health care access

Access to health care has many dimensions, but a critical element of access to care is health insurance coverage. Over the past 15 years, there has been a decline in the percent of uninsured children. However, this trend differs by family income level (Holahan, Dubay, & Kenney, 2003). Among poor children, a decline in coverage was experienced between 1994 and 2000, whereas near-poor children experienced an increase in coverage during this time period. The emergence of the State Children's Health Insurance Program (S-CHIP) explains some of this increase (Mann, Rowland, & Garfield, 2003; Wolfe, Haveman, Kaplan, & Cho, 2004), although eligible families do not always apply for such coverage. State variation in S-CHIP characteristics (e.g., the availability of assistance with applications, premium charges, whether Medicaid remains a distinct program) has been linked to take-up rates (Wolfe & Scrivner, 2005).

Other research shows that 30% of women who leave TANF have children who were not insured during the previous month, compared to 7% of women still on welfare (Polit et al., 2001). Among low-income children with a chronic illness, 14% of TANF-enrolled children experience gaps in insurance coverage, whereas nearly one-third of non-TANF children experience insurance gaps (Wise et al., 2002). Guendelman and Pearl (2001) find that children in working poor families are more likely to be uninsured and to experience gaps in coverage than children in unemployed poor families. Such evidence suggests that the transition from welfare dependence to employment, at least among low-income, single-parent families, is associated with unstable health insurance coverage for children. Transitional Medical Assistance (TMA) for those who leave TANF is available in most states, but research suggests that some eligible families do not receive it (Mauldon, Nayeri, & Dobkin, 2002), and many families are unaware of the benefit altogether (Lewis et al., 2000).

The source of insurance coverage may affect health outcomes as well. Although working poor families may have access to employer-sponsored health insurance coverage, higher premiums and co-payments may prevent some employees from enrolling or seeking needed health care services (Cutler, 2002). In addition, several researchers have argued that welfare reform has negatively affected adults' health insurance coverage (Pati et al., 2002; Holl et al., 2005), as well as adults' access to and utilization of health care services (Committee on the Consequences of Uninsurance, 2001; Johnson & Crystal, 2000). Parental health insurance coverage and health care utilization are, in turn, strong predictors of children's health care utilization (Hanson, 1998).

Access to and quality of health care may vary by health care setting. Community health centers (CHCs) provide needed services to a population that normally has difficulty accessing care. Uninsured people who have access to community health centers are less likely than uninsured people receiving care in other health settings to delay seeking care because of cost, to go without needed care, or to fail to fill prescriptions for needed medicine (Wilensky & Roby, 2005). CHCs have also been shown to provide more culturally competent care, to improve access to care, and to provide higher quality care for their patients—primarily low-income children and families (Falik et al., 2005; Shi, Stevens, Wulu Jr., Politzer, & Xu, 2004; Ulmer et al., 2000). Enabling services offered by CHCs, such as

transportation, may contribute to these positive outcomes. On the other hand, CHCs have not been found to improve the likelihood that children receive on-time immunizations (Schempf, Politzer, & Wulu, 2003).

Caregivers moving from welfare to work may also face employment-related barriers to accessing health care for their children, which can lead to increased risk of illness, untreated illness, or delays in care (Guendelman & Pearl, 2001; Heymann & Earle, 1999). One potential barrier is restricted flexibility to seek care, which may stem less from the fact that parents are working than from the characteristics of jobs secured by low-income adults. National data suggest that employed poor mothers and mothers of chronically ill children have less sick leave than other employed mothers and a higher likelihood of working nonstandard hours, including evenings, nights, or rotating shifts (Han, 2005; Heymann, Earle, & Egleston, 1996). Such job characteristics may affect parents' ability to bring children to preventive health visits, or to seek treatment for a health problem experienced by a child, particularly if primary care health sites have hours that are not compatible with caregivers' "off-work" schedules.

Economic resources

As more families move off of welfare, the ranks of the working poor are growing. After the passage of PRWORA in 1996, child poverty rates steadily decreased to a low of 16% until 2001. Since 2001, child poverty has risen, with a most recent estimate that nearly 18% of children lived in poverty in 2004 (DeNavas-Walt, Proctor, & Hill Lee, 2005; Federal Interagency Forum on Child and Family Statistics, 2005). Children of the working poor are more likely than nonworking poor families or families who are not poor to experience delayed or missed health care due to financial constraints (Guendelman & Pearl, 2001). Welfare status has also been linked to children's health outcomes. Poor families who are not receiving TANF are less able to afford prescriptions and to have had medical visits in the past year than families receiving TANF (Chavkin & Wise, 2002). Furthermore, children in families whose welfare benefits decrease have greater odds of being food insecure and of being admitted following an emergency department visit than those without decreased benefits (Cook et al., 2002). Children in low-income families and children whose parents have less than a high school education are also more likely to be assessed as having fair or poor health than children from higher socioeconomic strata (Urban Institute, 2002; Weinick, Weigers, & Cohen, 1998; Case, Lubotsky, & Paxson, 2002; Zill, 1996).

