Quality of Care and Disenrollment in the New York State Children's Health Insurance Program (SCHIP)

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Acknowledgements

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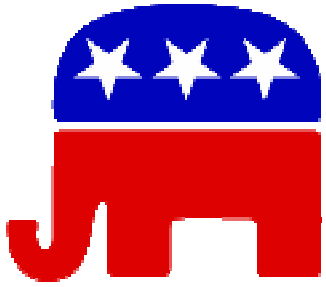
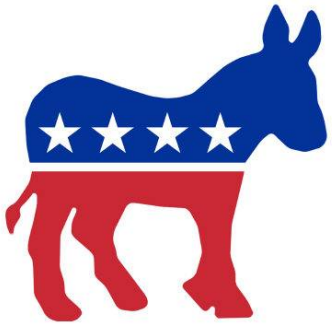
A Battle Over SCHIP Reauthorization

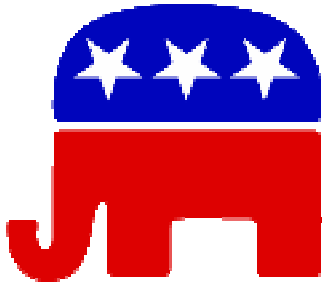


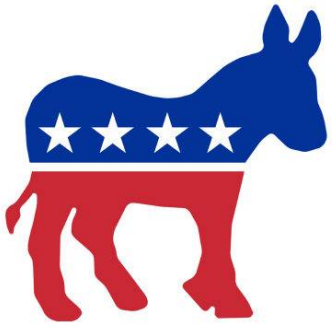
- Oct 3rd: “Bush Vetoes Child Health Bill”
- Only seeking $30 billion for the program from 2008 to 2012



- “Democrats Build Plan to Override Health Bill Veto”
- $60 billion for the program over the next five years

A Battle Over SCHIP Reauthorization





- Oct 3rd: “Bush Vetoes Child Health Bill”
- Only seeking $30 billion for the program from 2008 to 2012
- August: the Bush administration required that states should enroll at least 95% of the children with family incomes below 200% FPL before they can extend the SCHIP coverage above 250% FPL

- “Democrats Build Plan to Override Health Bill Veto”
- $60 billion for the program over the next five years

Objective

Does better health plan performance reduce disenrollment in New York SCHIP?

Predictors of SCHIP Disenrollment

- Complex program structure: the eligibility recertification process, the practice of case workers, and administrative errors (e.g., Perry et al., 2001; Dick et al., 2002; Allison, 2003)
- Cost sharing: paying premium, premium increase
  (e.g., Shenkman et al., 2002a; Artiga and O'Malley, 2005)
- Children without chronic diseases, without siblings, or with more educated parents
  (e.g., Shenkman et al., 2002a; Phillips et al., 2004; Miller et al., 2004; Sommers, 2005a)
- Lack of awareness of income eligibility and recertification
  (e.g., Perry et al., 2001; Pernice et al., 2002; Shenkman et al., 2002b)

A significant portion of disenrolled children became uninsured though they were still eligible for the program

- Administrative system
- Most programs rely on managed care

Kempe et. Al, 2004; Sommers, 2005

Significance

- Few studies have been done to systematically investigate the effect of SCHIP managed care quality on disenrollment
- Will inform SCHIP policy makers and help reduce the number of uninsured children

Two Types of Disenrollment

- Involuntary Disenrollment
  - Eligible for Medicaid
  - Over the age limit (19 years old)
  - Move out of a county
- Voluntary Disenrollment
  - Other SCHIP plans
  - Private insurance
  - No insurance

Voluntary Disenrollment as Individual Choices

- Model full individual choice sets
- Lack of information
  - Private insurance they enrolled after disenrollment
  - Plan performance/characteristics of private insurance
- Geographic areas as fixed effects
  - Same alternative health plans for individuals in an area
  - Statistical areas based on US Census 2000

    New York City; Long Island; Other Suburbs of New York City; North East Area; North Central Area; South Central Area; West Central Area; West or South West Area

Hypothesis 1

Children in health plans with higher performances are less likely to disenroll

Hypothesis 2 – 5

The effect of health plan performance on disenrollment is larger in children with:

Hypothesis 2: special health care needs

Hypothesis 3: prior insurance

Hypothesis 4: higher family income

Hypothesis 5: better educated parents

Data Sources

- Evaluation of NY SCHIP in 2001*
  - Statewide stratified random sample of 2,644 new enrollees
  - First phone interview during Month 4 – 6
  - Second interview 12 months after the first interview
- 2002 New York State Managed Care Plan Performance Report
- Enrollment status
  - New York SCHIP Universal Billing Files**
  - Disenrollment defined as being disenrolled for at least two consecutive months (30-day grace period, no waiting period)

