

# Context or Composition?

## What Explains Variation in SCHIP disenrollment?

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### WHAT WE LEARNED

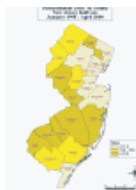
The State Children's Health Insurance Program (SCHIP) is intended to provide health insurance to children in low income families. Our multilevel analysis of data for New Jersey's SCHIP found that families enrolled in plans involving cost-sharing, blacks, and those with only one enrolled child had higher disenrollment rates, although the excess disenrollment for blacks was lower in counties with a high share of black physicians. These characteristics account for part of the inter-county variation in disenrollment rates; remaining inter-county variation is largely explained by physician density or population density.

#### BACKGROUND

- SCHIP = State Children's Health Insurance Program
- Purpose: Expand health insurance to uninsured low-income children in the U.S.
  - ~ 11 million uninsured in late 1990s.
- Federally funded insurance initiative under the Balanced Budget Act of 1997.
  - States have discretion about plan design:
    - Whether to extend benefits above 100% of Federal Poverty Level (FPL).
    - Costsharing for moderate income families.
- New Jersey's SCHIP program = NJ KidCare; became NJ FamilyCare in 2000.
- Uninsured children are less likely to receive comprehensive, preventive medical care, so it is important to identify factors to reduce disenrollment from SCHIP.

#### OBJECTIVES

- To investigate the relative contributions of family and county characteristics to observed variation in disenrollment from NJ KidCare.
  - Disentangle two possible reasons for geographic variation in health outcomes (Duncan et al., 1998)
    - Contextual effects.
      - e.g. physician density can affect access to care for all families in the geographic area.
    - Compositional effects.
      - e.g., the types of people who are more likely to disenroll might be clustered in certain areas.



#### DATA AND METHODS

- Data are from all families enrolled in NJ KidCare from 1998-2000. We estimate a multilevel discrete-time hazards model (AKA hierarchical linear model; HLM), with families clustered in counties.
  - Level 1 = family (N = 24,628).
  - Data from NJ KidCare administrative records
  - Level 2 = county (N=21).
  - Data from Census, NJ Division of Insurance, Area Resource File, and NJ FamilyCare provider roster.
- Chances of disenrollment from SCHIP vary by amount of time enrolled, so we used hazards models (also known as event history analysis or survival analysis) to correct for those differences when estimating disenrollment patterns for SCHIP plans for different income levels.

Terms of NJ KidCare plans					
Plan	Income eligibility	Effective date	Monthly premium	Co-payments	
A <sup>1</sup>	Up to 185% of FPL for infants; 100% to 130% of FPL for ages 1-17	2/1/1998	None	None	None
B	133% to 150% of FPL for ages 1-17	3/1/1998	None	None	
C	185% to 200% of FPL for infants; 150% to 200% of FPL for ages 1-17	3/1/1998	\$15/family	For some services	
D	200% to 350% of FPL for ages 0-17	7/1/1999	Sliding scale: \$30 to \$100/family	For some services	

<sup>1</sup> Plan A (Medicaid expansion) data not available.  
<sup>2</sup> FPL = Federal poverty level. FPL varies by family size and age composition.

#### VARIABLES

Distribution of enrolled families and disenrollment rates by demographic characteristics

	# families	%	Monthly disenrollment rate
All children	24,628	100%	1.9%
Race			
Non-Hispanic white	9,455	38%	1.7%
Non-Hispanic black	4,707	19%	2.6%
Hispanic	6,921	28%	1.7%
Other	2,344	10%	1.7%
Language			
English	13,505	47%	2.0%
Spanish, some Engl.	4,855	20%	1.7%
Spanish, no Engl.	550	2%	1.7%
Other language	1,797	7%	1.2%
Age group			
<1 year	438	2%	1.1%
1-5 years	11,248	46%	2.0%
6-12 years	13,554	55%	1.7%
13-17 years	7,481	30%	1.5%
# children on account			
One	12,448	51%	2.2%
Two	8,683	35%	1.6%
Three	2,815	11%	1.7%
Four or more	731	3%	1.5%
Gender			
Male	16,095	65%	1.8%
Female	15,548	63%	1.8%