Child care

As increasing numbers of current and former welfare recipients enter the labor force, more families have had to secure out-of-home child care arrangements for young children (Fuller, Kagan, Caspary, & Gauthier, 2002). Although extensive research has demonstrated that children's development is not seriously affected when families rely on alternate, high-quality care arrangements (NICHD Early Child Care Research Network, 1998, 2001; Peisner-Feinberg et al., 2001), there is some evidence to suggest subtle effects on physical health linked to child care utilization. For example, children in large group care or who first enter child care after age 3 are more susceptible to communicable illnesses than their peers in smaller group care or who enter care at younger ages (aNICHD Early Child Care

Research Network, 2003a). Children have also been shown to recover faster from illnesses when their parents are present (Heymann, Toomey, & Furstenberg, 1999). Furthermore, poor quality child care has been linked to adverse developmental outcomes (Gaines & Spencer, 2005; NICHD Early Child Care Research Network, 2003b). Although low-income children are more likely to benefit from high-quality child care than higher-income children, they are also less likely to receive high-quality child care (Fuller et al., 2002). It has further been demonstrated that there is a shortage of child care options for children with chronic conditions, such as asthma (Smith, Hatcher, & Wertheimer, 2002; Wise et al., 2002). Parents of chronically ill children may either decide to forgo employment opportunities in the absence of appropriate child care (Gupta, Amsden, Collins, & Holl, 2006), or to place their children in settings that are not adequately equipped to deal with special child health needs.

Caregiver health and well-being

Numerous studies have demonstrated that the physical health of a caregiver, particularly mothers' poor health, is associated with children's poor health (Kahn, Zuckerman, Bauchner, Homer, & Wise, 2002; Minkovitz, O'Campo, Chen, & Grason, 2002; Scalzo, Williams, & Holmbeck, 2005; Casey et al., 2004). For example, when Kahn and colleagues (2002) investigated the association between maternal (physical and mental) health and children's physical health outcomes 3 years after birth, they found that children whose mothers had persistent poor physical health were seven times more likely to be assessed by their mothers as having fair or poor health, 1.8 times more likely to have been hospitalized, and 1.8 times more likely to have asthma than other children. Depressed mothers are also more likely to report their children to be in fair or poor health than mothers who are not depressed (Kahn et al., 2002). Casey and colleagues (2004) found that maternal depression is associated with the loss or reduction of TANF cash benefits and food stamps, as well as child health status and history of child hospitalization. Furthermore, differences have been identified in the preventive practices of depressed and nondepressed mothers (McLennan and Kotelchuck, 2000; Grupp-Phelan, Whitaker, & Naish, 2003; Leiferman, 2002).

This study seeks to improve knowledge about variation in child physical health outcomes within a low-income population and to describe the factors that may explain these differential outcomes. Analyses test whether recent caregiver work and welfare histories are associated with low-income children's general physical health, with additional attention to the role of health care access. Controlling for a host of demographic and family structure characteristics, we hypothesize that:

1. Children of caregivers relying mostly on welfare or a combination of work and welfare are less likely to exhibit poor health and more likely to be reported as having excellent health than children of caregivers relying mostly on work; children of caregivers who rely on neither welfare nor work are more likely to have poor health outcomes than children of caregivers relying mostly on work,
2. The above associations are mediated by health care access (i.e., health insurance gaps, source of primary health care, and type of health insurance), and

3. Indicators of health care access are associated with child physical health outcomes, and these associations persist when other measures associated with child health (e.g., parental health, food hardship, child birth weight) are controlled.

Methods

The analysis involves a subgroup of respondents from the Illinois Families Study (IFS), a six-year longitudinal panel study of TANF-recipient families (Lewis, Shook, Kleppner, Lewis, & Riger, 2000). Respondents for the annual in-person IFS surveys were selected from the 1998 TANF enrollment files of nine Illinois counties, which together represented over 75% of the Illinois TANF caseload. The sampling frame was stratified by region to ensure sufficient numbers of respondents from smaller, less urban counties. The response rate for the baseline IFS survey (i.e., 1999–2000) was 72% (N=1,363; Lewis et al., 2000). In the following sections, we describe the characteristics of the sample of IFS families who are the focus of this analysis.

Sample

All respondents from the baseline IFS survey who had at least one child 3 years of age or younger at the point of this initial interview (N=583) were included in a supplemental study called the Illinois Families Study: Child Well-Being (IFS-CWB). This group of respondents was administered annual surveys in 2001 through 2004 which were designed to gather more in-depth information on the health and well-being of the youngest child in the home (the “focal child”). The response rate for Wave 1 of the IFS-CWB was 95% (N=553), and the retention rate for Wave 2 of the IFS-CWB, conducted in 2002, was 89% (N=494). Administrative data from the Chapin Hall Center for Children’s Integrated Database on Child and Family Programs in Illinois (IDB)¹ were then linked to survey data through a probabilistic matching process (Goerge, Van Voorhis, Lee, 1994). For the present analysis, we use data on the group of families who participated in this second IFS-CWB survey.² Focal children ranged from birth to 5 years of age at the time of the Wave 1 IFS-CWB interview.

Weights were developed to adjust for differences between the composition of the sample and the population of 1998 Illinois TANF grantees from which the IFS sample was originally derived. The base weight is the reciprocal of the selection probability specific to the sampling stratum. The base weights for the IFS-CWB subsample are further adjusted to compensate for the effects of nonresponse in Waves 1 and 2 of the IFS-CWB.

Measures

Dependent variables—Several commonly used indicators of children’s general physical health were assessed in the IFS-CWB survey. Respondents were asked to rate the general health status of the focal child as excellent, very good, good, fair, or poor. This question is

¹See Integrated Database on Child and Family Programs in Illinois (IDB), Chapin Hall Center for Children at the University of Chicago (<http://www.about.chapinhall.org/work/chss.html>).

