



Trends in Type of Health Insurance Coverage for US Children and Their Parents, 1998–2011

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ABSTRACT

OBJECTIVE: To examine trends in health insurance type among US children and their parents.

METHODS: Using the Medical Expenditure Panel Survey (1998–2011), we linked each child ($n = 120,521$; weighted $n \approx 70$ million) with his or her parent or parents and assessed patterns of full-year health insurance type, stratified by income. We examined longitudinal insurance trends using joinpoint regression and further explored these trends with adjusted regression models.

RESULTS: When comparing 1998 to 2011, the percentage of low-income families with both child and parent or parents privately insured decreased from 29.2% to 19.1%, with an estimated decline of -0.86 (95% confidence interval, -1.10 , -0.63) unadjusted percentage points per year; middle-income families experienced a drop from 74.5% to 66.3%, a yearly unadjusted percentage point decrease of -0.73 (95% confidence

interval, -0.98 , -0.48). The discordant pattern of publicly insured children with uninsured parents increased from 10.4% to 27.2% among low-income families and from 1.4% to 6.7% among middle-income families. Results from adjusted models were similar to joinpoint regression findings.

CONCLUSIONS: During the past decade, low- and middle-income US families experienced a decrease in the percentage of child–parent pairs with private health insurance and pairs without insurance. Concurrently, there was a rise in discordant coverage patterns—mainly publicly insured children with uninsured parents.

KEYWORDS: access to care; family health; health insurance; uninsured

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WHAT'S NEW

Trends in health insurance type have changed over the past decade for low- and middle-income US families: private coverage and uninsurance have decreased, while discordance between parent and child coverage has increased.

STABLE HEALTH INSURANCE leads to better access to health care services and improved health outcomes.^{1–4} Over the past decades, political and economic changes have affected access to and affordability of coverage for families in the United States—notably, private health insurance costs have seen steep increases. Though some families obtained coverage for their children through expansions in the Children's Health Insurance Program

(CHIP), few public coverage options existed for adults (aged 19–64 years) before 2014.^{5,6}

Parental coverage status has an independent effect on children's health insurance and access to care, regardless of the child's coverage status.^{7–9} Previous research utilizing a natural experiment that randomized adults to coverage found a causal link between parent and child health insurance status.¹⁰ Thus, it is important to consider trends in children's health insurance coverage in conjunction with trends affecting parents. Most past studies of health insurance have focused on adults or children separately; those that considered both children and parents did not assess type of coverage.^{7–14} To address this gap in the literature, we examined full-year patterns of family health insurance coverage type

among US children and their parents for 1998 through 2011, stratified by income.

METHODS

DATA SOURCE AND STUDY POPULATION

We analyzed data from 1998 through 2011 of the Medical Expenditure Panel Survey–Household Component (MEPS-HC).¹⁵ MEPS-HC respondents are interviewed 5 times over a 2-year period, with an overlapping panel design; annual public use files contain data from a single year for 2 consecutive panels. Each year of data constitutes a nationally representative sample. Details about the MEPS-HC are available elsewhere.^{15,16}

The study population included children aged 0 to 17 years, with responses to at least 1 full year of the survey ($n = 126,093$). We linked each child with a parent or parents in the same household to construct child–parent pairs. We excluded children for whom no identifiable parent records could be linked ($n = 4048$), and for whom insurance information for the child or parent was not available for the full year ($n = 1524$). Our final sample size was 120,521 children, weighted to represent a yearly average of approximately 70 million children in the civilian, noninstitutionalized US population.

CONSTRUCTING HEALTH INSURANCE TYPE VARIABLES

The MEPS-HC contains variables for whether a person had health insurance for at least 1 day in each calendar month of each year, and whether it was public or private insurance. Using these, we constructed variables representing full-year health insurance type, classified as: 1) having private insurance if a person had insurance in 12 months of the year of which 1 or more months included private insurance (those with a combination of public and private insurance were included in this category); 2) having public insurance if a person was insured in 12 months of the year and had public insurance only; and 3) being uninsured, in which the person was reported as having no insurance in 1 or more months of the year. We included those with a combination of public and private insurance in the private category to match MEPS-HC health insurance variable categorization¹⁵; we considered those who did not have insurance in 1 or more months of a given year as uninsured because previous research has shown that preventive service rates for patients with partial health insurance are different from those with full-year coverage¹⁷ and are similar to those with no coverage.^{18,19}

We then created a combined variable that paired full-year health insurance type for a child with that of his or her parent. We grouped child and parent type of health insurance into 9 mutually exclusive categories (child type/parent type): private/private; private/public; private/uninsured; public/private; public/public; public/uninsured; uninsured/private; uninsured/public; and uninsured/uninsured. In cases where a child had 2 parents linked, parent insurance was considered private if at least 1 parent had any private insurance, regardless of the other parent's insurance status or type; parental insurance was considered

public if both parents had public insurance only, or 1 parent had public only and the other parent was uninsured; parental insurance was considered uninsured if both parents were uninsured. If the parent and child had the same type of health insurance, their coverage was considered concordant, and if the insurance type was different between parent and child, their coverage type was considered discordant.

We based household income stratifications on established MEPS-HC categories. We defined low income as less than 200% of the federal poverty level (FPL), combining the MEPS-HC poor, near-poor, and low categories; middle income as 200% to less than 400% FPL; and high income as $\geq 400\%$ FPL.¹⁵ The FPL for a family of 4 was \$16,450 in 1998 and \$22,350 in 2011.^{20,21}

ANALYSIS

All analyses were stratified by family income categories. We do not report results from high-income families because the majority (88%) had private insurance for both child and parent, and all categories had either no statistically significant changes or too few subjects to assess changes ($n < 30$). We used sampling stratification variables, design weights, and a robust variance estimator in accordance with MEPS guidelines to account for the complex sample design of the survey. This accounts for both the intracluster correlation of children within families and intraperson correlation across years.²²

We examined the following demographic characteristics for the entire study period as one pooled sample and report the weighted percentage of each characteristic: age (child categories 0–4, 5–9, 10–13, 14–17 years; parent categories ≤ 24 , 25–44, ≥ 45 years), child race/ethnicity (non-Hispanic white, non-Hispanic nonwhite, Hispanic), region (North, Midwest, South, West), parental education (< 12 years or ≥ 12 years), family composition (1 parent or 2 parents), parental employment (currently employed or unemployed), and child's perceived health status (excellent/very good or good/fair/poor). We conducted descriptive analyses of the prevalence of all 9 possible patterns of coverage type for children paired with a parent or parents, as well as concordant versus discordant insurance coverage. We assessed differences in the distribution of child–parent health insurance type between 1998 and 2011 with chi-square tests of association using SUDAAN 11.0.1 (Research Triangle Institute, Research Triangle Park, NC).

We used joinpoint regression (sometimes called piecewise regression or segmented regression) to determine if and when coverage patterns showed significant changes throughout the entire study period (Joinpoint Regression Software 4.0.4, May 2013; Statistical Methodology and Applications Branch, Surveillance Research Program, National Cancer Institute).²³ Joinpoint regression is often used for 2 simultaneous goals: to identify statistically significant changes in trend over time (in direction or rate of decrease or increase) and to quantify that change through an annual percentage of change statistic. This approach has been used to assess temporal trends in health insurance and other health care outcomes.^{24–26} The null hypothesis in

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