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The Effect of a Health Care Visit on Transitions to Medicaid or SCHIP among Uninsured Low-Income Children

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Abstract: Despite major efforts to expand public program eligibility to uninsured children, many low-income children remain unenrolled. Some have argued that we should not be as concerned about these eligible, uninsured children because they can and will be become enrolled with they get sick and present for a health care visit. This study addresses the question of whether uninsured low-income children do in fact become insured when they are brought in for care. It uses longitudinal data from two panels of the Medical Expenditure Panel Survey (MEPS) to model the effect of a health care visit on transitions from uninsured to insured among low-income children. An instrumental variable approach, using data on sibling accidents, is employed to overcome problems associated with the endogenous relationship between visits and enrollment. Results suggest that many low-income uninsured children are not becoming enrolled after a health care visit. Outreach efforts such be bolstered and strengthened to address barriers that keep parents from enrolling their children in public coverage.

BACKGROUND

Since the late 1980's, the combined efforts of state and federal governments have increased greatly the number and percentage of low income children who are eligible for public health insurance coverage. Early expansions under Medicaid focused on infants and young children, requiring states to set income eligibility thresholds no lower than 185 percent of the federal poverty level (FPL) for infants and 133 percent FPL for children under age 6. Older children were phased in gradually, with minimum income thresholds set at 100 percent FPL. As of October 1, 2002, all children under age 19 in families with incomes below the FPL are eligible for Medicaid. States have various options available for setting income thresholds higher than the federal mandated minimums, and many have chosen to do so. In federal fiscal year 2002, Medicaid covered more than 25.5 million children at some time during the year, making it by far the largest public program for low income children.[1]

States began implementing further expansions through the State Children's Health Insurance Program (SCHIP) soon after that legislation was passed in late 1997. The SCHIP program was motivated in part by the fact that substantial numbers of low income children remained uninsured despite the earlier Medicaid expansions. Through SCHIP, most states opted to cover children under age 19 at income levels up to 200 percent FPL, though 13 states have set their SCHIP thresholds even higher.[2] Only 8 states have levels set below 200 percent FPL, with 5 states at 185% FPL and the others at or above 150% FPL. As of December, 2004 just over 3.9 million children were enrolled in SCHIP (Kaiser Commission on Medicaid and the Uninsured (Smith and Rousseau September 2005). Together, these expansions have resulted in virtually all low-income children being eligible for public coverage as of 2002(Cunningham 2003).

It has long been recognized, however, that eligibility for public programs is not the same as being enrolled. Early studies have documented relatively low take-up rates of public coverage, although recent work suggests that take-up rates have improved since the onset of the State Children's Health Insurance Program (SCHIP)(Remler and Glied 2003; Selden, Banthin, and Cohen 1998; Selden, Hudson, and Banthin 2004). Special outreach and enrollment simplification efforts through SCHIP have been successful in increasing SCHIP take-up rates from the low of 10 percent in the first years to rates between 60 and 70 percent in recent years(Cunningham 2003; Selden, Hudson, and Banthin 2004). In addition, many of these improvements have had a spillover effect on Medicaid enrollment, in part because states must first rule out Medicaid eligibility before enrolling a child in SCHIP. Take-up rates are highest among children in families with incomes at or below the welfare payment standard, in part because these families are more likely to have experience with other public assistance programs such as welfare or food stamps. One study estimating Medicaid take-up rates approaching 80 percent in 2002(Selden, Hudson, and Banthin 2004). Still, this same study estimates that 6.4 million or more than 60 percent of all uninsured children were eligible for Medicaid or SCHIP but not enrolled in early 2002.

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[1] From the Henry J. Kaiser Family Foundation website, Kaiser Commission on Medicaid and the Uninsured, Medicaid Facts. Data complied by the Urban Institute using state MSIS files.

[2] States that had already set their income eligibility limits higher than federal mandated levels are permitted to set their SCHIP income thresholds 50 percentage points higher than the existing thresholds. As of July, 2005, 15 states have SCHIP income thresholds above 200 percent FPL.

Some have argued that uninsured children who are eligible for public programs should not be counted in the pool of the uninsured because they can apply for coverage and become enrolled when they present for care. This argument is made in particular about children who are eligible for traditional Medicaid because that coverage extends retroactively to the three month period prior to when an application is made.[3] Others argue that we should still be concerned about eligible-but-unenrolled children because they are less likely to seek out care, especially care that is more discretionary. Prior research has shown that children with some form of coverage are more likely to utilize care, particularly preventive care, have fewer access problems, and have fewer unmet health care needs(Bermudez and Baker 2005; Burstin et al. 1998; Christakis et al. 1999; Currie 2002; Dafny and Gruber 2005; Davidoff et al. 2000; Kempe et al. 2005).

This study addresses the relatively narrow research question of whether children really do become enrolled in public coverage when they come into contact with a health care provider. The answer has implication for how we structure outreach efforts. If children do become enrolled following a health care visit, it would be consistent with the notion that some parents make a choice not to enroll their children until they need care. It would also be consistent with the idea that providers are adequately motivated to help low-income families enroll uninsured children to reduce the amount of uncompensated care they incur. It may still be the case that uninsured children have fewer visits and greater unmet needs than their insured counterparts. But outreach efforts for this population may need to move beyond raising awareness about the program to focus more directly on reducing direct and indirect enrollment costs and on helping parents understand the value of enrolling their children. If, on the other hand, children are not getting enrolled after a visit, we would want to ensure that existing outreach efforts are bolstered and improved upon rather than curtailed.

CONCEPTUAL FRAMEWORK

We would expect parents of eligible children to take up coverage when the expected benefits of enrolling in the program exceed the expected costs. The expected costs and benefits will be influenced potentially by:

- The direct cost of obtaining coverage (via premiums, deductibles, and point-of-service cost sharing)
- The indirect cost of enrolling (application time/burden/effort; perceived stigma)
- The magnitude of the expected benefit relative to family income/wealth
- Beliefs about the value of health care services (influenced by cultural factors, prior experiences with the health care system, and health status)
- Level of risk aversion (for children, this would apply to the parents)
- The availability of and perceptions about alternatives to coverage (such as the availability of safety new providers and other forms of charity care)

[3] Coverage under SCHIP is only retroactive in states with Medicaid expansion programs as opposed to separate state programs.