²Administrative data on work and welfare was available for the full interval between the first and second IFS-CWB surveys, and only partially available for the intervals between subsequent surveys. For this reason, our analysis focuses on only the Wave 2 physical health outcomes of IFS-CWB focal children.

taken from the National Health and Nutrition Examination Survey (NHANES). Respondents were also asked to report the number of days, since the last interview, that the focal child had to stay home in bed because he or she was sick, the number of times the child had to see a doctor or other health professional because he or she was sick, and the number of times the child had to be taken to the emergency department for any reason related to his or her health. These questions were taken from the National Health Interview Survey (NHIS).

In addition, medical charts for each focal child were obtained from birth through the final IFS-CWB survey period (2004). As part of the survey, respondents were asked to sign release of information forms for all medical records related to the focal children. Extensive probes were used to gather information on all medical care provider contacts during the past year. This contact information was then compiled to generate a list of 367 primary and emergency care sites. Each year, these sites were faxed release of information forms for focal children who were reported to receive health care at the sites. Intensive follow-up was performed with each site until the requested information was faxed or mailed back to the IFS-CWB project manager. Charts were then reviewed by trained reviewers and information was abstracted related to the nature of each visit (sick vs. preventive), and to immunizations, screening tests, birth history, developmental milestones, accidents and injuries, and suspected neglect and abuse. Medical charts from all caregiver-reported health care sites for approximately 90% of focal children were gathered for the time period relevant to the present analysis. Although it is not possible to know whether this set of charts represents all sick visits that actually occurred, there is a reasonable correlation (Pearson's $r=.41$, $p<.01$) between, for example, caregiver-reported numbers of sick visits and counts of sick visits from medical charts for the survey interval.

The two child health outcomes addressed in the present analysis were derived from Wave 2 of the IFS-CWB. Analysis to identify a latent physical health variable was conducted using five indicators: (1) caregiver-reported general health status for the focal child; (2) the focal child's number of sick visits to a doctor/health professional (caregiver report); (3) the focal child's number of visits to the emergency department (caregiver report); (4) the number of days focal child stayed home sick (caregiver report); and (5) the focal child's number of sick visits (abstracted from medical chart records). To establish construct validity for this health outcome, a factor analysis using maximum likelihood extraction was conducted.

Examination of the scree plot and number of eigenvalues greater than one indicated a 1-factor solution for indicators 2 through 5. Mean factor loadings for these indicators were (1).90 for caregiver-reported sick visits; (2).50 for emergency department visits; (3).37 for medical chart sick visits; and (4).44 for days home sick in bed. Factor loadings for these variables in other IFS-CWB waves were similarly high (i.e., above .30), with one exception. The indicator for "days home sick in bed" did not load substantially in IFS-CWB Wave 1 (loading=.03), when a larger proportion of focal children were infants, and caregivers were perhaps less likely to distinguish staying home in bed due to illness from the typical infant activity of "staying home in bed." Higher scores on this latent health variable indicate poorer health.

In addition, the latent health variable for Wave 2 of the IFS-CWB was correlated (not shown) with the same factor across waves (Pearson's $r=.30$ – $.49$, $p<.001$), and with

concurrent measures of health (e.g., asthma diagnosis, functional limitation, receipt of Supplemental Security Income [SSI] for focal child, condition requiring prescription medication, “activity-limiting” condition, unmet medical needs for focal child; Pearson’s $r = .13$ – $.26$, $p < .001$). These analyses suggest that the latent variable captures, at least in part, a “general physical health” status. However, this variable is also undoubtedly influenced by health care access and utilization. Thus we cannot be certain whether this measure taps actual health or health care utilization. We address this issue in greater depth in the discussion.

Interestingly, caregiver assessments of the focal children’s general health status (rated as excellent, very good, good, fair, or poor) did not load on the health factor described above. Instead, this variable was used as a separate dependent variable in the analyses. This variable was dichotomized to indicate excellent health (compared to all other ratings). Given the generally healthy status of the focal children, there was little variation on this measure with respect to fair or poor health status. The decision to distinguish excellent health from other generally positive health assessments affords an understanding of what predicts caregiver perceptions of exceptional physical health, which may also influence the behaviors of caregivers related to health care utilization on behalf of the focal children.

Welfare and work covariates—Administrative data from the Illinois Department of Human Services and the Illinois Department of Employment were used to create work and welfare predictor variables. For every respondent, information was extracted on whether they received TANF cash benefits and whether they had earnings of at least \$300 in each of the four quarters prior to their Wave 2 IFS-CWB interview. Five dichotomous variables were then constructed, each indicating a specific welfare and work combination: (1) mostly working (i.e., 3 or more quarters with work and no welfare); (2) mostly on TANF (i.e., 3 or more quarters with welfare and no work); (3) mostly combining welfare and work (i.e., 3 or more quarters with both welfare and work); (4) neither working nor receiving welfare (i.e., 3 or more quarters without welfare or work); and (5) various combinations of work and welfare (i.e., no 3 quarters alike on any of the above combinations). A similar strategy for measuring combinations of welfare and work has been used in other research (e.g., Dunifon, Kalil, & Danziger, 2003). Table 1 shows the descriptive statistics for all variables used in the analysis. The most prevalent welfare/work category is mostly working (28%), followed by neither welfare nor work (27%), varying welfare and work combinations (21%), mostly on welfare (17%), and mostly combining welfare and work (7%). The “mostly on welfare” category is the omitted category in the multivariate analyses, since this group has particular policy relevance for analyses related to welfare reform policies.