*PI: Peter Szilagyi, supported by AHRQ (HS10450) & NYSDOH (T016804)
**PI: Andrew Dick, supported by David and Lucile Packard Foundation (2002-24146)

Quality Measures

- 2001 New York State Managed Care Plan Performance Report
- Consumer Assessment of Health Plans Survey (CAHPS 2.0H)
  - Scale: 0-100, in percentage
  - Provider communication
  - Receiving services quickly
  - Problems with getting care needed
  - Problems with services
  - Called or wrote health plan with complaints
  - Overall rating of personal doctor or nurse
  - Overall rating of health plan

Quality Measures

- Health Plan Employer Data and Information Set (HEDIS 3.0)
  - Scale: 0-100, in percentage
  - Well-child and preventive care visits
  - Use of appropriate medications for children with asthma
  - Childhood immunization

- Aggregating Method
  - Weighted average across measures for CAHPS and HEDIS separately, using the score system of National Committee of Quality Assurance for MCO accreditation

Statistical Model

- Time-to-event data
- Discrete - by individual months
- Logistic hazard model

$$Log\ (\frac{h_{it}}{1-h_{it}}) = \alpha_{it} + T(t) + X_{ih} + Area$$

h_{it} Disenrollment hazard in month t
a_{it} Intercept of the equation
$T(t)$ Month dummy variables, representing the baseline hazard
X_{ih} Individual and plan characteristics and their interaction terms
Area Geographic areas representing choice sets

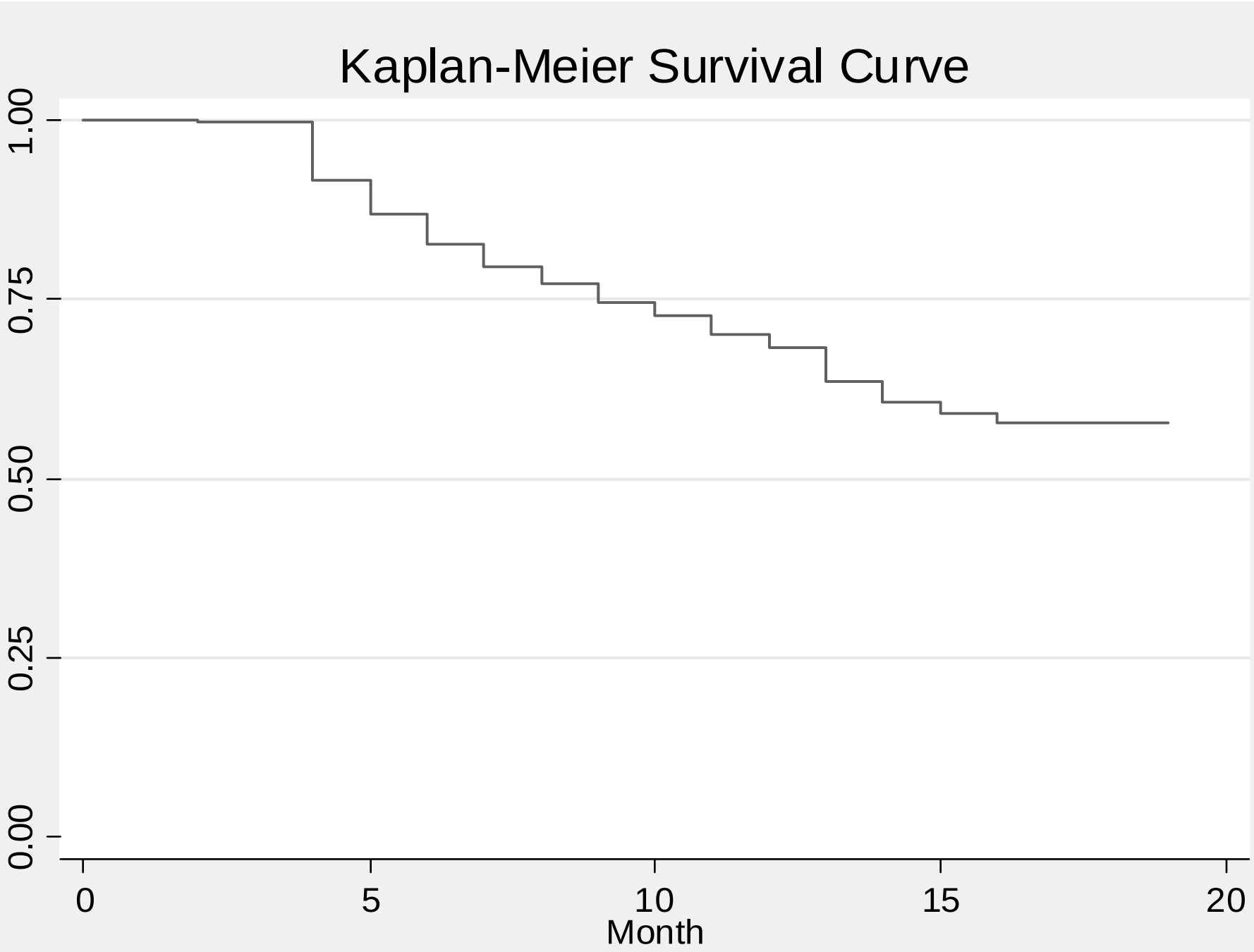
Individual/Family Characteristics (N=1,995)