Recent reviews by Remler and Glied and by Currie synthesize what we know about the take up of public program benefits. Few previous studies have isolated the causes of low take-up rates, though several have established associations between enrollment in public coverage and individual characteristics and/or program design features(Currie 2004; Remler and Glied 2003; Ross and Hill 2003). Individual characteristics associated with take-up of public coverage include age, race, ethnicity, Hispanic origin, immigrant status, past experience with public programs, family income level, family size, and employment status of the child's parents. Program features associated with take-up include the size of the expected benefit, community-based enrollment assistance, automatic enrollment, and reducing recertification frequency (Aizer 2003; Blank 1997; Currie 2004). Exhibit 1 maps out how these characteristics might influence the core structural factors outlined above. Those factors that would potentially be influenced by a visit to a health care provider are highlighted in bold.

THE MODEL

The model I would ideally like to estimate has the following form:

$$\Pr(MAID/SCHIP_{it+2} \mid unin_{it-1}) = F(X_{it} \cdot b + Visit_{it} \cdot v + A_{it} \cdot a + \text{Month}_t \cdot t + e_{it})$$

The dependent variable is the probability that the child becomes enrolled in Medicaid or SCHIP during the month of the visit or in either of the months following the visit. The visit variable is either a measure of any visit by a child in the family, or of an inpatient hospital or emergency room visit by any child in the family. The model includes a set of month dummy variables to control for unobserved programmatic and seasonal effects that vary over time (including seasonal differences in the demand for health care, such as the spike in visits associated with the start of the school year).

Ideally the model would also include variables to measure all the factors outlined earlier and listed below that influence takeup of public coverage for uninsured children.

Program and Provider Characteristics:

- Medicaid and SCHIP outreach and enrollment education/ assistance programs
- Medicaid and SCHIP eligibility and coverage features (including whether program covers parents)
- Premiums and cost sharing
- Eligibility determination and enrollment process
- Medicaid and SCHIP provider supply and location
- Supply and location of safety net providers
- **Provider attitudes toward public program participants**
- **Provider action to assist with enrollment Medicaid and SCHIP program features**

Child and Family Characteristics:

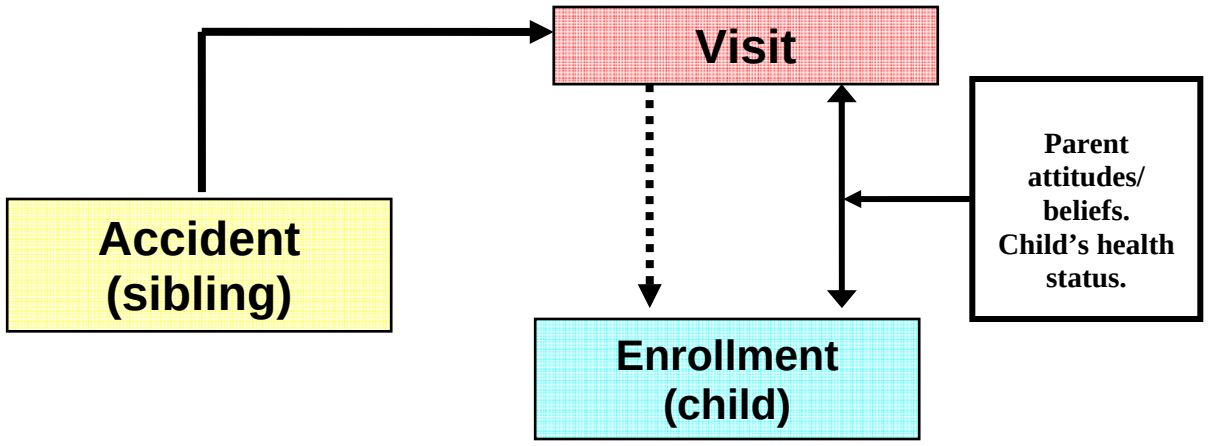
- Family income and wealth
- Family size
- Child age
- Race
- Ethnicity
- Language
- Immigration status
- Eligibility category (medical need versus income; SCHIP versus Medicaid).
- Prior experience/ familiarity with enrollment process.
- Past experience with health care services and with public programs
- Access to ESI (parent employment status/prospects; marital status)
- Awareness of and experience with safety net providers
- **Health status**
- **Awareness of eligibility.**
- **Perceptions about the availability and quality of Medicaid and SCHIP providers Health Status**

Again, those variables that would be potentially influenced by a health care visit are highlighted in bold. Because both visits for and enrollment of children require parents to act on behalf of their child, many of these control variables are measures of parent characteristics. This includes a measure of parent attitudes toward and preferences for health care, represented by *A* in the above model, which would encompass a component of risk aversion. Some of these factors, however, are unobserved and/or measures are not available in the data; their influence is captured in the error term. Most important among the unobserved variables is parent attitudes toward and preferences for health care because this is likely to be correlated with the visit variable, which means that the visit measure is endogenous. Using the model terms, the problem is that:

$$e_{it} = F(A_{it} \cdot a + u_{it})$$

We can think of the visit variable, or the propensity to use health care services in this model, as having two components. One is an exogenous component that relates solely to an unpredictable change in health status that precipitates the need for care. This is the component that traditional health insurance coverage is intended to address. The other component is more discretionary and influenced by individual attitudes and preferences for health care as well as the costs of care. It is this latter "endogenous" component that we worry about when modeling the impact of a visit on enrollment.

To address this endogeneity concern, I use an instrumental variable approach, with an instrument that is associated with the more exogenous component of the family visit variables. Specifically, I use a measure of whether the child's sibling had an accident or injury during the "visit" month. IV estimation relies on variation in the visit variable that is not correlated with the vector of unobserved characteristics, most notably parent attitudes and preferences about health care. The hypothesized relationship between sibling accidents, visits, and enrollment of the uninsured child is shown in the following diagram:



The validity of the instrumental variable depends on two assumptions being met. First the IV must be correlated with the engodenous variable(s). Second, the IV must be correlated with the outcome of interest, enrollment in public coverage, *only* through it's relationship with the endogenous variable (so as not to be correlated with the error term in the enrollment model).