Health care access covariates—Health care access variables include a dichotomous measure of whether each focal child experienced a gap in health insurance coverage in the year prior to the Wave 2 IFS-CWB interview (6%), and a dichotomous measure of whether this child was covered by a private (namely, employer-sponsored) health insurance plan, as opposed to Medicaid or KidCare (the Illinois Children’s Health Insurance Program) in Wave 1 of the IFS-CWB (9%). Three additional dichotomous measures indicate the source of the child’s primary health care (i.e., private clinic or physician, hospital clinic, or a community

health center) as of Wave 1 of the IFS-CWB. Most focal children in the sample relied on community health centers for primary care (51%), followed by hospital clinics (31%), and private clinics or physicians (17%). Only three children were reported by their caregivers to lack a primary care physician. The omitted category for primary health care setting was hospital clinics.

Demographic and family structure covariates—Analyses control for a number of demographic and family structure characteristics, including caregiver's education and age, caregiver's age at birth of first child, number of minor-aged children in the home, race, ethnicity, marital and cohabitation status, focal child's gender and age, and county of residence. Controls for the cumulative number of months receiving welfare (1989–1998) and number of quarters with at least \$300 in earnings (1995–1998) were included, in addition to an income variable representing the sum of earnings, cash welfare benefits, and food stamps in the year prior to the IFS-CWB Wave 2 survey interview. A variable capturing the number of months between Waves 1 and 2 IFS-CWB interviews was also included.

Other covariates—Analyses also controlled for whether the focal child spent time in non-parental child care settings, caregiver somatization and depressive symptoms, caregiver's assessment of her own general health, parenting stress, and food and housing hardships. Food and housing difficulties may affect child health directly, when the former is associated with poor nutrition or food insufficiency or the latter is associated with poor housing quality. These hardships may also affect child health indirectly, if they elevate levels of caregiver stress or depression, exacerbate caregiver health problems, or otherwise impede caregivers' abilities to work or seek health care.

Although the research questions posed for this analysis presume that work, welfare, and health care access causally influence children's health outcomes, it is also possible that children's health influences caregiver welfare and work decisions, as well as such health care access issues as insurance coverage and source of primary care. We attend to this issue in several ways. We conduct sensitivity tests with our final multivariate models that exclude groups of focal children who are likely to have higher health care needs than other children in the sample; namely, those who are reported by their caregivers to have a physical health condition that limits activity (e.g., asthma, diabetes, heart conditions); those who receive SSI for a diagnosed disability, and those who had low birth weights (i.e., < 2,500 grams). SSI also represents a potentially important source of income for a family, as well as an additional pathway to public health insurance coverage for the focal child. Finally, we control for the number of children in the family with activity-limiting conditions (including mental health and behavioral problems), since the presence of other children with health issues may influence caregiver work, welfare, and health care behaviors that affect the focal child. We control for all of the above factors in the final multivariate models.

Analysis plan

Step-wise OLS and logistic regression techniques were used to test the two health outcomes. Exploration of the health factor variable properties revealed a reasonably normal

distribution, enabling the use of OLS techniques. Three blocks of variables were entered into each model, in step-wise fashion. In the first step, demographic and family structure covariates, along with welfare and work covariates, were entered. Step two integrated health care access variables, and step three added measures of economic resources, child care arrangements, and caregiver health and well-being. Step three also included controls for the presence of a chronic condition associated with the focal child as well as activity-limiting conditions associated with any children in the home.

Results

Correlational analyses, presented in Table 2, did not yield any bivariate associations between the welfare and work categories and the two health outcomes—a necessary condition for a test of mediation (Baron & Kenny, 1986). However, receiving health care in a private practice setting is positively associated with the latent health variable, indicating that children whose primary care is provided in such settings exhibit a higher rate of health care utilization for illness, which may indicate poorer health. Similarly, there is an inverse relationship between the receipt of health care in a private practice setting and ratings of excellent health. CHC-based primary care is inversely associated with the latent health variable, but unrelated to ratings of excellent health. Private insurance coverage is positively associated with excellent health.

One-way ANOVA or Chi-square tests were conducted, depending on the nature of each covariate, to test for statistically significant differences across the five welfare and work categories. Covariates that have a statistically significant association with welfare/work status are presented in Table 3. Statistical significance indicates that the mean for at least one welfare/work category is significantly different from the other categories for the specific covariate. Results show that caregivers relying mostly on work have higher levels of income, more quarters with employment, and shorter welfare durations. Caregivers relying on mostly welfare, different combinations of work and welfare, or neither work nor welfare have lower incomes and less work experience, on average. Caregivers relying on neither welfare nor work do not, however, have longer welfare histories than those who have relied mostly on work. As would be expected, mostly employed caregivers tend to have fewer and older children, while those relying primarily on welfare have younger children, and those combining work and welfare have a greater number of children. Caregivers receiving welfare (in the absence of work or in combination with work) and caregivers who have multiple transitions from one welfare/work status to another are less likely to be married or cohabiting, while caregivers who rely mostly on work or who rely on neither welfare nor work have higher rates of marriage or cohabitation, on average. Those mostly working tend to have lower levels of food hardship and parenting stress, while those relying on neither welfare nor work tend to have higher levels of food hardship and parenting stress.