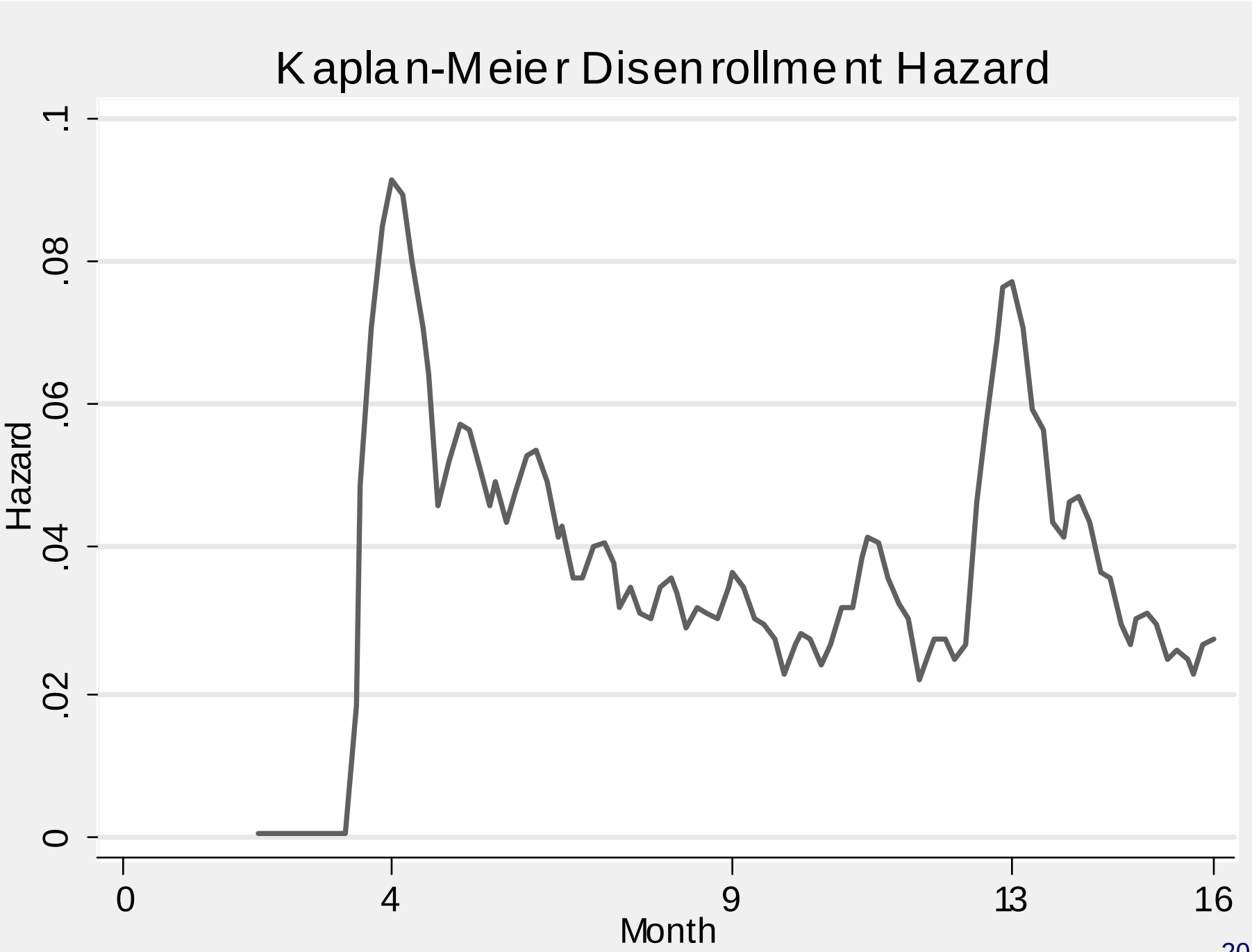
Characteristics	Value	N	%
Child Age	0 to 5	766	38.4
	6 to 18	1,228	61.6
Child Gender	Male	982	49.2
Child Race	White (non-Hispanic)	516	25.8
	Black (non-Hispanic)	599	30.0
	Hispanic	881	44.1
Parent Highest Education	High school or less	1,249	62.6
	Some college or higher	746	37.4
Family Income	Income < 160% FPL	1580	79.2
	Income 160-250% FPL	321	16.1
	Income >250% FPL	94	4.7
Had special health care needs		336	16.9
Had insurance before SCHIP		785	39.4

