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Living Arrangements and Child Health: Examining Family Structure Linkages with Children's Health Insurance and Health Status

Kathleen M. Ziol-Guest

Rachel Dunifon

Department of Policy Analysis and Management

Cornell University

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Abstract

Using data from the 1999 and 2002 rounds of the National Survey of America's Families (NSAF) on 67,336 children ages zero to 17, this paper examines the association between family structure and children's health insurance status and health. Unlike previous research, this paper includes children residing in a wide range of living arrangements, including stepfamilies, with a single father, with cohabiting parents, and with custodial grandparents. Findings suggest that health insurance status and reported physical and mental health, vary depending on the family structure in which the children reside. Specifically, we find very low rates of uninsurance and high rates of public insurance among children of single mothers. However, results also indicate higher rates of uninsurance among children in custodial grandparent, cohabiting, and single father families. Children living with a single father have the best health outcomes, whereas children living with custodial grandparents and single mothers often fared the worse (in particular when looking at poor health and mental health, respectively).

Key words: Child health insurance; Child health; Family structure; Single parent; Stepparent; Cohabitation; Grandparent

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Recent decades have seen dramatic changes in the living arrangements of U.S. children. In 2011, most children (69%) lived with two parents; 92% of those with both biological/adoptive parents. A total of 27% of children lived with one parent, the majority (87%) with their mothers. In addition, 12% percent of children lived with at least one grandparent; 10% lived in three-generational households, consisting of a parent and a grandparent, while 2% lived with a grandparent and no parent in the household, often called a custodial grandparent family. Finally, 4% of U.S. children lived with cohabiting parents, consisting of one parent and his or her non-marital romantic partner, who may or may not be the child's biological parent (U.S. Census Bureau, 2011).

The health care landscape for children has also changed in recent years. Between 1987 and 2010, the percentage of children with private health insurance declined, whereas the proportion of those without insurance increased (http://www.childstats.gov/americaschildren/care.asp). Over this same period of time, rates of public insurance nearly doubled, due to Medicaid expansions in the 1980's and the 1990's and the introduction of the Children's Heath Insurance Program (CHIP) signed into law in 1997, which provides health coverage to nearly 8 million children in families with incomes too high to qualify for Medicaid (Heck & Parker, 2002). These expansions have undoubtedly expanded access to coverage for U.S. children. However, many children remain uninsured despite being eligible for public insurance (Dubay and Kenney 1996; Selden, Banthin, and Cohen 1998). A recent study examining child support eligible children found that of those who were uninsured 79% were eligible for Medicaid/CHIP (ASPE, 2011). Even more recently, the Affordable Care

Act has expanded coverage for children even further by ensuring that job-based or new individual health insurance plans cannot deny coverage to children for pre-existing conditions or disabilities, offering an Affordable Insurance Exchange where individuals can buy affordable health benefits plans, offering vision and dental care as part of Exchange plans for children, and for lower-income families (those making less than $88,000 per year) if job-based plans are not affordable, tax credits may be available to help pay for insurance (U.S. Department of Health and Human Services, 2012).

Access to insurance is of importance not only in its own right, but also because of linkages between insurance coverage, type of coverage and child health. While it is difficult to establish a causal relationship between heath coverage and child health, a recent study shows that health insurance does improve the health of vulnerable populations such as infants and children, and low-income adults (Levy & Meltzer, 2008). This may be due in part to linkages between health insurance coverage and access to primary and preventive care which leads to improved overall health (Hoffman & Paradise, 2008). Indeed, whether children are covered by public or private health insurance, they are more likely to have a usual source of medical care compared to uninsured children. One study notes that almost all insured children (98% private, 97% public) had a usual source of care, compared with only 72% of uninsured children (Bloom et al, 2006).

Thus, recent decades have seen transformations in both the living arrangements of U.S. children, and their access to health care. Further, living arrangements and access to care are intertwined, with implications for children's health and well-being. Indeed, at a time when the health insurance landscape is changing rapidly and efforts to reach the uninsured through both public and private programs are at the forefront of public policy, understanding patterns of insurance coverage and child health by family structure is essential. However, little work exists

examining the linkages between a wide range of children's living arrangements and their health insurance status, health outcomes, and medical care use. This study fills that gap.

The goal of this study is to examine the relationship between a diverse set of children's living arrangements and children's health insurance coverage and health outcomes. Specifically, we ask the following questions: 1) Is family structure associated with the type of insurance that a child has (public, private, or noninsurance)?; 2) Holding insurance status constant, is family structure associated with child health; 3) do patterns of health insurance or health differ depending on the marital relationship between parents, the biological relationship between parents and the child, or the gender of the parent?; and 4) Does income or insurance coverage account for the associations between family structure and child health?

Family Structure and Child Health

A large body of research documents improved well-being for children living with both biological married parents compared to those in other family types (McLanahan & Sandefur, 1994; Hoffman and Johnson, 1998; Harris, Cavanagh, & Elder, 2000; Brown, 2004). This study extends that literature to examine variations in children's health insurance status and health by family structure, including a wider range of living arrangements than previous studies.

Existing studies examining the associations between family structure and children's health insurance coverage focus almost exclusively on comparisons between single-mother and two-parent families. Results indicate that children of single mothers are less likely to have private health insurance and are more likely to have public health insurance compared with children in two-parent families (Angel and Worobey 1988), and that they are also more likely to be uninsured (Cunningham and Hahn 1994; Weinick and Monheit 1999). Weinick and Monheit (1999) find that the association between children's health insurance and family structure differs

across income levels suggesting that at lower income levels children in two-parent families are actually more likely to be uninsured compared with children in single-parent families. Heck and Parker (2002) find an additional nuance in the interplay between family structure, socio-economic status, and insurance coverage among children, showing that rates of uninsurance decline sharply with increasing maternal education among children in two-parent families but not do not decline appreciably among children of single mothers. These findings suggest that linkages between family structure and child health insurance may vary across the income spectrum.