Table 4 presents results from the final OLS and logistic regression models predicting scores on the latent health variable and the likelihood of a caregiver report of excellent child health, respectively. Only the coefficients for key predictors (i.e., welfare/work categories and health care access variables) are shown, although other covariates listed in Table 1 were included in the final model for each health outcome. Children of welfare-reliant caregivers

were no more likely to have poor health (or utilization of health care for illness) than children of primarily employed caregivers. Contrary to expectation, children with caregivers who relied on neither welfare nor work in most of the four quarters preceding their IFS-CWB Wave 2 survey interview had lower scores on the latent physical health variable (indicating better health or less sick care utilization) than children with caregivers who relied mostly on work. This effect emerged in the initial step and persisted through the final step, when other covariates associated with child health were controlled. Results for the latent health variable model further show that gaps in children's health care coverage are associated with worse general health (or greater sick care utilization). Also, children whose primary care setting was a private practice setting were more likely to have poor health (or to use sick care) than children whose primary care setting was a hospital clinic.

Results for the final logistic regression model predicting caregiver assessments of excellent child health are also shown in Table 4. Initially (in steps 1 and 2, not shown), children with caregivers who relied mostly on welfare were less likely than children with caregivers who relied mostly on employment to be rated as having excellent health. However, when other factors associated with child health were added in the final step, this association was no longer statistically significant. Private insurance coverage is positively associated with ratings of excellent health, and private practice settings are inversely associated with ratings of excellent health.

Since each respondent was presented with the option of rating the focal child as having "excellent" health, we assume that a rating of "very good" health reflects positive, but less than optimal, health. However, it is possible that some respondents do not distinguish between "very good" and "excellent" health. The logistic regression analysis in Table 3 was repeated (not shown) using a dichotomized health rating of "very good" or "excellent" versus all other ratings of health to determine whether results are similar with a slightly different specification of positive health. Results from this analysis showed that children with caregivers relying mostly on welfare, as well as children with caregivers who relied on multiple combinations of welfare and work, were less likely than children of mostly employed caregivers to be rated in positive health. These effects did not lose statistical significance in the final regression step. Private insurance coverage and primary care settings did not predict ratings of very good or excellent health.

The OLS and logistic regression analyses were replicated using different referent groups to further assess differences in effects across welfare and work categories. In the OLS models, children with caregivers relying on neither welfare nor work had lower scores on the latent health variable than children with caregivers relying on multiple combinations of welfare and work. In the logistic regression models, children with caregivers relying on neither welfare nor work were more likely than children with caregivers relying mostly on welfare, and less likely than children with caregivers relying on multiple welfare and work combinations, to be rated as having excellent health.

A series of sensitivity tests was conducted to determine whether observed findings for welfare, work, and health care access are robust when three groups of children with greater health care needs are excluded: (1) focal children reported by their caregivers to have an

activity-limiting condition related to a chronic physical health problem (7%); (2) children who were reported to have low birth weight (14%); and (3) children for whom caregivers were receiving SSI benefits (8%). Each of these groups of children was sequentially excluded and then replaced (rather than cumulatively excluded) from the sample. With respect to the latent physical health outcome, the original findings related to primary care settings and the no welfare/no work category persisted in all three alternate models. The finding that health insurance gaps were associated with the latent health variable persisted in one of the two alternate models; insurance gaps did not retain statistical significance when children with low birth weights or SSI coverage were excluded from the analysis. For the sensitivity tests predicting excellent health ratings, private insurance coverage remained statistically significant in all three alternate models. However, the finding that private practice settings were inversely associated with excellent health ratings was sustained only in the model that excluded children with chronic physical health problems; this finding was not sustained in the models excluding children with low birth weights or SSI coverage.

Discussion

The goal of this analysis was to understand welfare, work, and health care access patterns and subsequent child physical health among low-income families. Support was not found for the hypothesis that children with caregivers relying mostly on welfare or a combination of work and welfare, as opposed to mostly work, exhibit better health outcomes. In fact, initial logistic analysis steps indicated that reliance on mostly welfare was associated with less positive health ratings than reliance on mostly work. This association persisted through the final logistic regression step when the measure of positive health indicated ratings of “very good” as well as “excellent,” but did not persist when the measure indicated only “excellent” ratings of health. The results from tests of associations between welfare/work categories and other covariates (Table 3) suggest that this finding may be partially driven by differences in economic and social support, given that welfare-reliant caregivers have lower incomes and lower rates of marriage and cohabitation, on average.

Results from analyses related to the latent health outcome suggest that children with predominantly working caregivers are no healthier than children with welfare-dependent caregivers. One interpretation of this result is that, under welfare reform policies, making the complete transition to work does not necessarily enhance child health. However, opportunities for combining welfare and work in Illinois allow some recipients to more effectively balance work, income, and family needs, and even families with children who have health problems may be able to successfully move into employment over time. This may reduce (although it does not eliminate) bias from selection into particular welfare and work combinations associated with child health problems. During the time frame of the present analysis, the group of respondents who combined welfare and work was relatively small in size ($n=33$), indicating that few respondents spent much time in this status. Analyses of the IFS sample in earlier time periods were, however, characterized by higher rates of combining welfare and work (Lewis et al., 2000), suggesting that at least some families have transitioned more gradually off of welfare.

The finding that children of caregivers who were not relying on work or welfare were less likely to have poor health (or to use sick care) is unanticipated. Since this group had, on average, higher rates of marriage and cohabitation than welfare-reliant families, it is possible that income from a partner explains this finding.³ However, analyses controlling for marriage and cohabitation and additional analyses (not shown) that included a measure of household income from the previous calendar year did not diminish the effect associated with the no work/no welfare category. Although other important sources of income are controlled (e.g., SSI, food stamps), there may be unmeasured sources of income, such as income from informal work, that explain this finding.