Plan Characteristics (N=29)

Characteristics	Mean	SD	Min	Max
Average CAHPS score (0-100, in percentage)	75.2	4.6	62.9	84.3
Average HEDIS score (0-100, in percentage)	69.5	6.9	51.3	81.0
# of SCHIP & Medicaid enrollees (10,000s)	3.98	3.49	0.48	12.50
Outreach FTEs/1,000 eligible population	0.24	0.24	0.01	0.99
# of SCHIP plans per county	3.94	2.79	1	13

Non-profit 75.9%
Having a commercial business line 44.8%





Hypothesis 1

Variables	Marginal Effect	Bootstrap SE	Z Value	P Value
Average HEDIS Score	-0.038	0.058	-0.653	0.257
Average CAHPS Score	0.119	0.107	1.113	0.867

Evaluated at the 76th percentile, one-sided test

Hypotheses 2-5

Variables	Marginal Effect	Bootstrap SE	Z Value	P Value
Hypothesis 2				
Had Special Health Care Needs × HEDIS	**-0.009**	**0.028**	**-0.328**	**0.372**
Had Special Healthcare Needs × CAHPS	**0.091**	**0.078**	**1.163**	**0.877**
Hypothesis 3				
Education>=College × HEDIS	**-0.003**	**0.024**	**-0.107**	**0.458**
Education>=College × CAHPS	**-0.040**	**0.056**	**-0.712**	**0.238**
Hypothesis 4				
Income>160% FPL × HEDIS	**-0.003**	**0.029**	**-0.089**	**0.465**
Income>160% FPL × CAHPS	**-0.077**	**0.074**	**-1.034**	**0.151**
Hypothesis 5				
Had Insurance Before SCHIP × HEDIS	**0.007**	**0.021**	**0.331**	**0.630**
Had Insurance Before SCHIP ×CAHPS	**-0.034**	**0.046**	**-0.749**	**0.227**

Evaluated at the 76th percentile, one-sided test

Effects of Other Plan Characteristics on Disenrollment

Variables	Marginal Effect	Bootstrap SE	Z Value	P Value
Non-profit Plan	0.468	0.519	0.902	0.367
Outreach FTEs/100,000 eligible children	-0.252	1.301	-0.194	0.423
Having commercial business lines	-0.100	0.742	-0.134	0.893
# of SCHIP & Medicaid enrollees (10,000s)	-0.268	0.166	-1.612	0.107
# of SCHIP plans per county	-0.605	1.207	-0.501	0.616

Effects of Individual/Family Characteristics on Disenrollment

Variables	Marginal Effect	Bootstrap SE	Z Value	P Value
Child Age (0 to 2 years)*				
3 to 5 years	-0.517	0.406	-1.272	0.203
6 to 11 years	-1.276	0.654	-1.953	0.051
12 to 18 years	-2.025	0.388	-5.222	0.000
Child Race (White, non-Hispanic)*				
Black (non-Hispanic)	0.842	0.809	1.041	0.298
Hispanic	0.352	0.759	0.464	0.643
Family Income (<160% FPL)*				
Income 160-250% FPL	-1.360	0.713	-1.908	0.056
Income > 250% FPL	-0.694	0.842	-0.824	0.410

* Reference group

Effects of Individual/Family Characteristics on Disenrollment

Variables	Marginal Effect	Bootstrap SE	Z Value	P Value
Parent Highest Education (<High school)*				
High school or GED	-0.579	0.665	-0.871	0.384
Technical/vocational	1.391	0.995	1.398	0.162
Some College	-1.011	0.580	-1.743	0.081
College or higher	-1.072	0.628	-1.708	0.088
Had insurance year before SCHIP	0.626	0.505	1.241	0.215
Had special health care needs	1.601	0.841	1.904	0.057
Lived in rural area	-1.954	0.467	-4.180	0.000