Studies suggest that children living in single-mother families have poorer health compared to those living with two biological parents (Dawson et al, 1991), while children in single-father families generally do just as well or better on indicators of mental and physical health than children residing with two biological parents (Bramlett & Blumberg, 2007). However, children in both single-mother and single-father families have worse reported dental health compared to children in two-parent families (Bramlett & Blumberg, 2007). Further, children residing in stepfamilies are also disadvantaged compared to children who live with two biological parents, with worse physical and mental health outcomes (Amato & Keith, 1991; Bramlett & Blumberg, 2007; Cherlin & Furstenberg, 1994; McClanahan & Sandefur, 1994).

Research on the health of children in other living arrangements is quite sparse. A recent study of teenaged New York children being raised by grandparents found that over half of the youth interviewed had some kind of health condition; among the most common conditions were attention-deficit disorders (Dunifon and Kopko, 2011). Bilaver et al., (1999) find that children being raised by grandparents or other relatives had higher rates of receipt of mental health services than did children receiving public assistance who were either part of the foster care

system, as well as those receiving public assistance but living with a parent. Other studies of grandmothers raising their grandchildren, identified children's physical or mental health issues as key concerns (Musil et al., 2008), as well as high rates of obesity (Roberto et al., 2008).

Most of the studies reviewed above compare health outcomes among children in a small number of living arrangements, often comparing, for example, children living with a single parent to those living with a married parent. Few studies consider a wide range of children's living arrangements simultaneously. An exception is a recent study by Bass and Warehime (2011) examines how the relationship between young children's biological parents influences child heath, health insurance, and health care use, finds that children whose biological parents are not married are more likely to be uninsured or have public insurance and less likely to have a routine doctor than those with married parents. That study did not consider the wider range of children's living arrangements examined here, and only focused on children ages 5 and younger.

This paper builds upon a previous study finding that children who reside in single-father families exhibit poorer access to health care, specifically a lower likelihood of having a usual source of health care and having a well-child visit in the past year than children in other family structures (Leininger & Ziol-Guest, 2008). Specifically, the current paper examines the health insurance status and physical and mental health of children in different family structures.

Conceptual Framework

Several theories have been proposed to explain the linkages, noted above, between family structure and child well-being (see Sigle-Rushton and McLanahan, 2002). These include economic disparities between families in various living arrangements, less time available to invest in children by single parents, the instability experienced by children not living with married biological parents, and the non-random selection of parents into various living

arrangements on the basis of factors that, themselves, may be associated with child well-being. Each of these is relevant when motivating linkages between family structure and children's health insurance status and health.

The economic deprivation perspective hypothesizes that substantial economic differences between family types produce differences in child well-being. In their summary of the evidence on this topic, Sigle-Rushton and McLanahan (2002) suggest that between 30–50 percent of the association between single parenthood and child outcomes can be explained by economic differences between children in various living arrangements. Thus, while income explains a large part of the observed differences in child outcomes across family structures, significant differences still remain. Given a lack of universal health insurance in the U.S., income disparities between children in different living arrangements may lead to differences in type and quality of health care, and, ultimately, child health.

In addition to differences in total household income, some families may lack the social capital, parental communication, and parental supervision skills (Coleman, 1988) that two-parent families have. All of these skills are salient in parents' decisions to seek health care for their children as well as their ability to arrange such care and to undertake other activities that promote child health. Single parents, because they typically fill the roles of economic provider as well as primary agent of children's socialization, may simply have less time to invest in their children's health. This may be particularly the case for custodial grandparents, most of whom (53%) are not married (U.S. Census Bureau, 2011), and who, because of their age, may have even more limited ability to invest in children due to lack of energy or health problems.

Even within two parent households, differences in investments in children may exist. The instability and change arguments suggest that, due to family disruptions and re-partnering,

parents in stepparent families may experience stress or distractions that hinder their abilities to effectively parent (Coleman, Ganong, & Fine 2000). Additionally, step-parents may have obligations to children from other relationships, reducing the time and energy available to devote to resident step-children (Coleman, Ganong, & Fine 2000). Further, stepparents may invest differently in stepchildren than they would in their own biological children. These investments may take the form of time and money required for health and medical care use (Case, Lin, & McLanahan, 2000; Case & Paxson, 2001). This would apply to both married and cohabiting stepfamilies, but perhaps particularly to cohabiting families as research shows such relationships are often short lived (Brown, 2003).

Theories in evolutionary psychology (Daly & Wilson, 1998) suggest gender differences in child investments. Indeed, research shows that mothers spend more time than fathers in the role of primary caregiver (Bianchi, 2000), and that children's health investments are disproportionately made by mothers (Case, et al., 2000; Case & Paxson, 2000). If health investments are indeed the purview of women, then children residing with single fathers may be less likely to be insured and ultimately have poorer health than children living with their mothers.

Finally, there may be a direct link between family structure and children's health insurance due to the way in which the U.S. health insurance system operates. Specifically, public insurance is often targeted toward children living with single parents, while private insurance is most commonly obtained through parental employment. The potential for having multiple adult workers in the household implies that two-parent families are more likely to have access to employer-sponsored coverage than families with a single adult, while many children living with single mothers are likely eligible for Medicaid or CHIP.

It is important to note, however, that selection factors may account for the observed relationship between family structure and child health outcomes. Some studies find that, after controlling for an extensive range of such characteristics, differences in outcomes between children in single- and married-parent families become insignificant (Carlson and Corcoran 2001; Ginther and Pollak 2004; Dunifon and Kowaleski-Jones 2002; Foster and Kalil 2007; Gennetian 2005).

As noted above, we address the following research questions designed to test linkages between family structure and children's health care use and health outcomes: 1) Is family structure associated with the type of insurance that a child has (public, private, or noninsurance)?; 2) Holding insurance status constant, is family structure associated with child health; 3) do patterns of health insurance or health differ depending on the marital relationship between parents, the biological relationship between parents and the child, or the gender of the parent?; and 4) Does income or insurance coverage account for the associations between family structure and child health?

Method

The data for the study are from the National Survey of America's Families (NSAF), a nationally representative probability sample of the civilian, non-institutionalized population under the age of 65. The NSAF was conducted by the Urban Institute and data collection provided by Westat, with the goal of collecting information on the health and well-being of U.S. children and adults (Abi-Habib, Safir, & Triplett, 2004). The Focal Child and Adult Pair data files of the 1999 and 2002 rounds are combined to include information at the child- and family-levels for approximately 70,000 children between the ages of 0 and 17. In households with children under the age of 18, up to two children were sampled for in-depth study: one under the

age of 6 and another between the age of 6 and 17. A household adult defined as the "most knowledgeable adult" (MKA) regarding the sample child's education and health care was chosen as the respondent for the sample child. All information in the data file was gathered from the MKA. The overall response rates for the Focal Child files were 65% and 55% for the 1999 and 2002 rounds, respectively.