It is also possible that the no work/no welfare group has, on average, healthier children, and caregivers may perceive less need for pursuing welfare or work as a means of accessing health care insurance. However, the finding pertaining to this group was not mediated by health care access, and the results of the sensitivity tests that exclude chronically ill children did not indicate that reverse causality explains the observed associations in multivariate models.

One interpretation of this unexpected result is that some families who forgo welfare and work for long durations may have fewer income needs or may experience greater personal or familial costs in being away from young children. Engaging in other work activities to comply with welfare rules or to get ahead financially may be less important to such families, although not at the expense of children's health. It is notable that the no work/no welfare group represents the second largest category of welfare/work combinations. As discussed in the study by Coley et al. in this issue, this group appears to be functioning better in some areas and worse in others relative to groups receiving welfare, working, or both. In order to address the needs and capitalize on the strengths of low-income families in which the primary caregiver is neither working nor receiving welfare, it is critical to gain a better understanding of their diverse characteristics and situations and the different components of the "safety net" that supports them.

We hypothesized that welfare and work would be related to child health, and that these relationships would be partially explained when measures of health care access are controlled. Results do not support this mediation hypothesis, since the inclusion of health care access measures did not alter the observed relationships (or lack thereof) between welfare, work, and child health. However, health care access variables made independent contributions to the models. Children's health insurance gaps were predictive of the latent health variable in the expected direction. It may be argued that caregivers are more likely to seek out and apply for health care coverage when one or more children have ongoing health care needs, and that caregivers with relatively healthy children are less likely to seek health insurance coverage. However, if this is true, then coverage gaps should be associated with better health, or at least have no association with health outcomes. It is important to note that this finding was not sustained in two of three sensitivity tests excluding children with higher health care needs (i.e., those with SSI and those who had low birth weights). It is also

³This finding is not likely explained by partner insurance status, since children with insurance through a respondent's partner or through a non-resident father were accounted for in the measures of insurance coverage and type.

important to note that relatively few children experienced gaps in coverage, suggesting that, at least in Illinois, this particular contributory factor for poor child health outcomes is not pervasive in the population of families transitioning from welfare to work. Still, given previous research findings that the working poor are at greater risk of being uninsured than those receiving welfare, it is possible that gaps in coverage could increase as more families move into low-wage jobs without adequate health insurance benefits.

Another key finding from this study is that the primary care setting may be an important predictor of children's health outcomes. Compared to hospital settings, private care settings were related to poorer health outcomes among the focal children. One interpretation is that private practice settings have less experience in delivering care to high-risk populations and are less well-equipped to deliver care to publicly insured and uninsured patients. It is also possible that families who rely on CHCs or outpatient hospital settings seek health care differently than families who rely on private clinics or physicians, or experience different types of barriers to care that were not measured in the present analysis (e.g., inconvenient hours or location). The finding that private insurance (namely, employer-sponsored insurance) increases the likelihood of an excellent health rating is perhaps more suspect, given that the analyses did not control for a wide range of human capital measures, which may be associated with the likelihood of securing a job with private health insurance benefits.

Several limitations of the present analyses deserve mention. First, the findings cannot support a causal association between work, welfare, health care access, and subsequent child health outcomes, given the nonexperimental design and likely bias associated with selection into welfare and work categories (Hill, Waldfogel, Brooks-Gunn, & Han, 2005). Second, this study is situated in a single state, thereby limiting generalizability of the findings. Third, our measures of child health are heavily influenced by health care utilization (for the latent health outcome) and caregiver assessments of health (for the positive health rating), both of which may be inaccurate reflections of actual child health. Fourth, this analysis focused on a sample of relatively healthy children, so results may not adequately capture the experiences of children with more serious health problems or health care needs. Our analyses do not shed light on whether welfare or work is associated with the incidence of more severe health conditions or functional limitations.

Because several of the welfare and work categories contain a small number of sample members (e.g., only 33 children had caregivers who relied mostly on combinations of welfare and work, and 85 had caregivers who relied mostly on welfare), it is also possible that analyses lack sufficient statistical power for detecting effects. With several p-values associated with welfare and work status variables approaching statistical significance, particularly in the OLS regression model, low statistical power may be partially responsible for the lack of findings associated with welfare and work status.

Several strengths of the study are also noteworthy. Given the longitudinal design of the study, lagged predictors were used in addition to a comprehensive set of controls to reduce omitted variable bias. Since complete administrative data on TANF and employment were available for only the first IFS-CWB survey interval, all four waves of survey information

were not used. In future analyses, analytic techniques that reduce bias from unmeasured factors (e.g., fixed-effects approaches) could be used. Nonetheless, the descriptive results that were generated are useful for understanding which families experience health hardships or positive health outcomes. This information may be helpful to social welfare policymakers who seek to improve programs that facilitate the transition from welfare to work, and for health agency administrators and policy makers who need to target health services effectively or plan for additional needed health services.

