

**Stability of Children's Insurance Coverage and Implications for Access to Care:
Evidence from the Survey of Income and Program Participation**

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Abstract

We use data from the 1996 and 2001 Panels of the Survey of Income and Program Participation to examine the stability of health insurance coverage of children. The data show that over the course of a year a significant percentage of children experience insurance transitions—either gaining or losing insurance or moving between public and private coverage. We examine whether these transitions have implications for access to primary care, accounting for unobserved heterogeneity using child fixed effects. We find a statistically and economically significant relationship between insurance coverage stability and access to primary care. Children who have part-year public or private insurance are more likely to have at least one doctor's visit than children who are uninsured for a full year, but they are less likely to have a visit than children with full-year coverage. Among children who were insured all year, those who had public coverage all 12 months are more likely to have had at least one visit than children who moved between public and private coverage.

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Introduction

Over the past two decades there has been a dramatic expansion in public health insurance for children. Whereas public insurance was once limited almost exclusively to poor children receiving cash welfare, income eligibility limits for the State Children's Health Insurance Program (SCHIP) now extend to at least 200 percent of the Federal poverty level in most states.¹ In implementing SCHIP, states not only increased income eligibility limits, but experimented with new strategies for outreach and plan design. These efforts appear to have had a positive effect on program take-up. The SCHIP expansion significantly increased insurance coverage among children in "working poor" families (LoSasso and Buchmueller 2004), a group that had shown a relatively weak response to earlier Medicaid expansions (Card and Shore-Sheppard 2004).

A key objective of expanding public health insurance coverage for children is to increase timely and appropriate access to health care. A large literature documents a positive relationship between insurance coverage and various measures of utilization for children (see Buchmueller et al. 2004 for a review). Commonly in these studies insurance status is categorized based on coverage at the time of the survey and utilization is measured over some period preceding the survey, typically a year. However, this approach has the potentially important limitation that it fails to account for changes in insurance status over the course of the year. Children currently reporting private coverage, for example, may have been uninsured for some of the time over which utilization is measured. To the extent that insurance status is not static, researchers

¹ Following the enactment of the Children's Health Insurance Program Reauthorization Act of 2009 in February 2009, the official acronym for the State Children's Health Insurance Program was changed to "CHIP." In this paper, however, we continue to use the previous acronym.

correlating current status with past year utilization may be missing an important part of the relationship between insurance coverage and utilization.

Recent research has shown that such changes in insurance status have become increasingly important, especially for children in lower income families (see, for example, Ham, Li, and Shore-Sheppard 2009a). Because the vast majority of private health insurance is provided through the workplace, changes in parents' employment status may lead to changes in coverage. Children may also experience spells without insurance as they move between private and public coverage. Indeed, many states require children to be without insurance for three or more months before they can enroll in SCHIP. The evidence on whether these rules reduce public insurance coverage is mixed (LoSasso and Buchmueller 2004; Gruber and Simon 2008). High disenrollment rates from public programs are well-documented (see, for example, Sommers 2005). In many cases the reason is an increase in family income that causes a child to lose eligibility, though there are also cases where state procedures for determining program eligibility cause eligible children to lose Medicaid or SCHIP coverage, if only temporarily. Because of the predominance of managed care arrangements, even if children move directly between public and private insurance such transitions may disrupt relationships with providers, resulting in reduced access to care.

The tendency for children to move on and off public insurance rolls—a phenomenon often referred to as “churning”—raises administrative costs for states and the providers and private health plans with which they contract (Summer and Mann 2006). Three recent studies suggest that the stability of insurance coverage also has significant implications for utilization. Olson et al. (2005) compare outcomes for four

groups of children differentiated by their insurance coverage over the prior year. They find that compared to children with full-year private or public coverage, those who were uninsured part of the year are more likely to report having delayed seeking care for financial reasons and having unmet medical needs and less likely to have an office visit. For most outcomes, however, there was no significant difference between being uninsured for all or part of the year. Aiken et al. (2004) use a more detailed classification scheme that accounts for transitions between public and private insurance. They also find that children with partial year coverage are significantly more likely to report delaying care. Their results suggest that relative to children who are continuously insured, those with partial year coverage are less likely to have at least one physician visit over the year, though these results are less precisely estimated. Leininger (2009) examines how physician visits vary with the months of insurance coverage during the course of a year. She also finds that children with partial-year coverage have fewer visits than those who are insured for a full 12 months.

While these studies use richer measures of insurance coverage than most of the prior literature, they each have limitations related to the data and methods used. Moreover, there has been little work to date on the potential relationship between access to care and the stability of coverage per se, even when the child remains insured. Olson et al. use data from the 2000 and 2001 National Health Interview Survey (NHIS). While the main insurance variables in the NHIS are point-in-time measures, parents of children who are insured at the time of the survey are asked if the child was ever uninsured during the year and parents of uninsured children were asked how many months it had been since the child was last insured. These questions cannot capture direct transitions

between public and private insurance or multiple changes in status, nor can they be used to calculate the number of months a child had each type of coverage. Aiken et al. use slightly different questions available in the 1999 National Survey of America's Families (NSAF) that do identify transitions between public and private insurance. However, because of their retrospective nature, estimates based on these data are still subject to recall error. An additional limitation of both of these studies is that they treat insurance coverage as exogenous. To the extent that factors that affect the stability of coverage also affect utilization, the estimated effects from these studies will be biased. For example, it may be that parents of children with chronic health conditions will take greater efforts than parents of healthy children to ensure that their children maintain continuous insurance coverage. In this case, the effect of discontinuous coverage on access to care will be overstated.