Children's Health Insurance and Health

The dependent variables, all reported by the MKA, focus on children's health insurance status and subjective health status (both physical and mental). First, **children's health insurance status** is assessed at the time of the survey and is coded as either uninsured, public insurance, or private insurance. Public insurance includes coverage provided by the following programs: Medicaid, the State Children's Health Insurance Program (SCHIP), Indian Health Service, and Medicare. Private insurance includes coverage from a current or former employer or union, coverage purchased directly from an insurance company, and military health insurance (CHAMPUS). Respondents who reported that the child was not currently uninsured were then asked about the type of insurance they had.

Second, the MKA reported **whether the child had a physical, learning, or mental health condition** that limits participation in the usual kinds of activities done by most children their age or limits their ability to do regular school work. The MKA also reported if the child's health in general is excellent, very good, good, fair, or poor. Given the relatively uncommon occurrence of less than good health among children, following Currie and Stabile (2002), if the mother stated that the child is in "good," "fair," or "poor" health they are coded as **poor health**. **Children's mental health** is also assessed, using a scale measure consisting of responses to five questions regarding the child's mental health in the past month. Specifically, these five items

ask how often in the past month the child has been a very nervous person, felt calm or peaceful, felt downhearted and blue, been a happy person, and felt so down in the dumps that nothing could cheer him or her up. Answers ranged from all of the time to none of the time and nervous, downhearted, and some items are reverse coded so that higher scores indicate poorer mental health.

Independent Variables

Family structure. The key independent variables in the analyses are measures children's living arrangements, created from a family structure variable available in the Focal Child file of the NSAF. Seven types of families are examined: families headed by (1) two married biological/adoptive parents, (1) a parent and a married step-parent, (3) a single mother, (4) a single father, (5) custodial grandmother (a grandmother and no parent)[1], (6) two biological cohabiting parents, and (7) a parent and a cohabiting step-parent.

Child characteristics. All regressions include controls for the sex and race of the child. Additionally, a continuous measure of age of the child at the time of the survey is included, as is the child's health insurance status (for all outcomes except health insurance) and immigrant/non-citizen status.

MKA and household characteristics. All regressions also include controls for the educational attainment of the MKA (less than high school, high school degree, and at least some college), home ownership status, and the number of people residing in the household. Additionally, a series of dummy variables for household income representing percent of the federal poverty level are also included (less than 50%, between 50% and 100%, between 100% and 150%, between 150% and 200%, between 200% and 300%, and above 300%).

[1] Fifty-four percent of the grandmothers are married. Grandfather-only households are excluded as there are only 21 in the data.

Missing data is rare. Of the 67,861 children who fit into one of our seven family structure types of interest, 525 (<.01%) are missing MKA education. Several of those 525 children (58) are also missing on the control variables.

Analytic Strategy

Multinomial logistic regression (for insurance status), logistic regression, and ordinary least squares (OLS; for the mental health scale) were used to test the association between family structure and children's health insurance, health, and medical care. Descriptive statistics were calculated using the weights provided by the NSAF, which correct for the complex sample design of the survey as well as make the appropriate adjustments for unit non-response. All regression analyses correct the standard errors using the Huber-White sandwich estimator of the variance to account for multiple observations within a household (clustering on the MKA identifier). Specifically, the following equation is estimated:

$$Health_i = a_i + b_{i1} * Step + b_{i2} * SM + b_{i3} SF + b_{i4} Gram + b_{i5} BioCoh + b_{i6} Cohab + Xj_i + e_i$$

The vector *Health* represents the health insurance and status outcomes and medical care experiences of a given child. Separate models are run for each of these measures. b_1 - b_6 are the coefficients of interest: the regression-adjusted difference in coverage between children in step-parent, single-mother, single-father, grandmother, cohabiting parents, and cohabiting step-parent, respectively, compared to children in married two-parent households. The vector *X* includes the control variables and the error term is represented by e.

We also perform a series of post-hoc tests to examine differences of interest. To test whether the outcomes observed differ by the marital relationship between parents, we compare coefficients for married vs. cohabiting stepparent families. To test the importance of parental gender, we compare coefficients for single mothers vs. single fathers.

Finally, the results of Heck and Parker (2002) and Leininger and Ziol-Guest (2008) suggest that the effects of family structure on health insurance status and health may differ across SES. To examine this hypothesis, we will estimate the predicted probabilities (dichotomous outcomes) or marginal effects (mental health scale) on the health insurance status and health outcomes at the different poverty levels.

Results

Sample Description

Table 1 presents the weighted means and standard deviations of all variables in the analysis for the pooled sample of children and by each of the seven types of families. The majority (61%) of children in the sample reside with biological (or adoptive) married couples, and 7.5% live with a married stepparent. Twenty-one percent of the children in the sample live with their single mothers; three percent live with their single fathers; and 1.6% are being raised by a grandparent. Finally, six percent of children live with cohabiting parents, half of which are the child's biological parents. Child age varies across the family types, with children living with cohabiting biological parents with an average age of 4, while those living with step-parents are on average 11 years old.

The majority of children in two parent families (biological and step) and single-father families are white and non-immigrant; these children tend to live with parents who own their own home, and who have a total household income greater than 200% of the federal poverty level. On the contrary the majority of children in single mother families are non-white, and live in households with a total income less than 150% of the federal poverty level. The majority of children who live with custodial grandmothers or with cohabitating parents are also non-white and have household income less than 200% of the federal poverty level. These basic descriptive

statistics confirm previous studies indicating that two parent families advantaged compared to most other family types. The exception is single fathers, who look more similar to married parent families than single mother families in terms of resources.

Table 2 provides information on children's health insurance status and health measures by family structure. The majority of children living with two married biological parents, stepparents, and single fathers have private health insurance. Public insurance is most common among children in single mother, custodial grandmother, and biological cohabiting families. Children who live with custodial grandmothers or with biological cohabiting parents are the most likely to be uninsured.