This study is also unique in terms of the measures used to assess child health. The validity of typical health indicators applied to toddler and pre-school-age children have been critiqued, in that they often do not measure actual health but rather health care utilization, or parental assessments that can be influenced by the health of the caregiver (Wolfe & Sears, 1997). Indeed, our latent health measure suffers from the same criticisms, since it comprises several of these typical indicators of health. On the one hand, our measure may be influenced by high utilization of sick care stemming from improved health insurance coverage. On the other hand, our measure captures frequency of emergency visits, which may stem from prolonged lack of access to care for minor illnesses. The latent health measure also relies on both medical chart and parental reported counts of sick visits, and thus partially overcomes bias from inaccurate recall by caregivers. Finally, the inclusion of a count of days “sick in bed” may capture at least some illness that is untreated. Taken together, this measure is likely to represent a reasonable picture of frequent (or infrequent) illness. The model predicting frequent illness is complemented by the model predicting excellent health. This improves our understanding of potential health outcomes associated with welfare reform, specifically for younger children who are generally healthy.

Conclusion

Results from this study offer support for strengthening multiple dimensions of health care access for low-income and working poor families. Despite recent expansions in coverage to low-income populations (e.g., S-CHIP), some children continue to experience gaps in coverage that are shown, in this analysis, to be related in the expected direction to both poor health and positive assessments of health. Researchers and policymakers should take steps to monitor trends in health insurance coverage among the working poor, and states should maximize reliance on S-CHIP and TMA programs through intensive outreach and simplified eligibility determinations. In addition, the effects of recent cuts in state Medicaid programs must be closely watched, to ensure that vulnerable children and families do not experience declines in health. Closer attention should also be paid to the quality of health care to which low-income families have access, including how it varies by health care setting and source of insurance. This analysis raises some questions about the quality of care available to low-income families through private practice settings given that children who received primary care in a private practice setting fared worse, relative to those receiving primary care in hospital settings, in terms of their health outcomes. However, the data do not shed light on the nature of the differences in care between private settings and both CHCs and hospital clinics.

The recent history of TANF includes multiple extensions that did not substantially alter the nature of the program. With the reauthorization of TANF in the Deficit Reduction Act of 2005, policymakers should pay closer attention to families who are transitioning on and off of TANF, in order to understand the context in which they are attempting to make ends meet, and the adequacy and stability of their safety net, particularly as it pertains to health care access. It is also unclear from our analysis why children with primary caregivers who are neither working nor receiving TANF had better health outcomes. More research is needed to shed light on the types and stability of circumstances associated with this group, particularly given our findings that this group fares worse on some indicators of economic hardship and stress than other welfare/work groups.

Illinois has been characterized as a relatively balanced state in terms of the combination of incentives and penalties embedded in its welfare policies (Lee et al., 2004). The state has also made great gains in extending coverage to low-income children (Joseph, 2004). As a result, the findings presented in this analysis are likely to represent what children experience in a “middle-of-the-road” state (Lee, Slack, & Lewis, 2004). States should also consider adopting policies such as Illinois’ income disregards and “stopped clock” policies for recipients who work while receiving welfare, generous definitions of work activity (e.g., inclusion of education), and judicious use of sanctioning policies. These steps will help ease the transition from welfare dependence to work that will likely sustain families in the workforce and improve their economic situations, which may, in turn, enhance or maintain children’s health. In the next era of social welfare policy debate, states must strive to learn from each other if they hope to improve outcomes for low-income families. Welfare reform’s success should not merely be judged by reduced caseloads. Rather, helping families achieve gains in income, health insurance coverage, and improved child well-being (e.g., health, development, cognition, school achievement) rather than the absence of serious negative outcomes should be the ultimate goals of our social welfare system. Setting such goals will help foster innovations and incentives for states and localities in their service delivery strategies, which will reap tremendous long-term benefits in terms of child, family and societal well-being.

Acknowledgments

This research was supported by the John D. and Catherine T. MacArthur Foundation, the Joyce Foundation, the Woods Fund of Chicago, the National Institute of Child Health and Human Development (R01 HD39148 and K01 HD41703), and the Administration for Children and Families (90PA0005). Administrative data linkages were developed by the Chapin Hall Center for Children at the University of Chicago, and survey data were collected by the Metro Chicago Information Center (MCIC). The authors would also like to thank Jan Blakeslee, Elizabeth Evanson, Barbara Wolfe, Katherine Magnuson, Lawrence Berger for their comments. Please request reprints from Kristen Slack (ksslack@wisc.edu).

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Table 1

Descriptive statistics (N=494)

	Percentage	Mean	SD	Min.	Max.
Latent health variable	--	0.0	0.9	-1.0	3.0
Excellent health rating	54.2	--	--	0.0	1.0
Work/welfare in year prior to IFS-CWB Wave 2:					
Mostly work	28.3	--	--	0.0	1.0
Mostly welfare	17.2	--	--	0.0	1.0
Mostly combining work and welfare	6.7	--	--	0.0	1.0
Neither welfare nor work	27.0	--	--	0.0	1.0
Work and welfare varies	20.8	--	--	0.0	1.0
Focal child had gap in health insurance	6.4	--	--	0.0	1.0
Primary care setting:					
Private physician	16.9	--	--	0.0	1.0
Community health clinic	50.9	--	--	0.0	1.0
Hospital	31.2	--	--	0.0	1.0
Private insurance	8.5	--	--	0.0	1.0
Cumulative # of months on welfare as of sampling month (1998)		73.3	36.2	1.0	116.0
Number of quarters with \$300 or more in earnings 1995–1998	--	3.9	4.6	0.0	16.0
Respondent's income from employment, welfare, and food stamps in year prior to IFS-CWB Wave 2	--	\$9,162	\$8,050	0	\$56,909
Number of minor-aged children in family	--	2.9	1.4	1.0	8.0
Respondent's age at first child's birth	--	19.6	4.0	10.4	37.6
Respondent's age (Wave 2 IFS-CWB)	--	29.0	6.6	19.0	57.0
Respondent race/ethnicity:					
Hispanic	10.6	--	--	0.0	1.0
Non-Hispanic white	7.1	--	--	0.0	1.0
Non-Hispanic black or other race	82.3	--	--	0.0	1.0
Respondent married or cohabiting	17.3	--	--	0.0	1.0
Respondent has high school degree or GED	69.0	--	--	0.0	1.0
Focal child gender: female	44.8	--	--	0.0	1.0
Focal child age (in months)	--	28.2	16.2	0.0	68.0