The first assumption can be tested, by regressing the endogenous variable on the instrumental variable along with other exogenous control variables and determining the significance of the coefficient on the IV. The second assumption (that the IV not be correlated with the error term in the enrollment equation) cannot be verified empirically but instead must rely upon theory and suggestive evidence. The intuition for the sibling accident IV is that a sibling accident or injury would be strongly associated with a health care visit (for the sibling) but would not be associated with the child's health status nor with the parent's attitudes/perceptions about health care and enrollment. Using sibling accidents rather than child accidents helps alleviate the problem that some component of accident-related visits is not random and is instead related to the child's health status and other factors that are endogenous with enrollment.

DATA

The data are from the household component of the 2001 and 2002 panels of the Medical Expenditure Panel Survey (MEPS), covering the time period 2001-2003. The MEPS household component collects data for each panel through a series of five interviews conducted over a 2.5-year time period. The length of time between each round varies but is typically 4 or 5 months. Persons included in the file were present for some portion of both panel years (2001 and 2002 for panel; 2002 and 2003 for panel 7). A total of 20,578 persons are included in the Panel 6 file and 15,732 persons in the panel 7 file. Weights used in the analysis were taken from the relevant panel-specific longitudinal weight files. Data on each child are linked with selected data on the child's siblings and parent(s) (a grandparent household head is used if neither parent is present and the child lives with a grandparent). The file also contains data on health conditions and service utilization for each child that is taken from the relevant condition and utilization files.

The analytic sample is restricted to children who were under the age of 19 as of December 31, 2003. Children living in households with no parent or grandparent head of household were excluded (a total of 130 children were excluded on this basis). The resulting sample included 10,736 children in 5,659 families. The data are organized into person-month observations, with up to 24 observations per child. Further restrictions in the sample are imposed at the observation level, primarily limiting the analysis to children uninsured during a particular month and those in low-income households.[4] Sample means for various characteristics are summarized in Table 1, for all children and for the two groups of uninsured, low-income children. In all analyses, standard errors are adjusted to account for the occurrence of multiple observations per child and family.

The dependent variables are two indicator variables for transitions from uninsured to insured. One measures whether the child gained Medicaid or SCHIP coverage and the other measures whether the child gained any form of coverage. Both are constructed using monthly health insurance variables, and the variables are coded with a 1 if the transition took place either during the "visit" month or during either of the two months directly following the visit month. The 3-month window for the transitions allows for a time lag between the visit and enrollment in public coverage, accommodating for delays in enrollment processing and/or parents becoming aware of their child's enrollment status. The dependent variable for gaining any coverage allows for the possibility that health care visits may also increase parent motivation to enroll their child(ren) in available private coverage, as well as the possibility that parents may mistakenly report that a child's Medicaid or SCHIP coverage is private coverage.[5]

Two measures of health care utilization are constructed as the main explanatory variables. One is a measure of whether any child in the family had a visit during the month. The visit could be an inpatient or outpatient hospital visit, a visit to the emergency room, or a visit to an office-based physician or other medical provider. The other measure restricts visits to those to a hospital or emergency room. The distinction is meant to allow for the greater likelihood that provider-based enrollment assistance would take place in a hospital or emergency room setting. Other provider sites, such as community health centers and other safety net provider sites have on-site enrollment assistance supported, but many private physician offices do not.

Numerous variables were constructed to capture characteristics about children and their families that are used as controls in the analysis. This includes fixed characteristics such as race, ethnicity, child and parent immigrant status and various measures of family composition. The model also controls for characteristics that change over time, including changes in parent employment status, parent work hours and wages, parent and sibling insurance coverage, and parent marital status.

[4] MEPS income data included in public use files are annual rather than monthly.

[5] Recent studies have compared survey and administrative data and found that parents sometimes mischaracterize Medicaid or SCHIP as private coverage. This has been attributed in part to the fact that in recent years states have structured their expansion programs in ways that more closely resemble private coverage—including giving the programs new, catchy-sounding names and implementing premiums and other cost sharing features that resemble features of private plans. This is especially true for SCHIP. In addition, the widespread use of HMOs in Medicaid and SCHIP, often well-known HMOs with both private and public lines of business, makes it more likely that parents may mistakenly believe their child has private coverage.

LIMITATIONS

Information on income, health insurance coverage, employment, and other characteristics are self-reported and therefore subject to the same concerns about accuracy as in other survey datasets. Coverage data are likely to be better in this survey because health is the survey's primary focus and because source of payment information is available (some of it validated) to use for accuracy and consistency checks during the editing process.

MEPS public use files also do not contain sufficient detail on income and state of residence to construct a refined measure of eligibility for public coverage. For this study, a child's potential eligibility for public coverage is based on an annual measure of family income relative to the federal poverty level, and the analysis is limited to children in families with incomes below 200 percent of FPL. During the time period for this study, all states had implemented expansions of Medicaid and SCHIP that together made children under age 19 eligible at levels at or above 200% FPL all but 8 states. As a sensitivity test, all the analysis is repeated for a subset of children with family incomes below 125% FPL. All of these children would be eligible for Medicaid or SCHIP, with the vast majority eligible for traditional Medicaid.

Finally, I have not adjusted income to account for earnings and childcare expenses that are disregarded in the eligibility determination process. These disregards have the effect of increasing the effective income thresholds. I also do not account for assets, which have the effect of lowering the effective income threshold. However, during the study period only 4 states still had an asset test for their children's programs (asset tests are still widely used in eligibility determination for older and disabled populations). (The Henry J. Kaiser Family Foundation 2005).