Although children in the sample are generally considered to be in good health, children residing with cohabitating step-parents are the most likely to have a limiting condition (16 percent) and custodial grandmothers are the most likely to report the child is in poor health (33 percent). Single mothers and cohabitating step-parents report worse mental health scores for children compared to all other families, whereas children residing with two biological married parents and those living with a single father have the best reported mental health.

Multivariate Results

Multinomial logistic regression, logistic regression, and OLS analyses were used to examine the relationship between family structure and children's health insurance and health. Standard errors are adjusted for the presence of siblings in the sample.

Table 3 presents results of multinomial logistic regression analyses examining the likelihood that a child has no insurance or public insurance relative to having private insurance. Focusing on the Relative Risk Ratios (RRR) for the family structure measures, results show that, compared to children living with both biological married parents, children in all other family

types are more likely to be uninsured and more likely to have public insurance, relative to being privately insured. This includes children living with both biological parents, but in a cohabiting relationship. Children being raised by grandparents are the most likely to be uninsured and the most likely to have public insurance, relative to being privately insured, followed by those living in cohabiting stepfamilies. Post-hoc tests reveal that children in cohabiting stepfamilies are also less likely to have private insurance and more likely to be uninsured compared to those living in biological cohabiting families. Additionally, the insurance status of children in single mother and single father families differs significantly from each other, with those in single mother families less likely to be uninsured and more likely to be privately insured.

The results in Table 3 are also illustrated in Figure 1, using the coefficients shown in Table 3, and assigning all respondents the characteristics of the biological married parents, allows us to examine patterns of health insurance coverage related to the family structure itself, not to other family characteristics that are related to family structure. These numbers show the regression-adjusted percentage of children in each living arrangement with no insurance and with public insurance; the remainder (not shown) have private insurance. Figure 1 shows that children living with a single mother are less likely than all other children to be uninsured; this is due to high rates of public insurance. In contrast, children living with biological married parents have the highest rates of private insurance. The lowest rates of private insurance, and the highest rates of public insurance and non-insurance, occur among custodial-grandparent families and cohabiting stepfamilies. Finally, Figure 1 reveals that children in single-mother and single-father families have similar level of private insurance; however, children in single father families are less likely to have any kind of insurance at all.

Results in Table 3 illustrate key differences in health insurance status by family structure. Because health insurance status itself could be linked to the child outcomes we examine, we control for insurance status in our next set of analyses, which link family structure to child health outcomes (Table 4). Results in the first column show that, compared to children living with both biological married parents, children in all other family types are more likely to have a limiting condition; the exception is children living with both biological cohabiting parents. Children living with cohabiting step-parents are most likely to have a limiting condition. Post-hoc tests show that children living with married stepparents are less likely to have a limiting condition than those living with a cohabiting stepparent, as are children living with a single father compared to children living with a single mother.

Looking at column two, we see that children living with a stepparent, those living with a single mother, those living with a custodial grandmother, and those living with a cohabiting step-parent are more likely to be in poor health than those living with biological married parents; children in custodial grandmother households have a 75% greater likelihood of poor health compared to those living with biological married parents. Post-hoc tests reveal that children living with a single mother are more likely to be in poor health than those living with a single father.

Finally, results in column three show that, compared to children living with both biological married parents, those in all other family types have increased mental health problems. Post-hoc tests show that problems are higher for children in cohabiting stepparent families compared to those in married stepparent families, and children with single mothers compared to single fathers. Indeed, children with single mothers have the highest levels of health problems.

Figure 2 shows regression-adjusted patterns of children's health outcomes by living arrangement. Again, families were assigned the characteristics of married parent families, including their insurance status, allowing us to better understand the linkages between family structure and child health outcomes. Here we see that children in custodial grandmother families have much higher rates of poor health than children in any other family type, followed by children in cohabiting stepfamilies and in single mother families. Children in cohabiting stepfamilies have the highest rates of limiting conditions, followed by children in custodial grandmother families, those living with a single mother, and those living with married stepparents. This graph also shows that the health outcomes for children living with single fathers and cohabiting biological parents are quite similar to those of children living with married parents.

Extensions

We tested several additional models to examine the extent to which income or health insurance status influences the relationship between family structure and our outcomes of interest. First, we estimated the model in Table 3 excluding income as a control, in order to examine the extent to which differences in income across family structures account for the differences in health insurance coverage across living arrangements. Figures 3 and 4 present the adjusted probabilities of children with no insurance (Figure 3) and public insurance (Figure 4). Like the findings presented in Figure 1, all respondents were assigned the characteristics of the biological married parents, allowing us to examine patterns of health insurance coverage related to the family structure itself, not to other family characteristics that are related to family structure. The first bar in each figure is identical to the findings from Figure 1 and the second bar in each figure is estimated from a regression in which income is not included as a control. In

general income accounts for about one-half of the association between family structure and the likelihood that a child is uninsured, but the overall pattern remains the same. Not surprisingly, as shown in Figure 4, given that access to public insurance programs is conditional on income, income accounts for a great deal of the linkages between family structure and the likelihood that a child has public insurance, especially for children in single mother and custodial grandmother families.

Second, we estimated the role of income in explaining the relationship between family structure and the three child health outcomes. Income plays a very limited role in explaining the relationship between family structure and the presence of a limiting condition, poor health, and mental health. Third, we also estimated the role of health insurance in explaining the relationship between family structure and the health outcomes. Like the findings noted above excluding income, health insurance status plays a very small role in the relationship between family structure and the three health outcomes.

Finally, we examined whether the linkages between family structure and child health insurance status differ across the income spectrum. Figure 5 presents the adjusted probabilities that a child is uninsured for each family structure type, by income (poverty level). Not surprisingly, the probability of the child being uninsured declines as income increases for all family types. However, several other interesting patterns emerge. While married biological parents, married stepparents, and single fathers are the most likely to be uninsured in the lowest income group, they also experience the steepest decline over the income distribution. Children residing with their grandparent or cohabiting biological parents, have lower rates of uninsurance compared to the married parent, stepparent and single fathers at the lowest income level; yet experience improvements as one goes up the income distribution, yet not to the same degree as

the aforementioned family types. Finally, children who reside with single mothers or a single mother and her cohabiting non-biological partner have the lowest rates of uninsurance in the low-income group, and these rates are largely unaffected by income.