The paper by Leininger (2009) improves upon both of these limitations of the previous literature. Because she uses longitudinal data from the Medical Expenditure Panel Survey (MEPS), she is able to identify more accurately children who experience coverage transitions within a year and to measure the number of months insured. With panel data she is also able to control for unobserved heterogeneity by using a fixed effect regression model. One limitation of her approach, however, is that she does not consider possible differences between public and private insurance nor the effect of transitions between these two types of coverage.

In this paper we use data from the Survey of Income and Program Participation (SIPP) to analyze the relationship between health insurance coverage and access to medical care among children in the years immediately following the enactment of

SCHIP. Because the SIPP is a longitudinal study in which respondents are surveyed every four months, it is a fundamentally superior data source for documenting and measuring transitions in insurance coverage. In each SIPP interview, respondents are asked about their current insurance coverage and their insurance coverage during each month since the last interview. With these rich longitudinal data, we can not only distinguish full year from part year insurance, but we can measure the number of months a child had each type of coverage. In addition, we can distinguish children who had either public or private insurance for the full year from children who were insured for the full year but moved between public and private coverage.

The SIPP also provides information on medical care utilization in special “topical modules” that are administered on approximately an annual basis. This module provides information on the number of times a child visited a physician or other medical provider during the 12 months preceding the interview. We examine how the probability of having at least one visit during the year, as well as the number of visits, varies with insurance coverage over that period. Because it is recommended that all children have at least one well child visit per year, the dichotomous measure is often interpreted as a measure of access. Since children who experience breaks in insurance coverage over the course of a year are likely to differ from children who are continuously insured, we estimate models including child fixed effects to control for unobserved heterogeneity across children.

We find that nearly one quarter of all children—and over one-third of the children with family incomes below 100 percent of the federal poverty level—experience a change in insurance status over a twelve month period. Often, these transitions involve a

spell without any health insurance. As a result, while only 6.8 percent of children are uninsured for twelve continuous months, 25.7 percent are uninsured at some point in the year. Our analysis of utilization suggests that gaps in insurance coverage do result in lower access to care. Although children who have partial year private or public coverage are more likely to have at least one physician visit than children who are uninsured all year, they are significantly less likely to have a visit than children who are insured for a full year.

Data and Methods

The SIPP is collected in a series of panels lasting between 2 and 4 years each. As we are interested primarily in the SCHIP period, in this draft we use the 1996 and 2001 panels.² For ease of interviewing, the entire sample is randomly split into four “rotation groups”, and one rotation group is interviewed each month. Each rotation group in a SIPP panel is interviewed once every four months (a “wave”) to elicit information about the previous four months, including questions about family status, employment, program participation, and insurance coverage. In addition to these “core” questions that are asked every interview, additional questions covering a variety of topics (known as “topical module” questions) are asked on a rotating basis.

For the purposes of this paper, we are primarily interested in the health insurance questions, which are part of the core, and the health care utilization and health status questions, which are topical module questions asked annually (in the topical modules for the third, sixth, ninth, and twelfth waves of the 1996 panel and the third, sixth, and ninth waves of the 2001 panel).

² We are in the process of preparing the 2004 panel, and will add data from it in future drafts.

The health insurance questions in the core data ask about the type of coverage held in each of the four months since the last interview. Using these data, we construct variables that describe each individual's health insurance coverage experience over the year corresponding to the reference period for the utilization questions of the topical module. One of these variables is the child's insurance status at the time of the interview when the topical module on medical care utilization was administered. We refer to this variable as a point-in-time measure of coverage as it is comparable to the variables available in cross-sectional data sets, such as the NHIS. Using data from prior wave interviews, we also construct variables capturing whether the child had various types of insurance all year, whether the child ever had a particular type of insurance during the year, and the months of coverage for each type over the year. One aim of our study is to understand better the value of these more detailed measures relative to a simple point-in-time variable.

For all of these measures, we distinguish between three types of coverage: none (uninsured), public insurance and private insurance. The public insurance category consists mainly of Medicaid and SCHIP plus a very small number of children who qualify for Medicare or are covered by the Indian Health Service. The private insurance category includes employer-sponsored group insurance, which accounts for the vast majority of private coverage, and individually-purchased non-group insurance. CHAMPUS, the insurance program for dependents of military personnel, is considered as private insurance because it is employment related.

The topical module we use includes several questions related to medical care use. In this draft we focus on one question in particular—the number of physician visits over a

year—to construct a dummy variable for whether the child had at least one physician visit, as that variable provides a measure of access to care.

Control variables come from both the core survey and the topical module. A key control is income. Because the availability of public and private insurance will vary according to family income, coverage patterns and the relationship between coverage and access to care will likely vary with income as well. Consequently, we stratify the sample by income, measured as a percent of the federal poverty level (FPL). During the period of our analysis, children in families with incomes below the FPL were eligible for Medicaid and many children with family incomes between 100 and 300 percent of the FPL gained eligibility for SCHIP. The income measure we use to form these categories and as an explanatory variable in our regressions is mean monthly income calculated over the 12 month period used to measure physician visits. Other controls from the core survey include child age, gender, race/ethnicity, family structure, and maternal education. The control variables that come from topical modules are the child’s reported health status, measured on a standard five point scale, and maternal disability status.

As our focus is on children, we use only observations for individuals younger than 16. In addition, we drop observations that have fewer than twelve reported months, as in those cases we are unable to discern what the child’s insurance status was when not observed in the data. An exception to this selection criterion is infants: for children under a year old, we use all available months since the child was born. Our analysis is thus based on an extract that consists of 70,950 observations on 25,721 children from the 1996 panel and 43,983 observations on 19,568 children from the 2001 panel.