RESULTS

We can begin by looking at the unadjusted rates of transitions to coverage, and the relationship between different types of health care events and transitions to public and private coverage for low income children. Figures 1 and 2 show transition rates for uninsured children, comparing overall rates with the rates associated with (1) a sibling accident, (2) any health care visit, and (3) a visit to the hospital or emergency room. Figure 1 includes uninsured children with family income under 200 percent FPL, while Figure 2 is restricted to the population with family income under 125 percent FPL. The first thing to note about these figures is that by far the most common event for uninsured children is to remain uninsured, regardless of whether a health care visit occurs. The largest rate of transition into coverage (30.3%) occurs for children in the lowest income group, when an emergency room or hospital visit takes place. The corresponding rate for this group associated with any visit is about 5 points lower, at 24.7 percent.

Even for this more vulnerable group of low income children, most of whom would be eligible for Medicaid rather than SCHIP, 63.3% remain uninsured despite having a visit to the hospital or emergency room. Eighty-percent of all children in families with incomes under 200 percent FPL remain uninsured despite having had some type of health care visit, and 68 percent remain

uninsured despite having had a visit to the ER or hospital. Figure 3 combines data from Figures 2 and 3, to show how the different types of transition rates compare across the 3 health events (sibling accident, any visit, and hospital or ER visit). While this figure clearly suggests a positive effect of visits on transitions to public coverage, especially among the lowest income group, a sizable percentage remain uninsured. It also appears that sibling accidents and health care visits are associated with very little movement toward private coverage for either group of uninsured children.

Turning to the multivariate analysis, Table 2 shows the results from probit regressions of transitions to Medicaid and SCHIP, using the endogenous visit variables. (separate regressions were estimated for the two visit variables; since the coefficients on virtually all the control variables were nearly the same, I include the estimates for the emergency room/hospital visit variable in the table for ease of presentation). Results from these regressions will be compared with the results from the IV models to determine the direction and size of any differences in estimates derived from each model. Coefficients on the visit variables from the probit models are relatively large and highly significant in each equation.

Results from various tests suggest that sibling accidents are a good instrument for both visit variables. The "first stage" regressions of the sibling accident variable on the visit variables (along with other controls from the enrollment equation) show a strong correlation between sibling accidents and each of the 2 visit variables (see Table 3). While not a definitive test, results from a regression of the enrollment outcome on the sibling accident variable (along with other exogenous variables) shows a highly insignificant coefficient on the sibling accident variable (see Table 4). This suggests it is unlikely that sibling accidents are correlated with the error term in the enrollment equation. Tests conducted after IV probit estimation soundly support the null hypothesis that the error terms in the structural equation and the reduced-form equation for the endogenous variable are not correlated. The values of Wald test statistics reported after IV probit estimation in Stata are small and never significantly different from zero, even at the 10 percent level.[6]

Results from Heckman-like tests following IV regression estimation strongly reject the null hypothesis that coefficients derived from the IV and OLS models are same. Tests of the null of no difference in all 4 cases resulted in very large a chi-square statistics, sufficient to soundly reject the null of no difference and conclude that coefficients from the OLS regression differ significantly from the IVreg coefficients, at the 0.000 level.This suggests that the visit variables are in fact endogenous and would therefore yield biased results in the enrollment models. Since the sibling accident instrument appears to be strong, and the visit variables do in fact appear to be endogenous with enrollment, an instrumental variables approach seems warranted.

The accident variable used as the instrument includes both random and non-random components, so it is useful to compare children with and without sibling accidents to determine if the groups differ in ways that could bias the results. Table 5 compares the two groups of children and highlights where the groups differ significantly. It turns out that the groups are different in a number of ways, though nearly all relate to ethnicity and immigrant status. Among uninsured

[6] This test is discussed in Wooldridge's "Econometric Analysis of Cross Section and Panel Data" (2002, pp. 472-477).

children with at least one sibling, those with a sibling who has an accident are significantly less likely to be: Hispanic, foreign born or a recent immigrant, and to have a parent who is foreign born, a recent immigrant, not fluent in English, and/or working part time. Furthermore, they are more likely to be in a family that recently received welfare, and to have a parent enrolled in Medicaid. Notably, every one of these differences is associated with an increase in the probability of enrollment in public coverage. Thus, while the two groups differ significantly in important ways, the difference is likely to bias the results upward toward a more positive effect of visits on enrollment. This bias would tend to make it easier to reject the null hypothesis that visits have no effect, favoring the conventional wisdom that visits lead to enrollment.

Results from the IV probit models with sibling accidents as instruments for visits are presented in Table 6. Estimates for all the control variables are virtually identical to estimates from the regular probit models. Coefficients on the instrumented visit variables, however, are quite different and with only one exception are no longer significantly different from zero.

Table 7 summarizes the results from the different models of the effect of visits on enrollment in Medicaid and SCHIP. Results from the IV models all yield point estimates of visit effects that are generally larger than estimates from the non-IV models but with one exception they are no longer statistically different from zero. For children in the lowest income group, the effect of having a visit is much larger in the IV than in the probit model and is marginally significant, with a p-value of 0.084. The coefficient is 0.54, which translates to a mean derivative change in the probability of enrollment associated with the instrumented "any visit" variable of 0.137. So, controlling for other things, having a health care visit increases the probability of enrollment in Medicaid or SCHIP by about 14 percentage points for children in the lowest income group. While the point estimate for the effect of a hospital or emergency room visit is large for this group, it is also quite imprecise.

[NOTE: Corresponding results for effects on transitions to any coverage are consistent with the results reported for transitions to Medicaid and SCHIP.]

DISCUSSION

To come later.