- #### County-level variables
- Programmatic:
    - KidCare physician density.
    - Enrolled kids per physician.
    - Program uptake.
  - Unemployment and occupational comp.
    - Unemployment rate.
    - % small firms.
    - Service and retail.
  - Demographic:
    - Population density.
    - Racial composition.
    - Residential segregation.
  - Socioeconomic:
    - Poverty rate.
    - Income distribution.
  - Health care
    - % of physicians who are black
    - % of physicians who are Hispanic

#### FAMILY-LEVEL RESULTS

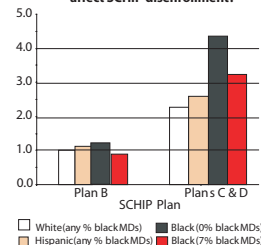
- Number of children enrolled
  - Families with only one child enrolled in the program were 1.37 times as likely as larger families to disenroll.
- Age composition of enrolled children
  - Families with infants are only about 60% as likely to disenroll.
  - Risk of disenrollment increases by 18% for each child aged 1-4 years.
- Number of children above age 5 doesn't affect disenrollment.
- Language
  - Those who speak Spanish with some English are about 90% as likely to disenroll as those who speak only English.
- There is no difference between people who speak only Spanish and those who speak only English.

#### STUDY STRENGTHS AND LIMITATIONS

- #### Study strength
- Prospective data - more accurate date recall than retrospective survey data.
  - Large # of cases
    - Support multivariate analysis.
    - Previous studies don't provide disenrollment estimates for subgroups.
    - Support multilevel modeling.
    - Wide range of socioeconomic and demographic county attributes
- #### Limitations
- Drawbacks of administrative data
    - Reasons for disenrollment crudely measured; some dropouts obtain other insurance.
  - Some county characteristics not measured well
    - Physician racial composition also outdated (1990).
    - Income inequality, residential segregation are outdated (1990) and measured by metropolitan area (MSA) not county.

#### RESULTS

How do family race, SCHIP plan, and county physician racial composition affect SCHIP disenrollment?



- Regardless of race, families in Plan B had lower disenrollment than those in Plans C or D.
- For blacks, excess risk of disenrollment much lower in counties with higher % black MDs.
- For other racial/ethnic groups, no difference in disenrollment patterns according to physician racial composition (%black, % Hispanic, or % white MDs).

#### County characteristics and disenrollment

- Provider density
  - An increase of one NJ KidCare provider per square mile is associated with a 1.9% decline in the chances of disenrollment.
- Population density.
  - Disenrollment is lower in counties with higher population density.
  - However, physician density and population density are highly correlated ( $r=0.96$ ;  $p<.01$ ), so they can't be included in the same model.
- Birthplace, language, and ethnicity
  - Foreign-born, % Spanish-speaking, % Hispanic, and % of county physicians who are Hispanic are statistically significant when they are the only county characteristic in the model.
  - However, they are highly correlated with population or physician density and are not statistically significant when either density measure is included.

#### Summary of findings re: context and composition

- Once provider density is controlled, inter-county variation in SCHIP disenrollment is borderline significant ( $p=.056$ ), thus specific county traits appear to explain much of that variation.
- Family traits remain statistically significant even when county characteristics are taken into account, therefore little of the observed relationship between family-level traits and SCHIP disenrollment is due to county clustering.

#### STUDY IMPLICATIONS

- States' efforts to improve retention might consider:
- Targeting:
    - Black families.
    - High disenrollment counties.
  - Evaluate role of racial/cultural match between clients and health care providers.
  - Cost-sharing appears to discourage retention.
    - Consider emergency premium waivers.
  - But families in cost-sharing plans
    - Have higher incomes
    - Are more likely to have access to other types of health insurance.