Results

Insurance Coverage Over the Year

Table 1 summarizes the distribution of insurance coverage among children during the years 1996 to 2003. It is important to reiterate that because we have information on broad coverage categories, rather than the specific insurance plan in which a child is enrolled, we do not observe changes from one private plan to another or movements between Medicaid and stand-alone SCHIP programs. Even with this limitation, the figures reveal that health insurance coverage for children is very fluid. Nearly one-quarter of all children experienced a transition—either into or out of coverage or between public and private coverage—during the preceding 12 month period. Transitions are most common among lower income children, with over a third of children in the lowest income group and roughly 25 percent of those with family incomes between 100 and 300 percent of poverty experiencing a coverage change. In contrast, coverage was more stable in the upper part of the income distribution, although not perfectly so: above 300 percent of the FPL, 92 percent of children had the same coverage status for the full year.

As a result of these transitions, the percentage of children falling into one of the three coverage categories at some point in the year is substantially greater than the percentage who were in that category for the full 12 months. Previous studies have noted that the number of children who are uninsured at some point in the course of a year is significantly higher than the number uninsured all year. For example, using data from the NHIS, Olson et al. (2005) estimate that in 2000 and 2001 6.6 percent of children were uninsured for a full year and an additional 7.7 percent experienced a spell without insurance that lasted less than 12 months. In our data, the percent of children uninsured

for the full year is roughly the same (6.8 percent) but the percentage uninsured at some point in the year is substantially higher: 25.7 percent.

Both measures of uninsurance decrease with income, though in each income category the percentage of children uninsured at some point in the year is three to four times the percentage uninsured for the full year. There is also a sizeable difference between the percentage of children who are enrolled in public insurance programs for a full year and the percentage that are covered at some point in the year. Below the Federal poverty line, where all children meet income eligibility standards for Medicaid, 43.9 percent of children have public coverage for the full year and an additional 31.3 percent had it for part of the year.

Table 1 also reports the mean number of months in each insurance category over the 12 month period.³ The distributions of these variables (conditional on having been in the category for at least one month) are displayed in Figures 1 to 3. These figures illustrate the well-known issue of “seam bias” in the SIPP. The disproportionate mass at values of 4, 8 and 12 reflects the tendency of respondents to report the same values of a variable like health insurance for all months within a survey wave and to report that transitions occurred at the “seam” between interview periods. Not only will this type of respondent behavior cause the timing of transitions to be measured inaccurately, but it will lead to an under-counting of spells that began and ended within the same survey wave (Ham, Li, and Shore-Sheppard 2009b). This may explain why our estimate of the number of children experiencing insurance transitions is greater than estimates from prior studies

³ The mean months in each category may sum to less than 12 because the sample includes infants less than one year old, or they may sum to more than 12 because some children are reported receiving both private and public insurance at the same time.

using survey questions with a 12 month recall period, such as in the NHIS or the NSAF (Olson et al. 2005; Aiken et al. 2004).⁴

Abstracting from the issue of response error, the data in Figure 1 suggest that for most children, periods without insurance are relatively short. Roughly half of all spells without insurance are between 1 and 4 months. The data in Table 1 show that the probability a child is uninsured at some point in the year decreases monotonically with income. Conditional on having a spell, however, it is children in the middle income group who are most likely to be uninsured for the full year. One possible explanation for this pattern is that among the poorest children spells without insurance tend to occur between periods of Medicaid or SCHIP enrollment. In particular, in the later years of our analysis many states sought to reduce program costs by reversing earlier administrative reforms designed to increase continuity in enrollments. Many children who were disenrolled as a result of these policy changes were actually eligible and later could re-enroll. In contrast, it could be that a greater number of children in the middle income group were ineligible for public insurance (or at least their parents thought so) for the full period.

Together, Figures 1-3 show a positive relationship between income and coverage stability. Nearly ninety percent of children in the highest income category who have private health insurance at some point in the year had that coverage for the entire year. In contrast, when lower income children obtain private insurance it tends to be for shorter periods. For children below the poverty line, spells with public insurance tend to be

⁴ The MEPS is more similar to the SIPP in terms of the length of the recall period, although the recall period is not constant but is instead a function of when the interviews occur for a particular household. As a result, greater frequency of transitions at the seams is not easily discernible in the data, although given the commonness of seam bias there is little reason to believe that the MEPS is entirely free of it.

longer than spells with private insurance, but even in this group only roughly half the children who ever obtain public coverage have it for 12 consecutive months.

Because insurance coverage is so dynamic, any categorization based on coverage at a point in time will obscure considerable heterogeneity in the extent to which children face financial barriers to obtaining health care. To illustrate this directly, we create an insurance variable that is comparable to measures available in an annual survey like the NHIS. Specifically, we treat the month when the topical module on medical care was administered as the “survey month” and categorized children according to their coverage at that point in time. Table 2 relates this categorization to measures that capture how insurance coverage changed over the 12 months immediately preceding that survey. In the full sample (top panel) we see that only 46 percent of children who were uninsured at the time of the survey had been continuously uninsured for at least 12 months up to that point. Slightly more than a quarter of this group had public insurance at some point in the year and over 30 percent had private insurance for part of the year.⁵ As would be expected, among children whose average monthly income over the prior 12 months fell below the federal poverty level, it is more common to have had public insurance over the year—42 percent of low-income “uninsured” children had been enrolled in a public program in the preceding year—and less common to have had private insurance (19.5 percent). Above 300 percent of the FPL, public insurance is much less common, though over 60 percent of the children recorded as uninsured at the time of the topical module survey had held private insurance at some time in the prior year.

⁵ The percent with each type may sum to more than 100 percent because some children are reported having both public and private insurance at the same time.