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Exhibit 1
Factors Influencing Takeup of Public Health Insurance Coverage Among Low-Income Children
(Factors potentially associated with a health care visit are highlighted)

	BENEFITS			
COSTS	NATURE OF BENEFIT PACKAGE	ATTITUDES/BELIEFS ABOUT HEALTH CARE	RISK AVERSION	ALTERNATIVES
PROGRAM FACTORS				
Outreach programs and enrollment education/ assistance Premiums and cost sharing Burden of eligibility determination and enrollment process **Provider attitudes toward public program participants** **Provider action to assist with enrollment**	Medicaid and SCHIP program features (including whether program covers parents) Medicaid and SCHIP provider supply and location.	Outreach programs and enrollment education/ assistance programs		Supply and location of safety net providers
INDIVIDUAL/FAMILY FACTORS				
Family income and wealth Family size Eligibility category (medical need versus income; SCHIP versus Medicaid). Prior experience/ familiarity with enrollment process. Language Immigration status	**Awareness of eligibility.** **Perceptions about the availability and quality of Medicaid and SCHIP providers.**	**Health Status** Income/wealth Age Race Ethnicity Immigration status Past experience with health care services and with public programs	**Health status** Income/wealth Age Race Ethnicity Immigration status	Access to ESI (Parent employment status/prospects). Awareness of and experience with safety net providers.

TABLE 1
Sample Characteristics
Children under Age 19, 2001-2003

Characteristic	Percentage or Mean (SD)		
	ALL Children	Uninsured, Under 200%FPL	Uninsured, Under 125%FPL
Under age 6	27.9	22.3	19.8
Age 6 to 12	32.7	35.5	33.6
Age 12 to 19	36.5	38.8	43.2
Black	16.0	13.8	16.4
Hispanic	18.4	44.2	51.8
Family size	4.5 (1.5)	5.0 (1.5)	4.9 (1.8)
AFDC during panel	3.2	2.7	4.0
Mom only household	25.8	38.6	50.9
Dad only household	3.1	3.8	3.4
Mom and dad in household	69.7	56.1	43.9
Grandparent only household	1.4	1.5	1.8
Parent(s) foreign born	21.5	43.6	50.3
Parent(s) recent immigrants	2.0	9.0	12.0
Interview respondent not fluent in English	12.3	38.5	43.4
Parent(s) uninsured	22.9	84.8	86.7
At least one parent(s) with college degree	39.5	10.5	6.7
Neither parent has high school degree	13.5	35.0	40.0
2 or more children in family	78.3	80.8	82.4
Parent uninsured	22.9	84.8	86.7
Parent covered by Medicaid	13.1	5.8	7.4
Parent or child received welfare during panel	3.2	2.7	4.0
Parent(s) works full time	68.8	54.8	46.5
Parent(s) works part time	7.9	12.1	15.2
Parent(s) self employed	10.0	15.6	11.4
Parent(s) job is temporary or seasonal	23.2	26.5	27.8
No working parent in home	11.8	21.0	31.3
Parent Got Married	2.6	3.4	3.8
Parent Got Divorced	1.2	1.3	1.3
Parent Changed Job	3.0	3.4	3.3
Parent work hours up	2.3	3.0	2.8
Parent work hours down	1.9	2.7	3.2
Parent wage up	2.8	3.6	3.2
Parent wage down	2.9	3.9	4.2
Child-month observations	258,600	24,093	13,411

DATA SOURCE: Medical Expenditure Panel Survey (MEPS), Panels 6 and 7, covering calendar years 2001-2003.

TABLE 2
Probit Regression Results

	Probability of Gaining Medicaid/SCHIP Among Low-Income, Uninsured Children					
	Family income <200 FPL			Family income <125 FPL		
Characteristic	Coefficient		SE	Coefficient		SE
Any visit	0.22	***	(0.056)	0.26	***	(0.071)
[Visit to ER or hospital][7]	0.45	***	(0.107)	0.53	***	(0.126)
Age under 6	0.22	***	(0.075)	0.41	***	(0.090)
Age 6 to 12	0.06		(0.068)	0.17	*	(0.086)
Black, not Hispanic	0.16		(0.101)	0.08		(0.128)
Hispanic	0.15		(0.094)	0.003		(0.12)
Family size	0.03		(0.021)	0.06	**	(0.029)
Family received welfare during panel	0.43	**	(0.170)	0.31	**	(0.160)
Parent(s) covered by Medicaid	0.78	***	(0.121)	0.73	***	(0.162)
Parent(s) uninsured	0.24	**	(0.100)	0.21		(0.136)
Sibling uninsured	-0.43	***	(0.059)	-0.39	***	(0.076)
Child is foreign born	-0.59	***	(0.117)	-0.56	***	(0.141)
Child is recent immigrant (in US <5 years)	-0.17		(0.189)	-0.08		(0.204)
Parent(s) recent immigrants (in US<5 years)	-0.29	**	(0.141)	-0.37	**	(0.153)
Interview respondent not fluent in English	-0.07		(0.101)	-0.14		(0.126)
Parent(s) less than high school education	-0.01		(0.082)	0.04		(0.103)
Parent(s) college education or more	-0.20		(0.122)	-0.05		(0.180)
Parent(s) work part time	-0.03		(0.112)	-0.10		(0.146)
Parent(s) self employed	-0.27	*	(0.143)	-0.14		(0.151)
Parent(s) do not work	0.09		(0.077)	-0.06		(0.097)
Parent(s) work temporary/seasonal	0.20	**	(0.080)	0.13		(0.097)
Parent(s) changed job	0.13		(0.156)	0.18		(0.198)
Parent(s) wage went down	0.03		(0.165)	-0.02		(0.223)
Parent(s) got divorced	-0.17		(0.247)	-0.62	*	(0.318)
Parent(s) got married	-0.008		(0.182)	-0.23		(0.238)
Number of observations	22258			12461		

*Significant at the 0.10 level; **Significant at the 0.05 level; ***Significant at the 0.01 level
Both models also include monthly fixed effects, which were significant at the 0.05 level or less in 12 of 34 months for the <200FPL population and in 28 of 34 months for the <125 population.

[7] Note that this coefficient was estimated in a separate model with all the same variables, in place of the any visit variable. Values of the other coefficients in this alternate model were very similar to those in any visit model.