Discussion

Using representative data on a large sample of U.S. children, this study examined the interplay between a wide range of children's living arrangements and their health insurance status and health outcomes. At a time when both family structure and the nature of health insurance coverage for children are changing rapidly, understanding such associations is essential.

Our first goal was to examine the linkages between family structure and children's health insurance coverage. Perhaps not surprisingly, children in all other family types were more likely to have public insurance or be uninsured compared to those living with both biological married parents. What is more interesting, then, are the differences that emerged within the sample of children not living with both married parents. Our results show very low rates of uninsurance among children of single mothers. Combined with high rates of public insurance, this suggests that public insurance programs have been quite effective in reaching this vulnerable group of families. However, it appears that other families may be falling through the cracks, as results indicated higher rates of uninsurance among children in custodial grandparent, cohabiting, and single father families. Given high rates of health problems among these same children, this is cause for concern. The high rate of uninsurance among children in single father families is surprising, given their material advantages compared to other family types. The NSAF asks parents of children who are eligible for but not enrolled in public insurance programs why their children are not enrolled. Single fathers of children who are eligible for but not enrolled in

public insurance programs are more likely than single mothers to report that the primary deterrent to enrollment is that their children do not need insurance (author calculations).

Our next question was to examine the linkages between family structure and children's health. Again, not surprisingly, children in other living arrangements often fare worse than those living with biological married parents. However, looking within the diversity of living arrangements, we found that children living with single fathers have the best health outcomes, while children living with custodial grandparents and single mothers often fared the worse (in particular when looking at poor health and mental health, respectively).

That the group of children most likely to be uninsured (those living with single fathers) would have the best health outcomes, while those most likely to have public insurance (single mothers) are reported to have worse health is puzzling. As noted in Table 1, children living with single mothers and custodial grandparents face a range of disadvantages, while children in single father families are quite advantaged; perhaps access to insurance is not enough to overcome these other factors influencing their health outcomes. Additionally, fathers may be less likely to maintain custody of children who are in poor health. Further, although parental reports of children's health status may reflect objective differences in child health, it is also likely that they reflect differences in perceived health; single fathers may hold different perceptions of children's health status than do mothers. For example, Waters et al. (2000) find that mothers' own health influences reporting regarding their children's health, while fathers' own health has no influence on reports of child health. This potential differential reporting among parents of different sexes implies that the measurement of child health in large-scale surveys should move beyond parental reports to include child and provider reports of health.

Finally, we sought to examine whether the gender of the parent, or the marital relationship between parents, was an important determinant of the outcomes examined here. For the most part, it appears that parental gender does matter, with children of single mothers more likely to be insured, but having poorer outcome than those of single fathers (as described above). Additionally, the marital relationship between parents matters as well, with children of cohabiting biological parents faring worse than those of married biological parents, and those of cohabiting step-parents faring worse than those of married step-parents. These findings, while suggestive, indicate that perhaps gender investments in children play out in important ways for children's health, with women perhaps more likely to do the work required to obtain insurance for their children. Additionally, these findings, again suggestive, indicate that the instability in step-parent and cohabiting families may make it difficult for some parents to arrange health care for their children.

We found that income explained some, but not all, of the associations between family structure and the likelihood that children were uninsured. Additionally, both income and type of insurance coverage explained virtually none of the linkages between family structure and child health. Finally, we found evidence of an interesting interaction between income and family structure, such that low-income children living with married biological or stepparents or a single father have the highest uninsurance rates, yet income improvements decrease these rates tremendously. On the contrary, children residing with single mothers or a single mother and her partner have the lowest rates of uninsurance in the low-income group, additional income does not impact this rate. These findings suggest that economic circumstances influence insurance status to a varying degree depending on the child's living arrangements.

These findings suggest that family structure exhibits an important association with children's health insurance and health itself, even after adjusting for a variety of demographic and socioeconomic characteristics. That differences in health insurance coverage and health vary across children's living arrangements may be a reflection of the risk preferences of the resident parent. Calculations from the 2004 Medical Expenditure Survey show, for example, that men are almost twice as likely as women to agree or strongly agree with the statement ''I am more likely to take risks than the average person'' (reported in Leininger & Ziol-Guest, 2008). Using a sample of working-age adults, Monheit and Vistnes (2006) find that risk preferences shape their insurance enrollment decisions; it is reasonable to infer that these preferences also influence the enrollment decisions that adults make on behalf of their resident children. These findings, while not causal, provide an important snapshot of an important dimension of child well-being that varies by family structure.

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Table 1
Weighted Descriptive Statistics by Family Structure (n=67,336)

	Biological Parent	Step-Parent	Single Mother	Single Father	Custodial Grandmother	Cohabiting Biological/ Adoptive Parents	Parent and Cohabiting Step-Parent
	Mean or % (SD)	Mean or % (SD)	Mean or % (SD)	Mean or % (SD)	Mean or % (SD)	Mean or % (SD)	Mean or % (SD)
Child Characteristics							
Female	48.85%	46.67%	50.26%	42.91%	51.92%	48.30%	48.29%
Black non-Hispanic	6.76%	13.53%	38.58%	16.62%	41.00%	19.63%	17.42%
Hispanic	15.43%	15.18%	19.94%	12.08%	17.39%	36.82%	20.60%
White non-Hispanic	71.69%	67.62%	38.00%	67.21%	40.14%	39.27%	59.06%
Other race	6.11%	3.68%	3.48%	4.09%	1.48%	4.28%	2.91%
Age (years)	8.15 (5.15)	11.45 (3.92)	8.80 (5.07)	9.91 (4.57)	9.09 (4.65)	4.44 (4.19)	9.68 (4.37)
Immigrant	4.08%	3.66%	2.59%	1.93%	1.25%	2.84%	2.71%
MKA and Household Characteristics							
Less than high school	9.35%	10.35%	17.77%	9.67%	30.22%	27.15%	22.17%
High school diploma	55.01%	71.35%	68.38%	65.83%	58.44%	65.35%	68.29%
More than high school	35.64%	18.30%	13.85%	24.51%	11.34%	7.50%	9.53%
Household size	4.66 (1.34)	4.79 (1.43)	3.98 (1.58)	3.26 (1.39)	4.29 (1.65)	4.69 (1.52)	4.71 (1.40)
Own home	78.38%	65.67%	38.93%	59.26%	67.56%	38.28%	43.81%
Income < 50% FPL	2.10%	2.70%	17.21%	4.22%	15.87%	7.33%	4.64%
Income >50% & <100% FPL	5.53%	6.04%	22.73%	8.02%	17.07%	16.68%	11.42%
Income >100% & <150% FPL	8.16%	9.16%	16.99%	10.45%	15.25%	19.11%	12.65%
Income >150% & <200% FPL	10.82%	11.33%	11.84%	12.51%	8.24%	14.29%	14.69%
Income >200% and <300% FPL	19.98%	24.85%	16.02%	23.74%	20.28%	20.96%	22.63%

