

Insurance Coverage and Asthma: Relationship to Disease Management Outcomes

Robert Woldman¹ and Winston Liao²

¹State Center for Health Statistics and ²Asthma Program
Division of Public Health
North Carolina Department of Health & Human Services

Presented at 25th Annual BRFSS Conference
Orlando, FL, March 18, 2008



Background

“Millions of Americans do not have health insurance coverage. Persons with chronic diseases are especially at risk of bad outcomes.”

From: Description for “Health Workshop on State Health Coverage Initiatives & Chronic Disease,” Council of State Governments 2007 Spring Meeting, June, 2007

Introduction: Burden of Asthma in the U.S.

- Lifetime Prevalence: 12.5%
- Current Prevalence: 7.9%
- ED Visits: 7.8%
- Hospitalizations: 170 per 100,000 pop.
- Mortality: 13.0 per million pop.
- Annual Healthcare Cost: \$16.1 billion
(direct ~\$11.5 billion, indirect ~\$4.6 billion)



Study Objective

- ▶ To examine the patterns of emergency/urgent care and asthma medication and inhaler usage among adults with asthma, with Medicaid, private or employer-provided insurance or no health insurance coverage.

Methods

- ▶ Source of data: 2006 North Carolina Behavioral Risk Factor Surveillance System data for adults 18-64 years of age with asthma (lifetime, n=1,089; current, n=694)
 - State-added insurance question: respondent's associated insurance coverage – private, employer-provided, uninsured
- ▶ Variables of interest:
 - Asthma episodes, inhaler use, asthma medication use, emergency department (ED) visits, urgent care visits

Methods (Cont.)

▶ Analysis

- Bivariate and multiple logistic regression performed to determine predictors of ED/urgent care usage, use of prescription asthma medications, and use of asthma inhalers
- Control for obesity, race, gender, age, and educational level

Results: Study Sample

Insurance Coverage	Lifetime Asthma		Current Asthma	
	Yes n=1089	No n=9050	Yes n=694	No n=383
Medicaid	25.4%	74.6%	86.1%	13.9%
Private or Employer-provided	9.1	90.9	58.9	41.1
None	12.4	87.6	52.9	47.1

Insurance Coverage (Medicaid vs. Private) and Asthma-related Outcomes*

	No. of Observations	OR Estimate	95% CI	P value
Asthma Episodes	646	1.63	0.84 3.10	.151
Asthma Inhaler Use	634	3.73	1.84 7.57	<.001
Rx Asthma Medication Use	642	2.48	1.13 5.46	.024
Emergency Dept. Visit	649	2.79	1.42 5.50	.003
Urgency Care Treatment	641	1.14	0.60 2.17	..682

*Results part of logistic regression analyses using Medicaid and No Insurance as independent variables (with Private Insurance as the reference) and controlling for obesity, race, gender, age, and educational level; comparison of no insurance vs. private insurance showed no significant relationships for any of the five asthma-related outcomes

Results: Summary

▶ Persons with asthma who had Medicaid coverage had significantly greater use of:

- Prescription asthma medications
- Asthma inhalers
- Emergency departments



than those with private insurance or no insurance, even after controlling for obesity, race, gender, age, and low educational level

Results: Summary (Cont.)

- ▶ No significant differences were found between the three insurance coverage types for:
 - Asthma episodes
 - Urgent care treatment by healthcare provider

Discussion

- ▶ Supports other studies of (Davidson et al., 1994; Finkelstein et al., 2000)
- ▶ Adds other adult asthma management behaviors
- ▶ Need to examine other factors (e.g., disease severity, gaps in insurance coverage – Markovitz & Andreson, 2006)

Conclusions

- ▶ Asthmatics with public medical insurance (Medicaid) coverage exhibit greater use of medications, inhalers, and emergency departments
- ▶ BRFSS data are useful for exploring healthcare access issues among persons with asthma
- ▶ BRFSS call-back surveys will allow for the addition of more specific questions about insurance coverage and disease severity

Acknowledgments

- ▶ 2005 BRFSS, CDC
- ▶ National Hospital Ambulatory Medical Care Survey, 2001-2003
- ▶ National Hospital Discharge Survey, 2004
- ▶ 2005 preliminary mortality statistics, CDC, NCHS
- ▶ State Center for Health Statistics, Division of Public Health, N.C. Department of Health & Human Services

The authors dedicate this presentation in memory of Janet Reaves.

Contact Information

Winston Liao

Asthma Program

N.C. Division of Public Health

5505 Six Forks Road, MSC 1915

Raleigh, NC 27699-1915

Tel: 919 707 5210

Winston.liao@ncmail.net