TABLE 3
Results of OLS Regressions of Visit Variables on Sibling Accident Instrument[8]

	Under 200 FPL		Under 125 FPL	
	Coefficient	SE	Coefficient	SE
Any visit for child or sibling on sibling accident variable	0.67***	(0.047)	0.62***	(0.078)
Visit to ER or hospital, child or sibling, on sibling accident variable	0.62***	(0.057)	0.50***	(0.075)

***Significant at the 0.001 level.

TABLE 4
Results of OLS Regressions of Transition Variable on Sibling Accident Instrument

	Under 200% FPL			Under 125% FPL		
	Coefficient	SE	Conf interval	Coefficient	SE	Conf interval
Transition to Medicaid or SCHIP on Sibling Accident	0.03	0.42	-0.482 – 0.115	.07	0.063	-0.053 – 0.195

[8] The regressions also include all of the other control variables from the enrollment model.

TABLE 5
Comparison of Children with Sibling(s) Who Do and Do Not Have an Accident

Characteristic	ALL Children	Percentage (mean for family size) Uninsured, Low Income, Sibling Does Not Have Accident	Uninsured, Low Income, Sibling Has Accident	
Under Age 6	27.9%	18.5%	18.2%	
Age 6 to 12	32.7	38.0	38.2	
Age 12 to 19	36.5	43.5	43.7	
Black	16.0	11.5	11.0	
Hispanic	18.4	67.7	56.2	***
Family size (mean)	4.5	5.5	5.7	
Received welfare during panel	3.2	2.8	7.4	***
Mom-only household	25.8	31.8	33.3	
Dad-only household	3.1	1.5	1.1	
Mom and dad in household	69.7	65.8	65.2	
Grandparent-only household	1.4	0.9	0.4	
Child is foreign born	4.2	29.7	21.4	***
Child is a recent immigrant	1.4	12.7	7.0	***
Parent(s) foreign born	21.5	65.4	47.9	***
Parent(s) recent immigrants	2.0	12.7	8.3	***
Interview respondent not fluent in English	12.3	59.2	41.4	***
Neither parent has high school degree	13.5	47.3	36.4	***
At least one parent(s) with college degree	39.5	7.2	5.7	
Parent uninsured	22.9	88.8	87.6	*
Parent covered by Medicaid	13.1	5.2	8.2	***
Parent(s) works full time	68.8	62.1	63.5	
Parent(s) works part time	7.9	9.4	7.8	***
Parent(s) self employed	10.0	11.5	10.8	
Parent(s) job is temporary or seasonal	23.2	29.2	29.2	
No working parent in home	11.8	19.3	19.1	
Parent got married	2.6	3.6	3.6	
Parent got divorced	1.2	1.3	0.7	***
Parent changed job	3.0	3.1	4.0	***
Parent work hours up	2.3	3.8	2.4	***
Parent work hours down	1.9	2.6	1.9	**
Parent wage up	2.8	4.1	3.6	
Parent wage down	2.9	3.4	2.8	*
Observations	258,600	15,964	4,183	

DATA SOURCE: Medical Expenditure Panel Survey (MEPS), Panels 6 and 7, covering calendar years 2001-2003.

Difference between children with and without a sibling who has an accident is: *Significant at the 0.10 level; **Significant at the 0.05 level; ***Significant at the 0.01 level

TABLE 6
IVProbit Regression Results

	Probability of Gaining Medicaid/SCHIP					
	Family income <200 FPL			Family income <125 FPL		
Characteristic	Coefficient		SE	Coefficient		SE
Any visit	0.27		(0.284)	0.54	*	(0.314)
[ER or hospital visit][9]	0.27		(0.315)	0.65		(0.441)
Age under 6	0.33	***	(0.072)	0.50	***	(0.086)
Age 6 to 12	0.13	**	(0.065)	0.22	***	(0.082)
Black, not Hispanic	0.18	*	(0.102)	0.10		(0.128)
Hispanic	0.11		(0.089)	0.003		(0.116)
Family size	0.02		(0.021)	0.04		(0.028)
Family received welfare during panel	0.43	**	(0.170)	0.31	**	(0.160)
Parent(s) covered by Medicaid	0.80	***	(0.122)	0.71	***	(0.166)
Parent(s) uninsured	0.24	**	(0.099)	0.22		(0.134)
Sibling uninsured	-0.41	***	(0.057)	-0.36	***	(0.074)
Parent(s) recent immigrants (in US<5 years)	-0.63	***	(0.117)	-0.66	***	(0.122)
Interview respondent not fluent in English	-0.17	*	(0.096)	-0.24	**	(0.119)
Parent(s) less than high school education	0.01		(0.080)	0.02		(0.101)
Parent(s) college education or more	-0.20		(0.122)	-0.05		(0.180)
Parent(s) work part time	-0.06		(0.110)	-0.17		(0.141)
Parent(s) self employed	-0.26	*	(0.142)	-0.14		(0.162)
Parent(s) do not work	0.09		(0.076)	-0.08		(0.094)
Parent(s) work temporary/seasonal	0.19	**	(0.079)	0.14		(0.097)
Parent(s) changed job	0.10		(0.155)	0.11		(0.193)
Parent(s) wage went down	0.08		(0.159)	0.03		(0.212)
Parent(s) got divorced	-0.22		(0.262)	-0.65	*	(0.369)
Parent(s) got married	0.01		(0.187)	-0.18		(0.250)
Number of observations	22258			12461		

*Significant at the 0.10 level; **Significant at the 0.05 level; ***Significant at the 0.01 level

Wald tests of exogeneity for the IV probit regressions each yielded very small chi-square values, supporting the null hypothesis that residuals from the first stage regression are not correlated with the residuals from the IV equation.

[9] Note that this coefficient was estimated in a separate model with all the same variables, in place of the any visit variable. Values of the other coefficients in this alternate model were very similar to those in any visit model.

TABLE 7
Comparison of IVprobit and Probit Results
Effect of Family Visits on Gaining Medicaid or SCHIP Coverage
Uninsured, Low-income Children

	Effect on Child Gaining Medicaid or SCHIP			
	Under 200 FPL		Under 125 FPL	
Variable[10]	Probit	IVprobit	Probit	IVprobit
Any visit, for child or sibling	0.22*** (0.056)	0.29 (0.281)	0.26*** (0.071)	0.54* (0.314)
ED or hospital visit, child or sibling	0.45*** (0.107)	0.270 (0.315)	0.53*** (0.126)	0.65 (0.442)

***Significant at the 0.001 level.

[10]The instrumental variable in the IV regressions is whether a child's sibling had an accident during the 3-month period prior to the transition month.