Insurance Coverage and Utilization—Descriptive Evidence

Comparisons between people with and without insurance are commonly used to estimate how extending coverage to the uninsured would increase utilization. Moreover, in the vast majority of the literature it is common to use a point-in-time measure of insurance coverage. It is important to understand how such comparisons are affected by the fact that many children who are classified as uninsured using a point-in-time measure actually had spells with insurance during the year, and vice versa. An important policy-related question is: if a child goes from being uninsured for a full year to being insured for a full year, how much will his or her medical care utilization increase? We would expect that comparisons based on point-in-time estimates will understate this effect, though it is not clear by how much. To the extent that parents have some discretion in timing provider visits to coincide with periods of insurance coverage, differences between children with part-year and full-year coverage may not be large.

Cross-tabulations presented in Table 3 show how one measure of utilization varies with insurance when coverage is categorized in several different ways. The outcome is a binary variable for whether or not a child had at least one visit to a physician or other medical provider in the 12 months prior to the survey. This measure is commonly used as an indicator of access to primary and preventive care. Because all children are recommended to see a physician at least once a year, this outcome should be less strongly correlated with health status than the total number of visits in a year. Overall, 68 percent of children in our data had at least one visit. There is a positive income gradient, with the probability of at least one visit ranging from 60 percent for

children with average family incomes below the poverty level to 77 percent for children with family incomes in excess of 300 percent of the poverty level.

Consistent with many prior studies, the figures in the first panel of Table 3 show large differences in utilization related to point in time measures of insurance coverage. Fewer than half (46.7 percent) of the children who were uninsured at the time of the survey had a visit in the prior year, compared to 67.4 percent of those with public insurance and 73.0 percent of children with private insurance. For all three insurance categories the probability of having at least one visit increases modestly with income, though the coverage gap persists. Even in the top income category, where financial considerations should be less of a constraint, the utilization rate is 22 percentage points higher for children with private insurance than for children who are classified as uninsured. (Recall that in this income group, very few children are reported to have public insurance coverage. Therefore, results for that category should be interpreted cautiously.)

In the full sample, privately insured children have higher rates of utilization than those with public coverage. The income-stratified results suggest that this difference is driven, at least in part, by unmeasured heterogeneity. Not only do privately insured children come from higher income families, but recall from Table 2 that they are less likely to have been uninsured in the prior year than children who have public insurance at the time of the survey. Therefore, stratifying the sample by income not only reduces the income heterogeneity, but children classified as having public or private insurance are more similar in terms of their coverage over the prior year.

In the second panel of Table 3 we compare children who were uninsured for the full year to children who had either full- or part-year private or public coverage. The part-year categories are not mutually exclusive as children who transitioned between public and private insurance during the year will show up in both part-year categories. For both types of insurance, the utilization rates of children with part-year coverage are only slightly lower than the rates for children who were covered for the full year. This is not surprising. Because of the overlap in the part-year categories and the fact that spells without insurance tend to be short, the majority of children classified as having part-year public or private insurance had some type of insurance for most or all of the year.

In the bottom panel we drop the distinction between public and private coverage and categorize children based on the number of months they had insurance over the prior year. Because of the way respondents tend to report the same coverage for an entire 4 month survey recall period, we use 4 month periods to classify partial year coverage. The tabulations indicate that the probability of having at least one visit increases monotonically with the length of coverage. The gradient is quite similar to what Leininger (2009) reports using data from the MEPS covering essentially the same time period.

A Test for Unobserved Heterogeneity

An obvious limitation of these cross-tabulations is they fail to account for factors that affect both insurance coverage and utilization. Children who experience breaks in insurance coverage over the course of a year are likely to be different in important ways from children who are continuously insured. While we can (and do) control for observed

characteristics in a multiple regression framework, bias from unobserved heterogeneity remains a concern.

Because we observe up to four years of coverage and utilization for children in the 1996 SIPP and up to three years of data for those in the 2001 SIPP we can investigate the importance of unobserved heterogeneity as it relates to the relationship between the continuity of insurance coverage and utilization. One simple test is to examine the relationship between health care utilization in one year with insurance coverage in the *following* year, holding first year coverage constant. To be more specific, consider a sample of children who all had 12 months of insurance coverage in the first of a two year period. Some of these children will also have continuous insurance in year two, while others will experience a spell without insurance in year two. If continuity of coverage is exogenous to utilization, there should be no difference in utilization between these two groups in year one (when they had the same coverage). In contrast, a finding that utilization does differ between these two groups would indicate the importance of unobserved heterogeneity since year two coverage cannot, by construction, have a causal impact on year one utilization.

The results for such a test are reported in Table 4. The samples consist of children who were insured for 12 months in a given year. Overall, 72.6% of this group had at least one visit during that period. The mean for children who maintained insurance coverage for all of the following year is 73.6%, while the mean for children who subsequently lost insurance is 66.7%. When we adjust for covariates, the difference is slightly smaller (4.7 percentage points) but is still statistically significant. When we measure future insurance coverage in terms of months uninsured, we find that an

additional month without coverage in year $t+1$ is associated with a one percentage point reduction in the probability of a visit in year t . The results for each of the income categories are very close to those for the full sample.

One explanation for these results is that stability and continuity in other aspects of a family's life may affect both continuity of insurance coverage and health care utilization. For example, it may be that parents who are “on the ball” and manage to keep their children enrolled in public programs are also more likely to make and keep appointments for regular check-ups. Alternatively, unobserved health status may be important. That is, parents of children with serious health needs may be very careful to make sure that their children maintain continuous insurance coverage. Such children will also tend to have greater utilization.