Income >300% FPL	53.40%	45.93%	15.20%	41.06%	23.28%	21.62%	33.98%
Unweighted n	*41,260*	*5,053*	*13,855*	*2,025*	*1,105*	*2,054*	*1,984*
Unweighted %	61.27%	7.50%	20.58%	3.01%	1.64%	3.05%	2.95%

Table 2
Weighted Variables of Interest by Family Structure

	Biological Parent	Step-Parent	Single Mother	Single Father	Custodial Grandmother	Cohabiting Biological/ Adoptive Parents	Parent and Cohabiting Step-Parent
	Mean or % (SD)	Mean or % (SD)	Mean or % (SD)	Mean or % (SD)	Mean or % (SD)	Mean or % (SD)	Mean or % (SD)
Children's Health Insurance Status							
No insurance	0.09	0.11	0.13	0.14	0.18	0.18	0.15
Public insurance	0.10	0.13	0.42	0.18	0.42	0.43	0.36
Private insurance	0.81	0.76	0.45	0.69	0.40	0.38	0.48
Child Health Outcomes							
Has a limiting condition	0.07	0.13	0.13	0.09	0.12	0.05	0.16
Poor health	0.14	0.18	0.25	0.14	0.33	0.21	0.24
Mental health scale	8.66 (2.35)	9.06 (2.68)	9.97 (3.00)	8.92 (2.84)	9.65 (3.12)	9.33 (2.83)	9.97 (2.64)

Table 3

Multinomial Logistic Regression Results for Children's Health Insurance Status

	Private Health Insurance							
	No Insurance				Public Insurance			
	B		SE	RRR	B		SE	RRR
Family Structure								
Stepparent	0.25	***	0.06	1.28	0.43	***	0.05	1.54
Single mother	0.30	***	0.05	1.35	1.01	***	0.04	2.76
Single father	0.68	***	0.09	1.97	0.60	***	0.08	1.81
Custodial grandmother	1.22	***	0.11	3.38	1.68	***	0.10	5.39
Cohabiting biological/adoptive parents	0.95	***	0.08	2.59	1.23	***	0.07	3.42
Parent and cohabiting step-parent	1.10	***	0.08	2.99	1.63	***	0.07	5.10
Child Characteristics								
Female	0.08	*	0.03	1.08	-0.03		0.03	0.97
Black non-Hispanic	0.15	**	0.05	1.16	0.32	***	0.04	1.38
Hispanic	0.67	***	0.04	1.95	0.46	***	0.04	1.59
Other race	0.32	**	0.09	1.38	0.24	**	0.08	1.27
Age (years)	0.00		0.00	1.00	-0.06	***	0.00	0.94
Immigrant	1.43	***	0.08	4.18	0.04		0.09	1.04
MKA and Household Characteristics								
Less than high school	1.76	***	0.07	5.83	1.45	***	0.06	4.27
High school diploma	0.82	***	0.05	2.26	0.69	***	0.05	1.99
Household size	0.09	***	0.01	1.10	0.12	***	0.01	1.13
Own home	-0.38	***	0.04	0.69	-0.64	***	0.03	0.53
Income < 50% FPL	2.14	***	0.09	8.47	3.19	***	0.07	24.35
Income >50% and <100% FPL	2.22	***	0.07	9.18	3.13	***	0.06	22.83
Income >100% and <150% FPL	1.83	***	0.06	6.23	2.53	***	0.05	12.59
Income >150% and <200% FPL	1.38	***	0.06	3.96	1.80	***	0.05	6.06
Income >200% and <300% FPL	0.84	***	0.05	2.31	1.14	***	0.05	3.13

Constant	-4.41	***	0.09	---	-3.77	***	0.07	---
Significant differences			a, b				a, b	

Note: *** $p < .001$ ** $p < .01$ * $p < .05$. OR are odds ratios. *a* indicates stepparent significantly different than cohab and *b* indicates single mother significantly different from single father.

Table 4

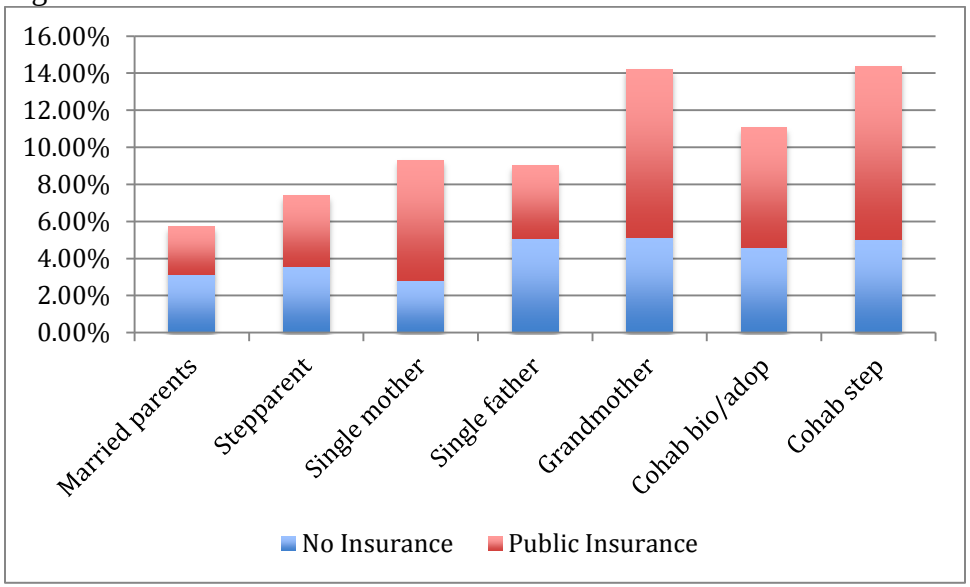
Regression Results for Children's Health Outcomes