* Reference group

Effect of Recertification on Disenrollment

Variables	Marginal Effect	Bootstrap SE	Z Value	P Value
Time since enrollment (other months)*				
Month 11-15 (Recertification period)	3.250	0.915	3.554	0.000
× Black (non-Hispanic)	-0.414	1.979	-0.209	0.834
× Hispanic	-1.028	1.984	-0.518	0.604
× Income>160% FPL	2.771	2.140	1.295	0.195
× Having commercial business lines	-0.099	2.255	-0.044	0.965
× SCHIP & Medicaid enrollees in 10,000	-1.673	0.657	-2.547	0.011

* Reference group

Sensitivity Analyses

- Excluding the first four months of data
- Including the second disenrollment
- Including the individuals only completing the T1 interview

Main conclusions hold

Limitations

- Sample attrition (13%)
- Potential plan performance measurement error
- Rely on the survey to identify those switching to Medicaid

Conclusions and Policy Implications

- No significant effects of plan performance (as measured by CAHPS and HEDIS) on disenrollment are detected

  Statistical Power

- Major drivers of disenrollment
  - Annual recertification
  - Younger children
  - Children with special health care needs
  - Children with less educated parents
  - Children with lower family incomes
  - Smaller plans

- It is NOT feasible to enroll 95% of eligible children

Thank you!

New York SCHIP

- Approved in April 1998 (children <19 years)
- Based on managed care plans
- Benefit package (2006)
  - Outpatient services, hospitalizations, pharmacy, emergency, dental care, vision care, speech and hearing therapies, durable medical equipment, mental health, and hospice
- Cost sharing (2006)
  - 133-159% the Federal Poverty Level (FPL) $0/child/month
  - 160-222% FPL $9/child/month ($27 family maximum)
  - 223-250% FPL $15/child/month ($45 family maximum)
  - >250% FPL Full premium (about $100-150/month)

Does Quality Matter?

- Commercial/Medicare managed care
  - Satisfaction or overall rating was negatively correlated with disenrollment or switching behavior
    (Travis et al.,1989; Harrington et al. 1993; Newcomer et al., 1996; Ho et al., 1998; Murray et al., 2000; Lied et al., 2003)

- SCHIP managed care
  - Most parents were satisfied with the overall SCHIP program based on focus group or surveys
    (Perry and Kannel, 2001; Pernice et al., 2002; Shenkman et al., 2002; Institute of Child Health Policy, 2004)

Statistical Model

- Generalized Estimating Equations (GEE)
- Working correlation matrix – AR 1
- Sampling weights are used
- Marginal effects and bootstrapped standard errors

Hardin and Hilbe. Generalized Estimating Equations. 2003. McCarthy and Snowden, "the bootstrap and finite population sampling". Vital and Health Statistics 2–95. 1985. Sitter, "A Resampling Procedure for Complex Survey Data" JASA. 1992.

Statistical Model

- Dependent Variable
  - Dichotomous: 1 disenrolled, 0 stayed enrolled
- Independent Variables
  - Individual/family characteristics: child age, child race, parent highest education, family income, presence of special health care needs, prior health insurance status before SCHIP, and living in rural area
  - Plan performance and other characteristics: average CAHPS and HEDIS scores, profit status, plan outreach/marketing activity, having a commercial business line, number of SCHIP & Medicaid enrollees
  - Other independent variables: time dummy variables, the number of SCHIP plans in a county, geographic areas

Time Effects

Variables	Marginal Effect	Bootstrap SE	Z Value	P Value
Time since enrollment (other months)*				
Month 3-6	**2.843**	**0.766**	**3.710**	**0.000**
× Black (non-Hispanic)	**4.437**	**2.228**	**1.991**	**0.046**
× Hispanic	**1.963**	**2.029**	**0.967**	**0.333**
× Income>160% FPL	**-2.811**	**1.387**	**-2.027**	**0.043**
× Having commercial business lines	**-2.641**	**2.135**	**-1.237**	**0.216**
× SCHIP & Medicaid enrollees in 10,000	**-0.151**	**0.273**	**-0.553**	**0.580**

* Reference group

Policy Implications

- Plan performance
- Simplify the recertification process
- Help smaller plans to improve the recertification
- Concentrate retention efforts on:
  - Younger children
  - Children with special health care needs
  - Children with less-educated parents
  - Children with lower family incomes

- It is NOT feasible to enroll 95% of eligible children