Whatever the explanation, these results suggest that we cannot interpret the simple correlation between insurance coverage and utilization as causal. Moreover, the fact that the unadjusted and adjusted contrasts in Table 4 are so similar suggests that conditioning on observable characteristics is not sufficient to account for heterogeneity.

Insurance Coverage and Utilization—Regression Results

Since we have repeated observations on individual children in our data, we use an individual fixed effects model to address the issue of unobserved heterogeneity. Including individual fixed effects removes child-specific unobservable characteristics such as those discussed above, with identification coming from children who change their insurance coverage status over time.

The results from our regression models are reported in Table 5. Since the vast majority of the existing literature uses a simple OLS model relating the propensity of a child to have at least one visit to whether the child has insurance, for comparison we estimate such a model, controlling for other factors that affect utilization and that may be correlated with insurance coverage. The results from the simple OLS model are presented in the first column of the table, with results using point-in-time measures of coverage in the first panel. In general, the implied relationship between insurance and utilization is slightly smaller than in the cross-tabs, though the adjusted differences across insurance categories remain statistically and economically significant. For example, when we use point-in-time measures of insurance status, the regression-adjusted difference between publicly insured and uninsured children is 14 percentage points in the full sample, compared to an unadjusted difference of 21 percentage points.

The results from our model including child fixed effects are in the last column of the table. We find that accounting for individual heterogeneity has relatively little effect on the estimated relationship between utilization and public coverage at the time of the survey, but a more substantial effect on the relationship with private coverage, cutting the estimated difference between privately insured and uninsured children in half, to a 7 percentage point higher likelihood of utilization among privately insured children. Since identification of these effects comes from children who change coverage over the course of the survey and hence must be observed at least twice, we re-estimate our OLS model on the subsamples of children observed for more than one year of data (results presented in column 2) and children observed in all waves of the data (results presented in column 3). The results in columns 1-3 are quite similar, so it appears that any differences

between the OLS and fixed effects models are not arising solely because of changes in sample composition.

When we measure coverage over the past year using the categories of public part-year, public full-year, private part-year, private full-year, and uninsured all year (second panel of Table 5) using our preferred fixed effects model, we find that the impact of having partial coverage on utilization is less than half the estimated impact of full-year coverage (which is comparable to the estimates for point-in-time coverage). Children who have public coverage for part of the year, for example, have a 4.5 percentage point higher likelihood of utilization than children who are uninsured all year, while this increase is 2.7 percentage points for children who have partial-year private coverage. This finding suggests that policies designed to ensure continuous coverage have an important role in enabling access to care, although we need to be cautious about attributing a causal interpretation to our estimates. While the fixed effect approach successfully accounts for time-invariant sources of bias, we are unable to account for idiosyncratic shocks that affect both the propensity to use care and insurance status.

Keeping this caveat in mind, in the last two panels of Table 5 we investigate whether length of coverage, and not just whether a gap in coverage exists, is related to utilization. In these models the insurance variable is the number of months a child was covered during the prior year. One potential weakness of this specification is that it imposes a linear relationship between the amount of time a child is covered and utilization. However, an inspection of the data suggests that this is not a bad approximation. The coefficient estimates indicate that each additional month of

insurance coverage is associated with a 1 percentage point increase in the probability of having at least one physician visit during the year.

The results in Table 5, though not establishing causality, do provide support for the argument that going without insurance, even for relatively short periods of time, significantly reduces children's contacts with medical providers. These results cannot tell us, however, whether transitions between public and private insurance per se affect utilization. To test for such an effect, we take a sample of children who were insured for the full 12 months of the analysis period and compare those who had the same type of coverage for the full year to those who had mixed coverage. The results, which are reported in Table 6, suggest that even insurance transitions that don't involve a spell without any coverage are associated with a reduction in utilization. When child fixed effects are included, children who have public insurance coverage for a full year are 4.7 percentage points more likely to have at least one physician visit than children who were insured for the full 12 months but moved at some point in the year between public and private coverage. We find no statistically significant difference between continuously insured children who had part-year private coverage and full-year private coverage, however. This seemingly puzzling result may be due to the fact that identification in the fixed effects models is coming from children who experience a change in insurance coverage at some point. Since those children are from the lower end of the income distribution (since by definition they must be receiving public coverage at some point during the sample), the fact that full-year private coverage and part-year-private-part-year-public coverage appear to be associated with similar levels of utilization may indicate that the private coverage available to low-income children is not demonstrably

better than public coverage. It is important to note that insurance coverage transitions may not be exogenous, so once again while these results are consistent with transitions leading to reductions in access to care, we cannot interpret these estimated relationships as necessarily causal.

To examine the robustness of our findings, we repeated our analyses splitting our sample by age (<5, 4-9, 10-12, 13-15) and find that the pattern and significance of our results hold, though the magnitudes are somewhat smaller for some groups. We also repeated our analyses using family fixed effects instead of child fixed effects and obtained estimates that were between the OLS and child fixed effects estimates.

Concluding Comments

Panel data from the SIPP are well suited for analyzing the stability of children's health insurance and the implications of coverage stability for access to care. Our analysis uses data from the 1996 and 2001 panels, which span the years 1996 to 2003. There are several important findings.

First, we find that in a given year nearly one quarter of all children make a transition, either into or out of coverage or between public and private coverage. While only 6.8 percent of children were uninsured for a full year, over one-quarter were uninsured for part of the year. Similarly, roughly as many children were enrolled in Medicaid or SCHIP for part of the year as were enrolled for the full year.

Second, coverage stability is positively related to income. Over one-third of the children in families with average incomes below the federal poverty level experienced a transition among the three broad insurance categories. One in five children in this

income category had public and private insurance at some point in the same year. In contrast, 25 percent of children in families with incomes between 100 and 300% of the FPL and 9 percent of those in families with incomes above 300% of the FPL experienced a change in coverage.