	Has limiting condition			Poor Health			Mental Health		
	OR		SE	OR		SE	B		SE
Family Structure									
Stepparent	1.47	***	0.07	1.14	**	0.05	0.26	***	0.04
Single mother	1.41	***	0.06	1.22	***	0.04	0.79	***	0.04
Single father	1.18	*	0.09	0.93		0.06	0.21	**	0.07
Custodial grandmother	1.46	***	0.14	1.75	***	0.13	0.43	***	0.10
Cohabiting biological/adoptive parents	1.08		0.10	0.99		0.06	0.43	***	0.07
Parent and cohabiting step-parent	1.80	***	0.12	1.27	***	0.08	0.56	***	0.07
Child Characteristics	OR		SE	B		SE	B		SE
Female	0.51	***	0.01	0.89	***	0.02	-0.03		0.02
Black non-Hispanic	1.10	***	0.00	1.04	***	0.00	0.03	***	0.00
Hispanic	0.74	***	0.03	1.52	***	0.05	-0.40	***	0.04
Other race	0.77	***	0.03	1.87	***	0.06	-0.30	***	0.04
Age (years)	1.12		0.09	1.71	***	0.10	-0.11		0.06
Public insurance	1.72	***	0.09	1.00		0.04	0.19	***	0.05
Private insurance	0.94		0.05	0.69	***	0.03	-0.41	***	0.05
Immigrant	0.60	***	0.06	1.68	***	0.10	-0.11		0.07
MKA and Household Characteristics									
Less than high school	1.40	***	0.08	2.24	***	0.10	0.52	***	0.05
High school diploma	1.16	***	0.04	1.36	***	0.04	0.22	***	0.02
Household size	1.03	**	0.01	1.03	***	0.01	-0.01		0.01
Own home	0.87	***	0.03	0.92	**	0.03	-0.21	***	0.03
Income < 50% FPL	1.35	***	0.10	1.50	***	0.08	0.81	***	0.08
Income >50% and <100% FPL	1.27	***	0.08	1.67	***	0.08	0.62	***	0.06
Income >100% and <150% FPL	1.31	***	0.07	1.58	***	0.06	0.44	***	0.05
Income >150% and <200% FPL	1.21	***	0.06	1.39	***	0.06	0.36	***	0.04
Income >200% and <300% FPL	1.16	***	0.05	1.31	***	0.04	0.27	***	0.03

Constant	---		---		8.73	***	0.07
Significant differences	a, b		b		a, b		

Note: *** $p < .001$ ** $p < .01$ * $p < .05$.OR are odds ratios. B is coefficient from OLS. *a* indicates stepparent significantly different than cohab and *b* indicates single mother significantly different from single father.

Figure 1


16.00%
14.00%
12.00%
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6.00%
4.00%
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Married parents
Stepparent
Single mother
Single father
Grandmother
Cohab bio/adop
Cohab step
No Insurance
Public Insurance

Figure 2

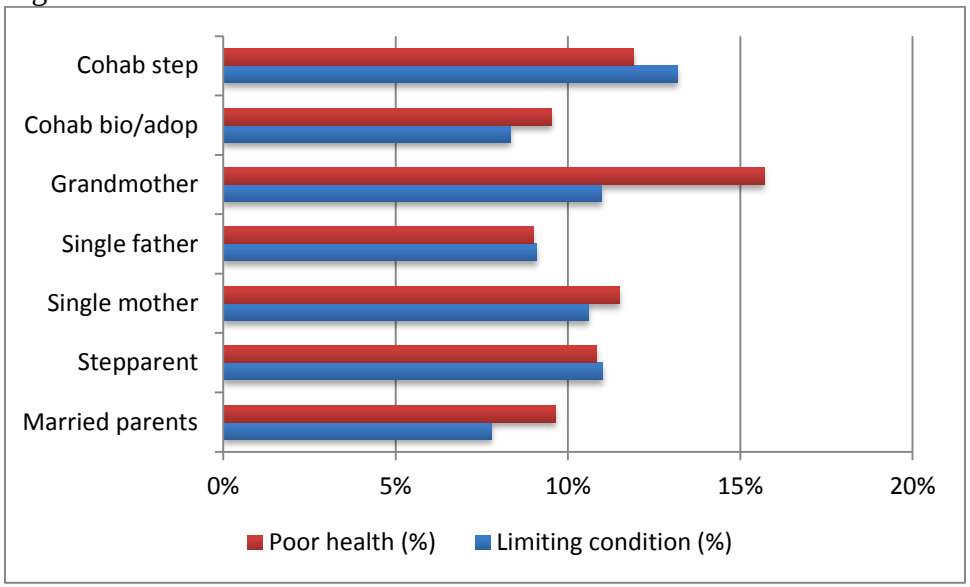

Cohab step
Cohab bio/adop
Grandmother
Single father
Single mother
Stepparent
Married parents
0%
5%
10%
15%
20%
Poor health (%)
Limiting condition (%)