Figure 1
Transitions Among Uninsured Children,
Under 200% FPL

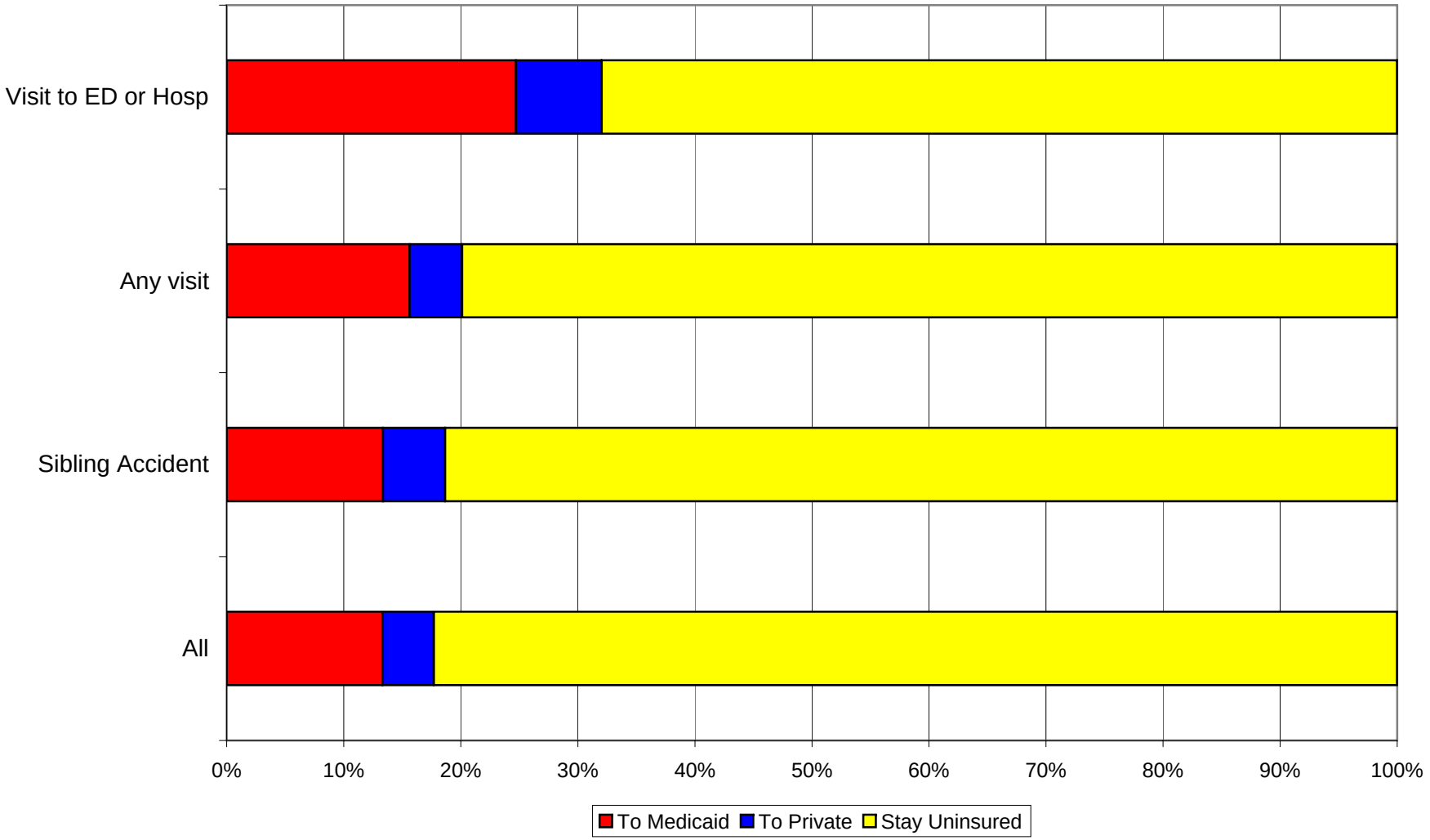


Figure 2
Transitions Among Uninsured Children
Under 125% FPL

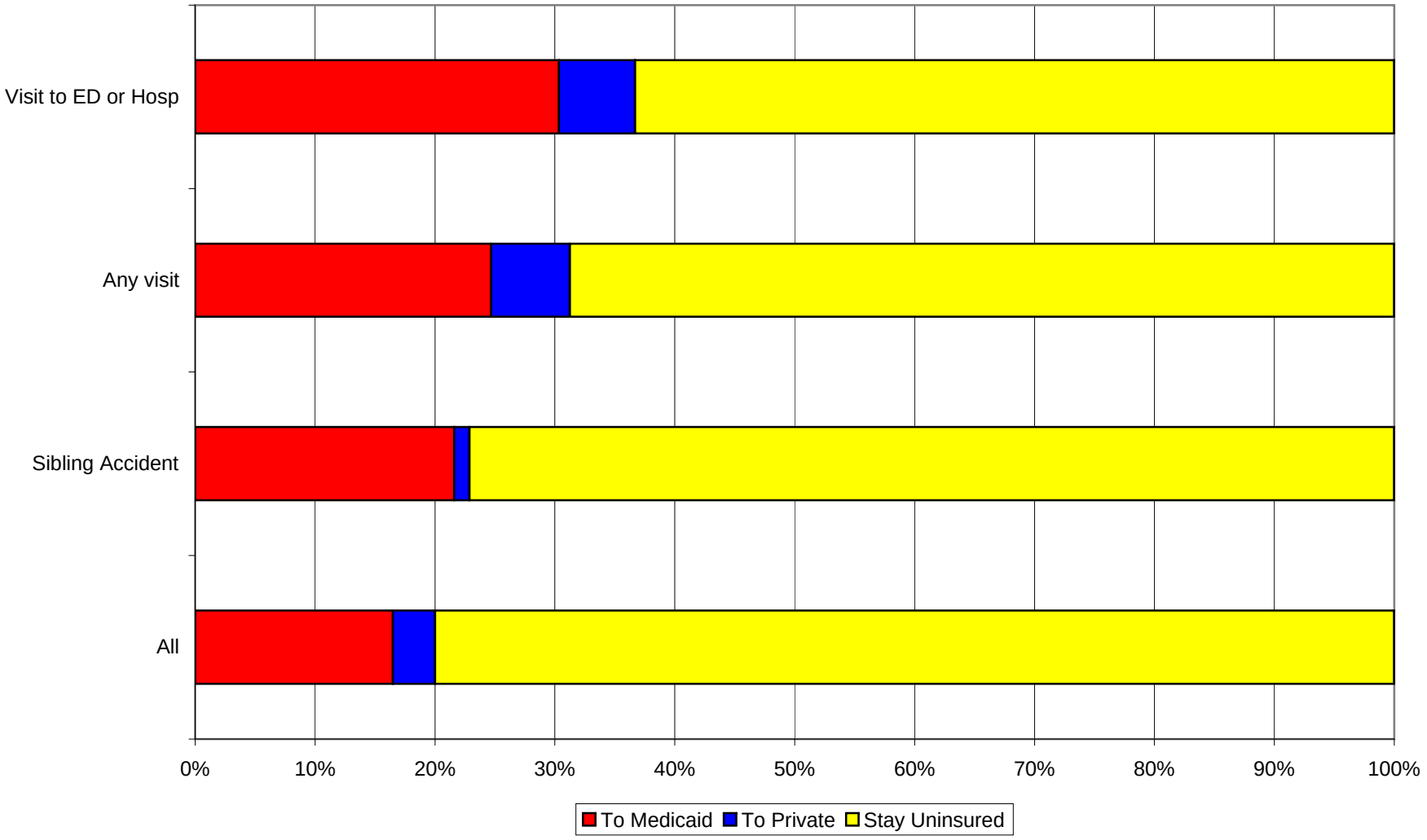