Third, because insurance transitions are so common, categorizing children based on their insurance coverage at a single point in time produces groups that are internally heterogeneous in terms of their coverage history. In our data, fewer than half of the children who were uninsured in a particular month had been uninsured for the entire prior year.

A fourth key result is that coverage transitions are significantly correlated with the probability of having at least one physician visit over the course of a year. Children with part-year public or private insurance are more likely than children who were uninsured all year to have a visit, but they have significantly lower rates of utilization than children with full-year coverage. Even among children who were insured for an entire year, we find that children who had either public or private insurance for the full 12 months are significantly more likely to have one or more visits than children who moved between public and private coverage. It is important to note that because we cannot observe changes between different health plans or between Medicaid and a stand-alone SCHIP plan, our analysis likely understates the importance of the coverage continuity for access to care.

This research is preliminary and we are in the process of extending it in several directions. The first and most basic extension is to add data from the 2004 SIPP panel. The additional data will not only provide more observations but will extend the analysis

to a period when some states were modifying SCHIP policies related to eligibility and others were directly limiting the number of children enrolled. We plan to examine how these different policy parameters affect the continuity of coverage and measures of access to care.

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Figure 1. Months Uninsured Among Children with at Least One Spell, by Poverty Category

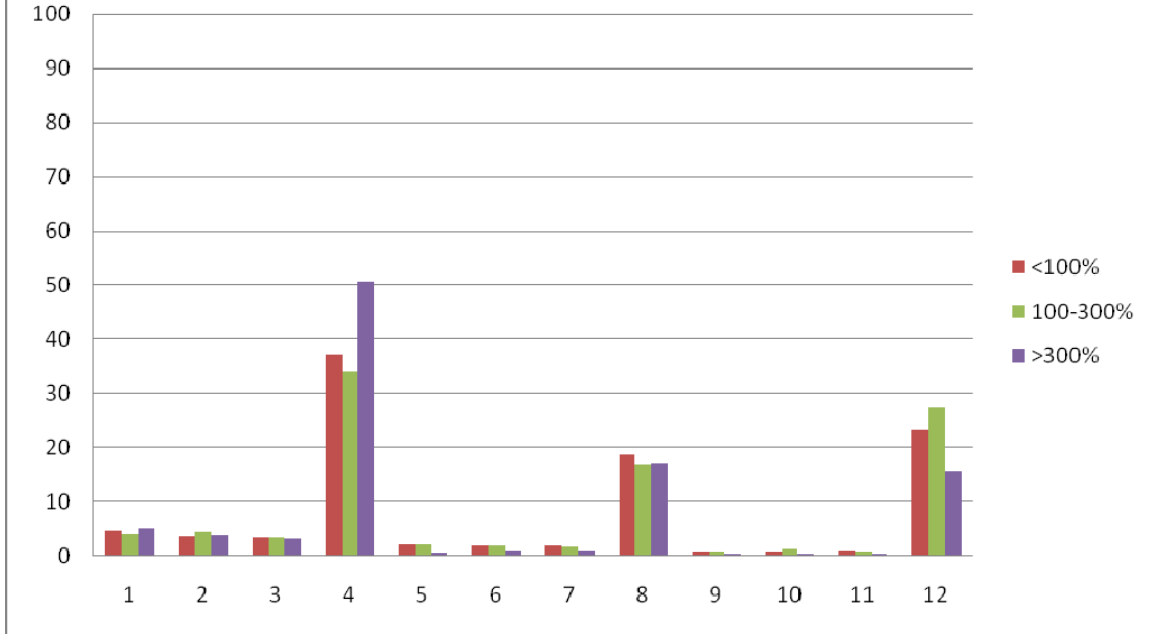


Figure 2. Months with Public Insurance Among Children with at least 1 Spell, by Poverty Category

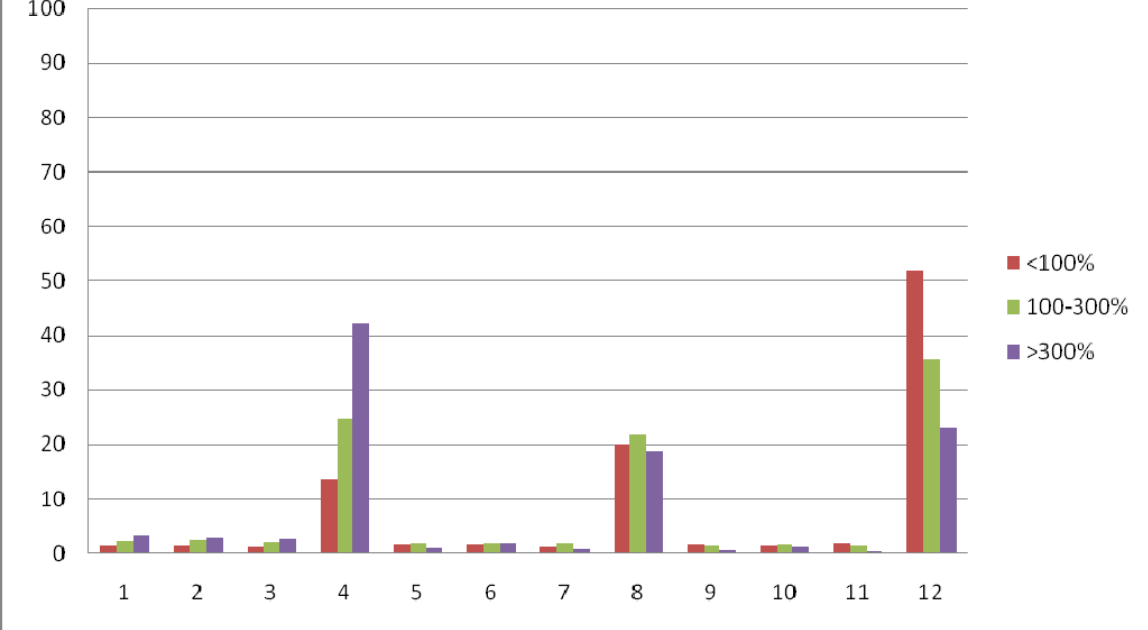


Figure 3. Months with Private Insurance Among Children with at least 1 Spell, by Poverty Category