Figure 3--Uninsured

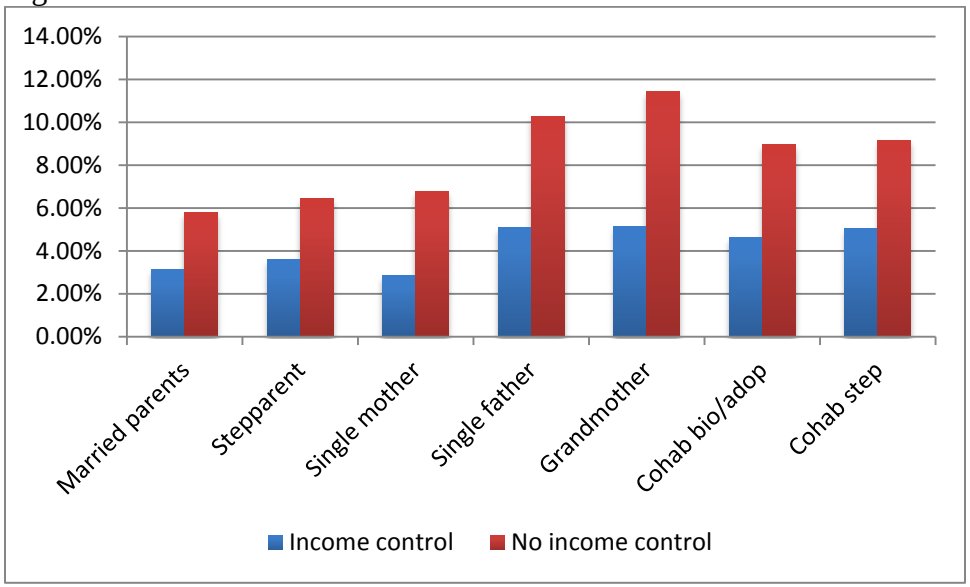


Figure 4—Public Insurance

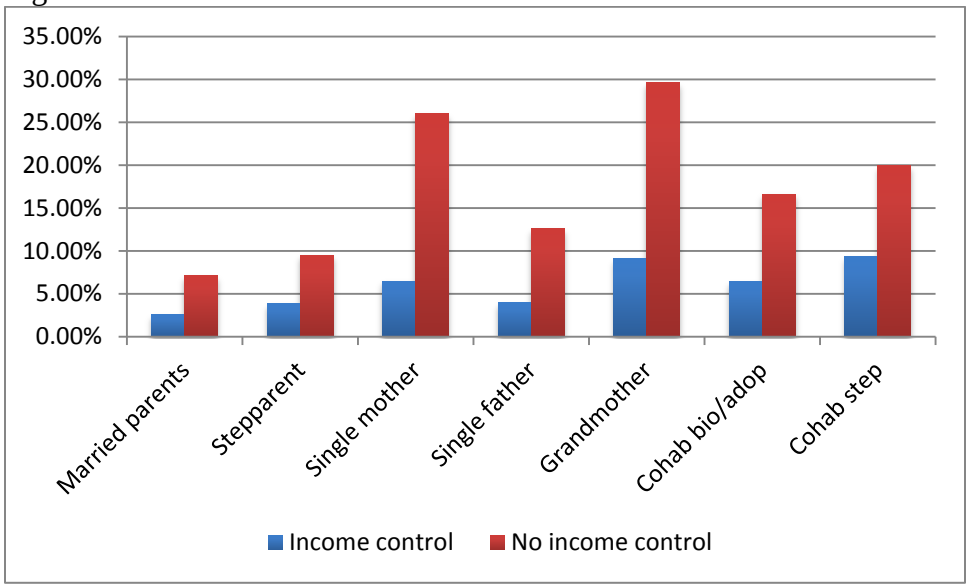
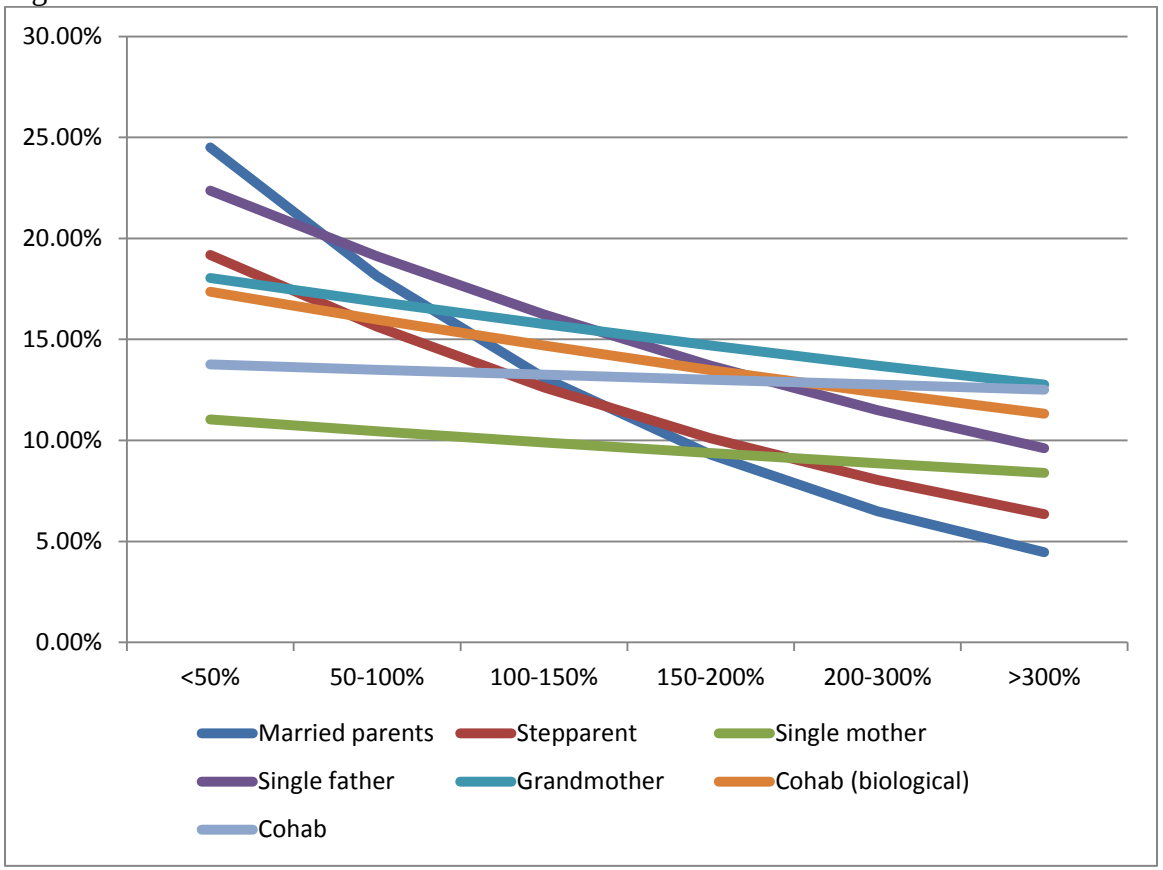


Figure 5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>300%
Married parents
Stepparent
Single mother
Single father
Grandmother
Cohab (biological)
Cohab