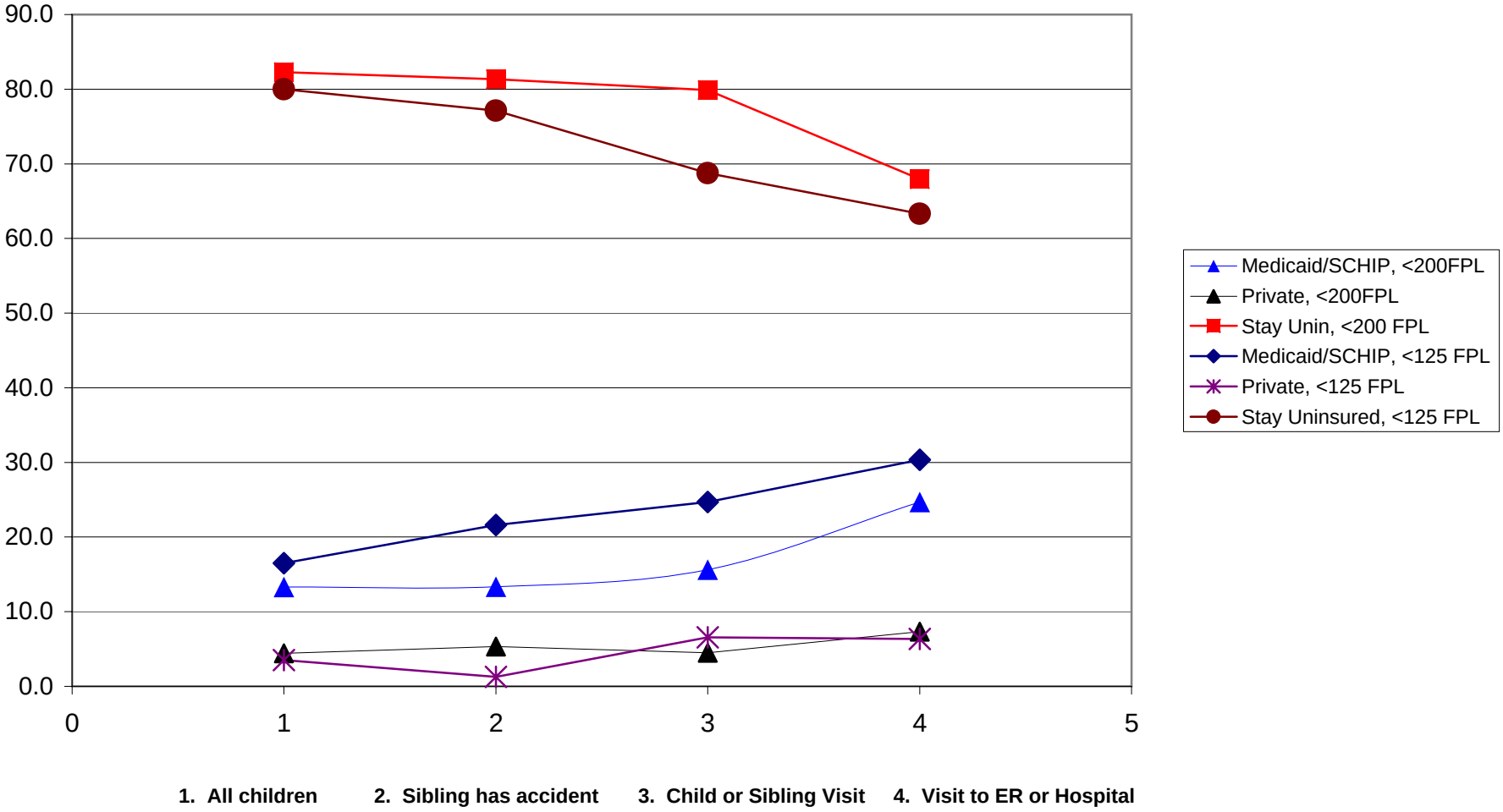


Figure 3
Transition Rates Among Uninsured Low Income Children



1. All children **2. Sibling has accident** **3. Child or Sibling Visit** **4. Visit to ER or Hospital**