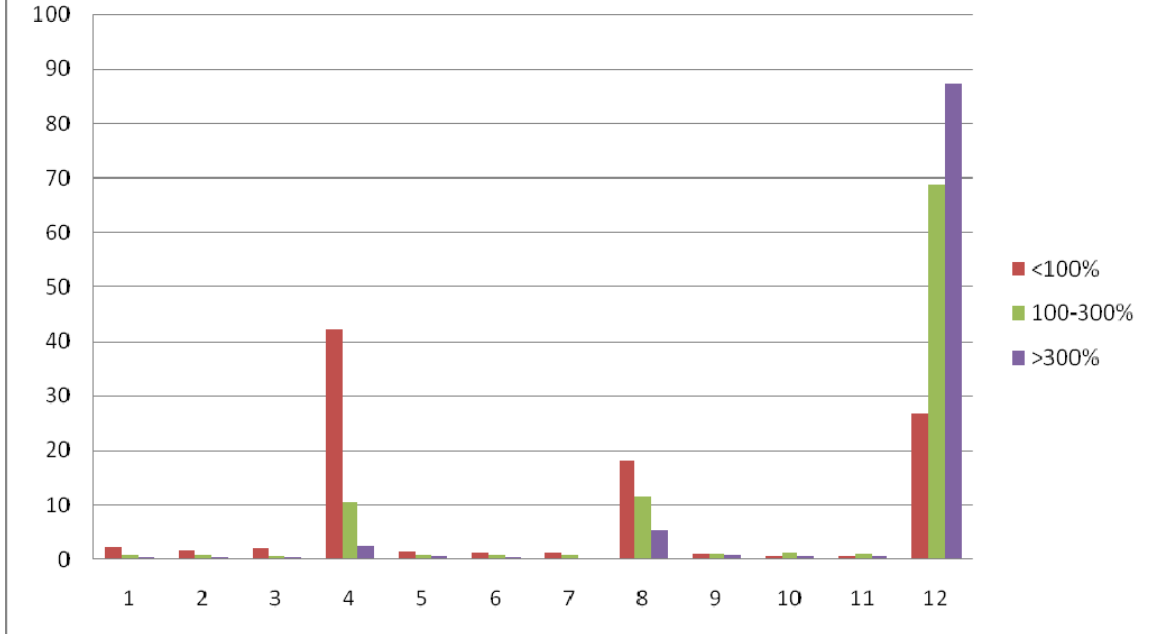


Table 1. Insurance Coverage over the Prior Twelve Months

	Full Sample	By Poverty Category		
		<100%	100-300%	>300%
% same insurance all year	78.6%	64.5%	75.2%	91.5%
% uninsured at some point	25.7	42.4	30.4	9.6
% uninsured full year	6.8	11.1	8.8	1.6
Mean months uninsured	1.72 (3.45)	2.81 (4.02)	2.10 (3.78)	0.56 (1.99)
% public at some point	28.5	75.2	25.2	3.4
% public full year	14.1	43.9	9.9	0.9
Mean months public	2.47 (4.33)	6.97 (4.93)	2.01 (3.90)	0.22 (1.37)
% private at some point	75.6	34.4	78.9	97.3
% private full year	58.3	10.6	57.4	89.1
Mean months private	7.86 (5.14)	2.39 (3.91)	8.04 (4.95)	11.03 (2.67)
% both private and public at some point	10.9	20.7	12.9	2.3
Number of observations	117,752	24,419	49,888	40,799

Table 2. Coverage over the Prior 12 Months by Insurance Status at Time of Interview

	By Point in Time Insurance Status		
	Uninsured	Public	Private
<i>All Children</i>			
% with same coverage all year	46.4%	67.9%	88.4%
% uninsured at all during year	100.0	25.9	9.5
Mean months uninsured	8.34 (3.62)	1.18 (2.29)	0.42 (1.45)
% with public at all during year	27.2	100.0	9.5
Mean months with public	1.54 (2.79)	9.85 (3.11)	0.68 (2.36)
% with priv. insurance during year	32.7	19.7	100
Mean months private insurance	1.94 (3.09)	0.95 (2.09)	11.00 (2.39)
Number of observations [percent of sample]	17,234 [14.6]	21,307 [18.1]	79,211 [67.3]
<i>Poverty Category <100%</i>			
% with same coverage all year	46.2%	72.8%	63.7%
% uninsured at all during year	100.0	23.4	25.9
Mean months uninsured	8.25 (3.60)	1.04 (2.15)	1.22 (2.35)
% with public at all during year	42.0	100.0	48.8
Mean months with public	2.46 (3.24)	10.14 (2.94)	3.93 (4.70)
% with priv. insurance during year	19.5	15.4	100
Mean months private insurance	0.97 (2.18)	0.70 (1.76)	8.35 (3.64)
Number of observations [percent of sample]	5,873 [24.1]	13,349 [54.7]	5,197 [21.3]
<i>Poverty Category 100-300%</i>			
% with same coverage all year	49.1%	60.1%	84.9%
% uninsured at all during year	100.0	29.8	12.4
Mean months uninsured	8.62 (3.60)	1.41 (2.50)	0.55 (1.64)
% with public at all during year	21.5	100.0	11.8
Mean months with public	1.17 (2.48)	9.42 (3.30)	0.80 (2.49)
% with priv. insurance during year	35.6	27.6	100
Mean months private insurance	2.13 (3.20)	1.39 (2.50)	10.86 (2.49)
Number of observations [percent of sample]	8,904 [17.8]	6,632 [13.3]	34,352 [68.9.0]