	Percentage	Mean	SD	Min.	Max.
Respondent: somatization symptoms	--	1.4	2.1	0.0	7.0
Respondent: depressive symptoms	--	4.9	7.2	0.0	36.0
Respondent: self-rated overall physical health	--	3.7	1.2	1.0	5.0
Food hardship scale	--	5.8	1.5	5.0	15.0
Parenting stress scale	--	15.4	4.6	8.0	32.0
Housing hardship scale	--	0.6	1.2	0.0	7.0
Focal child has chronic physical health condition that limits regular activity	6.7	--	--	0.0	1.0
Focal child had low birth weight	14.1	--	--	0.0	1.0
Focal child receives SSI	7.9	--	--	0.0	1.0
Number of children in family with an activity-limiting condition	--	0.2	0.6	0.0	4.0

Table 2

Correlation among child health outcomes, health care access, and work/welfare status variables (N=494)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. Latent physical health	1.00											
2. Excellent health	-.15**	1.00										
3. Gap in health insurance	0.08	-0.07	1.00									
4. Private practice setting	0.21**	-0.15**	-0.04	1.00								
5. Community health center	-0.10*	0.03	-0.01	-0.43**	1.00							
6. Hospital clinic setting	-0.03	0.04	0.06	-0.28**	-0.69**	1.00						
7. Private insurance	-0.06	0.10*	0.03	0.09	-0.19**	0.16**	1.00					
8. Mostly work	-0.01	-0.01	0.00	0.05	-0.09*	0.08	0.26**	1.00				
9. Mostly welfare	0.05	-0.06	-0.12*	-0.03	-0.06	0.10*	-0.14**	-0.29**	1.00			
10. Mostly welfare and work	0.03	0.05	0.05	-0.06	0.06	0.00	0.03	-0.17**	-0.12**	1.00		
11. Neither welfare nor work	-0.05	0.03	0.06	0.09*	0.00	-0.10*	-0.09*	-0.38**	-0.28**	-0.16**	1.00	
12. Work and welfare varies	0.00	0.00	0.01	-0.09	0.12**	-0.07	-0.08	-0.32**	-0.23**	-0.14**	-0.31**	1.00

* p<.05;

** p<.01

Table 3

Statistically significant ($p < .05$) associations between welfare/work status variables and other covariates (N=494)

Covariates	Mostly work (n=140)	Mostly welfare (n=85)	Mostly combining (n=33)	Mostly neither (133)	Welfare/work varies (n=103)
Cumulative number of months on welfare as of sampling month (1998)	65.1	83.5	85.4	69.8	70.4
Number of quarters with \$300 or more in earnings 1995–1998	6.7	2.7	4.2	3.0	3.3
Income from employment, welfare, food stamps in year prior to IFS-CWB Wave 2	\$17,416	\$6,642	\$16,810	\$2,283	\$7,248
Number of minor-aged children in family	2.6	3.0	3.6	2.9	3.0
Respondent's age in years at first child's birth	19.9	18.4	20.7	20.2	19.6
Respondent's age in years (Wave 2 IFS-CWB)	29.2	26.8	31.8	30.6	27.9
Respondent married or cohabiting	24.6%	12.9%	8.0%	23.2%	7.7%
Respondent has high school degree/GED	84.8%	50.0%	80.0%	67.9%	72.5%
Focal child's age in months	32.5	22.3	28.2	27.1	25.5
Food hardship (range: 5 – 15)	5.5	5.6	5.7	6.1	5.9
Parenting stress (range: 8 – 32)	14.4	15.6	16.1	16.3	15.3

Table 4

Multivariate models predicting child health outcomes (N=470)

	Latent Physical Health		Excellent Health	
	Beta (SE)	p-value	Odds Ratio (SE)	p-value
Welfare and work categories (reference group = mostly working):				
Mostly on welfare	-.25 (.16)	.11	.56 (.48)	.23
Mostly combining	-.04 (.18)	.89	1.68 (.55)	.34
Neither work nor welfare	-.54 (.17)	.002	1.80 (.50)	.23
Work and welfare varies	-.23 (.15)	.14	.74 (.46)	.50
Focal child had gap in health insurance	.49 (.18)	.008	.35 (.51)	.04
Primary care setting (reference group = hospital clinic):				
Private practice setting	.51 (.14)	.001	.44 (.40)	.04
CHC	-.03 (.09)	.78	.80 (.27)	.42
Private insurance	-.17 (.15)	.26	3.23 (.47)	.01
Constant	1.46 (.52)	.01	.52 (1.52)	.67
Adjusted R ² =16%			-2 LL	461.3

Note: Analyses also control for other covariates in Table 1, and the number of months between IFS-CWB Wave 1 and Wave 2 survey interviews.