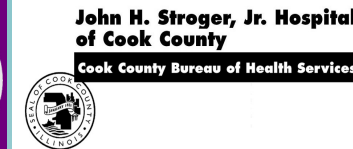


# The effect of insurance coverage on asthma outcomes in a cohort of urban adults

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## Abstract

**Rationale:** The quality of medical care received is affected by insurance, and thus insurance is likely to have an impact on asthma status. We explore associations between types of medical insurance and asthma morbidity in a community-derived cohort of adult asthmatics.

**Methods:** Adults aged 18-40 with persistent asthma were enrolled at community sites following an elementary school-based screening of families for asthma using population-proportionate sampling. Eligibility included: 1) age 18-40 yrs; 2) diagnosis of asthma and using asthma medications at least 8 weeks during preceding year; and 3) fluent in English. Predictor variables including education, household income, insurance type, Center for Epidemiologic Studies Depression scale (CES-D), asthma symptoms (days and nights with symptoms in preceding 14 days), asthma quality of life (QOL, Mini Asthma Quality of Life Questionnaire) and health care utilization related to asthma in the preceding year were obtained from a baseline interview. Linear and logistic regression analyses were used as appropriate.

**Results:** Our sample of 353 adults was predominantly women (78%) with a mean age of 30.9 yrs (SD 6.1). Self-reported race-ethnicity was African-American (52%), Hispanic (28%), Caucasian and Asian (15%). Insurance types were private (48%), Medicaid (40%) and none/self-pay (12%). Because none/self-pay appeared similar in analysis to Medicaid, those groups were combined. Controlling for other covariates, Medicaid/no insurance status was associated with lower QOL (p=.006); but not symptoms (p=.195) or urgent care (p=0.14).

**Conclusions:** In this cohort of urban adults with asthma, insurance type was associated with asthma-specific quality of life. Complicated relationships were seen between covariates and asthma status.

**NB: The data presented on this poster are from analysis of a complete dataset**

## Background and Objectives

Insurance is a known predictor of health disparities and adverse health outcomes. In a diverse urban adult asthma population we wished to determine :  
 -the sociodemographic predictors of private insurance;  
 -if private insurance is associated with asthma quality of life, symptoms and health care utilization;  
 -potential explanations for effects of insurance on asthma status.

## Methods

### Setting and Design:

Cross-sectional survey, face-to-face interviews

Population proportionate sampling of Chicago elementary schools to identify children and adult household members with asthma

### Eligibility:

Age: 18-40 years, English language, agree to periodic interviews over 2 years

Physician-diagnosed asthma requiring medication use >8 weeks in the past 12 months

## Methods-continued

### Predictors:

Demographics-age, sex, self-described ethnicity

Education/literacy: ordinal variable from 1 (less than high school education and low score on Rapid Estimate of Adult Literacy in Medicine {REALM}) to 4 (college graduate with highest REALM score)

Household size-number of people living in house past 6 months

Work for pay-dichotomous yes/no

Income: pre-tax household income: <\$15K, \$15-30K, \$30-50K, >\$50K

Insurance status-private, Medicaid, self-pay

Psychosocial-

- depressive symptoms (score on 60-point Centers for Epidemiologic Studies-Depression scale {CES-D})
- racial discrimination-sum of affirmations on 6-item modified Experience of Discrimination Questionnaire (EDQ, Krieger N)
- social support (average score on 8-item asthma-specific support scale created by our team by Delphi process, ascertaining how often a person has support needed)
- negative life events in past 6 months (from 63-item CRISIS, Shalowitz M)

### Outcomes:

- Asthma-related quality of life: Juniper's MiniAQLQ 15 item scale, mean score 1-7
- Asthma symptoms: sum of # days and nights with symptoms, past 14 days (range: 0-28)
- Outpatient visits-count of urgent care visits over past 12 months, capped at ten
- Hospitalization for asthma in past year -dichotomous yes/no

## Results: Sample Characteristics of 353 adults

	N	(%)
Race/Eth: African-American	184	(52)
Hispanic	99	(28)
Other	54	(12)
Education: < High School	60	(17)
High School graduate	236	(67)
College Graduate	56	(16)
Income: < \$15K	86	(24)
\$15-30K	84	(24)
\$30-50K	64	(18)
>\$50k	97	(28)

	N	(%)
Female	276	(78)
Age: median in years (range)	32	(18-41)
Insurance status: Self pay	45	(13)
Medicaid	145	(41)
Private	159	(45)
Severity:		
Hospitalized with asthma, past 12 m	46	(13)
Emergency room visit, asthma, past 12m	143	(41)
Use of inhaled corticosteroids	178	(50)

## Results

Independent predictors of private insurance (P<.01, ROC AUC .86, 95%CI .82-.90):

- male sex
- education/literacy
- non-minority status
- work for pay
- home ownership

\*There were no significant differences between Medicaid and self-pay for any outcome, so they were combined for analysis.

### Impact of private insurance

outcome	P	Coefficient	Model R <sup>2</sup>
Quality of life	<.001	.6	.09 (unadjusted)
	.019	.4	.17 (adjusted, without CES-D)
	NS	-	.28 (adjusted, with CES-D)
Symptom days and nights	NS	-	.12
Urgent care	.001	.9	.03 (unadjusted)
	NS	-	.07 (adjusted)
Hospitalization	.017	OR 0.4 (95% CI 0.2-0.8)	.75

## Conclusions

In this community-derived cohort of adult asthmatics:

-private insurance was associated with better asthma-specific quality of life and fewer hospitalizations, but not with symptoms or urgent visits in adjusted analysis;

-the impact of private insurance on asthma quality of life is mediated by depressive symptoms;

-the lack of effect of public aid in these asthma status measures is worrisome, and suggests the possibility of inadequate quality of asthma care in this publicly funded insurance program.

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