Table 2, Continued

	Insurance at Time of Survey		
	Uninsured	Public	Private
<i>Poverty Category >300%</i>			
% with same coverage all year	33.1%	48.7%	95.0%
% uninsured at all during year	100.0	35.2	4.6
Mean months uninsured	7.35 (3.61)	1.70 (2.57)	0.19 (0.97)
% with public at all during year	8.3	100.0	1.8
Mean months with public	0.41 (1.48)	8.29 (3.59)	0.11 (0.89)
% with priv. insurance during year	61.9	35.4	100
Mean months private insurance	4.12 (3.67)	1.97 (3.02)	11.51 (1.72)
Number of observations	1,972	520	38,307
[percent of sample]	[4.8]	[1.3]	[93.9]

Table 3. The Probability of at Least One Physician Visit by Insurance Status and Income

	All Children	By Poverty Category		
		<100%	100-300%	>300%
All Children	.681	.598	.652	.765
<i>By Coverage at Time of Survey</i>				
Uninsured at survey	.467	.433	.461	.557
Public insurance at survey	.674	.658	.695	.712
Private insurance at survey	.730	.630	.693	.776
<i>By Full-Year/Part-Year Status</i>				
Uninsured full year	.412	.392	.402	.492
Public insurance part year	.601	.555	.626	.680
Public insurance full year	.704	.686	.731	.795
Private insurance part year	.612	.567	.619	.659
Private insurance full year	.743	.673	.701	.780
<i>By Months Uninsured</i>				
Insured full year	.731	.674	.703	.779
1 to 4 months uninsured	.604	.558	.608	.672
5 to 8 months uninsured	.539	.490	.552	.609
9 to 12 months uninsured	.413	.376	.412	.500

Table 4. The Probability of Having a Doctor's Visit in Year t as a Function of Insurance Coverage in Year t+1

	Full Sample (N = 58,357)		< 100 FPL (N = 9,639)		100 – 300 FPL (N = 23,245)		Above 300 FPL (N = 25,473)	
Year t+1 Coverage								
1. Uninsured at any point, year t+1	-0.069 (0.006)	-0.047 (0.006)	-0.054 (0.011)	-0.052 (0.011)	-0.051 (0.009)	-0.052 (0.009)	-0.034 (0.011)	-0.022 (0.011)
2. Months uninsured, year t+1	-0.014 (0.001)	-0.010 (0.001)	-0.009 (0.002)	-0.009 (0.002)	-0.011 (0.002)	-0.011 (0.002)	-0.009 (0.002)	-0.006 (0.002)
Covariates?	No	Yes	No	Yes	No	Yes	No	Yes

Notes: The sample is restricted to children who were insured for 12 months in year t.

Table 5. Regression Results: Insurance Coverage and the Probability of at Least One Physician Visit

	Full Sample	Count>1	Non- Attriters	Child FE
<i>Insurance at Time of Survey</i>				
Public as of Survey	.144 (.005)	.142 (.005)	.138 (.006)	.104 (.007)
Private as of Survey	.147 (.005)	.147 (.005)	.143 (.005)	.076 (.007)
<i>Insurance Coverage Past Year—Categorical</i>				
Public Part-Year	.067 (.005)	.066 (.006)	.061 (.006)	.045 (.008)
Public Full-Year	.179 (.006)	.177 (.006)	.178 (.007)	.114 (.010)
Private Part-Year	.056 (.005)	.056 (.005)	.061 (.006)	.027 (.007)
Private Full-Year	.177 (.006)	.177 (.006)	.176 (.007)	.077 (.009)
<i>Insurance Coverage Past Year—Months by Type</i>				
Months Public	.015 (.001)	.015 (.001)	.015 (.001)	.011 (.001)
Months Private	.016 (.0005)	.016 (.0005)	.016 (.001)	.008 (.001)
<i>Insurance Coverage Past Year—Months Insured</i>				
Months Insured	.020 (.001)	.020 (.001)	.020 (.001)	.012 (.001)
Number of Observations	108,336	102,494	81,174	108,336

Notes: Covariates include indicator variables for age (16 categories), health status (5 categories), year (8 years), maternal education (12 categories), gender, race, Hispanic ethnicity, family headed by a single mother, mother disabled and whether the maternal disability indicator is missing, whether health status was imputed, and continuous measures of average family income over the preceding 12 months, average family income squared, and the range of monthly income normalized by the mean.

Table 6. The Effect of Public-Private Transitions on Utilization

	Full Sample	With Child Fixed Effects
Full Year Public	.059 (.008)	.047 (.012)
Full Year Private	.042 (.008)	-.002 (.014)
Number of observations	81,543	81,543

Notes: The sample is limited to children who are reported to have some type of health insurance for all 12 months. Covariates include indicator variables for age (16 categories), health status (5 categories), year (8 years), maternal education (12 categories), gender, race, Hispanic ethnicity, family headed by a single mother, mother disabled and whether the maternal disability indicator is missing, whether health status was imputed, and continuous measures of average family income over the preceding 12 months, average family income squared, and the range of monthly income normalized by the mean.