Relationship between Health Insurance Coverage and Childhood Asthma-related Outcomes





Abstract

Recent research has shown that healthcare coverage is related to diagnosis of asthma and treatment, including asthma-related hospitalizations. However, one study found that excess emergency department (ED) visits by black children are not attributable to different types of health insurance coverage. We studied the relationship between type of insurance and medication and ED/urgent care usage among children under 18 years of age. Data from the 2005 and 2006 North Carolina Child Health Assessment and Monitoring Program (CHAMP) Surveys were used for bivariate and multiple logistic regression analyses to determine predictors of three asthma management behaviors. Children who currently had asthma and with public insurance were significantly more likely to take asthma medications every day [aOR=2.15] (CI=1.30-3.54) p<.01] than those with private insurance. Those with no insurance were significantly more likely to report an ED/urgent care visit [aOR=3.21 (CI=1.02-10.07) p<.05] than those with private insurance. No significant relationships were found between type of insurance and rescue medication usage. Even after controlling for age, gender, and race, the results show that the relationship between type of insurance coverage and childhood asthma management behavior varies depending on the current status of the child's asthma. CHAMP data are useful for exploring healthcare access issues among children with asthma.

Background

"Millions of Americans do not have health insurance coverage. Persons with chronic diseases are especially at risk of bad outcomes" – Health Workshop on State Health Coverage Initiatives & Chronic Disease, Council

of State Governments 2007 Spring Meeting, June, 2007

Introduction

In North Carolina and for the U.S., children under the age of 18 are more disproportionately affected with asthma than persons aged 18 and older and demonstrate higher rates of prevalence and other management behaviors.

Study objective: To examine the relationship between type of insurance and medication and ED/urgent care usage among children 2–17 years of age with current asthma

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Methods

Sources of data: 2005 and 2006 North Carolina Child Health Assessment a Monitoring Program (CHAMP) Surveys

Variables of interest:

- **Prevalence:** lifetime prevalence, current prevalence
- **Insurance coverage:** type of coverage
- **Asthma-related outcomes:** emergency department/urgent care visits, use of medications

Analysis:

- **Bivariate and multiple logistic regression:** to determine predictors of three asthma management behaviors
- **Control for:** age gender, race

Conclusions

- Children who currently had asthma and with public insurance were significantly more likely to take asthma medications every day than children with private insurance
- Children with no insurance were significantly more likely to report an ED/ urgent care visit than those with private insurance
- No significant relationship was found between type of insurance and rescue medication usage
- Even after controlling for age, gender, and race, the relationship between type of insurance coverage and childhood asthma management behavior varies depending on the current status of the child's asthma
- CHAMP data are useful for exploring healthcare access issues among children with asthma

Acknowledgments

- State Center for Health Statistics, Division of Public Health, N.C. Department of Health and Human Services
- North Carolina DHHS Public Affairs

The authors dedicate this presentation in memory of Janet Reaves.

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	TABLE criptive S 2006 CHA	tatis				Cross-Ta	bula	TABL dent and C ted with I	Contr Depe	ndent V	/aria				
	REN 2- RENT A				ни			& 2006 CH				4 S T I	ΗΜΑ		
	N = 5 0	1									. ,				
Daily Use		N	Weighted %		N = 501										
Asthma I							Daily Use of Asthma Med		Use of Rescu Med		ue		'isit in Las 2 Months		
Yes		271	54.1	Туре	of In	surance	N	Weighted %	N	Weighte	Weighted %		Weighted %		
No		230	45.9		Priva		133	47.7	234	87.3		N 52	21.8		
Use of Rescu Yes		N 431	Weighted % 86.0											┛	
No		431 70	14.0		Publ	IC ²	123	68.1	171	84.1		58	33.5		
ED Visit in	Last	N	Weighted %	Nc	o Insui	rance	15	41.3	26	86.9		12	43.6		
12 Mont	ths			Age of Child			Ν	Weighted %	N	Weighted %		Ν	Weighted %		
Yes		122	24.4		2 to 7			56.4	159	80.8	5	62	36.1		
No Type of Inst		379 N	75.6 Weighted %		8 to	12	75	64.0	106	91.3		24	25.22		
Private		,074	36.4												
Public		,735	63.6	13 to 17			90	49.0	166			36	18.6		
No Insura	nce	32 6.4		Sex of Child			Ν	Weighted %	N	Weighted %		N	Weighted %	6	
Age of Cl	hild	Ν	Weighted %	Male			145	55.5	249	90.6	90.6		28.4		
2 to 7		193	38.5		ale	126	57.0	182	80.5		54	27.5			
8 to 12		120	23.9	Race of Child			N	Weighted %	N			N	Weighted %		
13 to 1		188 N	37.5							Weighte				0	
Sex of Cl Male		N Weighted % 275 54.9 226 45.1 N Weighted %		African American White			85	62.6	124	87.6)	56	43.4		
Female							157	52.1	257	84.0)	51	16.8		
Race of C					Othe	er	29	52.1	50	90.8	3	15	28.4		
African Ame	erican	142	28.3	¹ Private Insurance Plan or Sta			Employ	ee Health Plan	I						
White		304	60.7			a ACCESS, Healt	1 0								
Other		55	11.0												
¹ Private Insurance ² Medicaid, Carolina		1 0		TABLE 3: Independent and Control Variables Cross-Tabulated with Dependent Variables 2005 & 2006 CHAMP Survey											
				athma Mad			N 2-17 WITH CURRENT ASTHMA Use of Rescue Med								
	Unadjusted		Daily Use of A Unadjusted	Adjusted	Adjusted A		Un	adjusted				usted	Ad	juste	
	OR		95 % CI	OR		95% CI		OR	95	5 % CI	C	DR	95	5% C	
Insurance															
vate ¹	1.00			1.00			_	1.00	_		1.	.00			
Public ²	2.35	** 1.49 - 3.69		2.15	**	1.30 - 3.54	F	0.77	0.40	0 - 1.47	0.75		0.39 - 1		

													·					
		Daily Use of	Asthma Med	Use of Rescue Med						ED Visit in Last 12 Months								
	Unadjusted OR		Unadjusted 95 % CI	Adjusted OR		Adjusted 95% CI	Unadjusted OR		Unadjusted 95 % CI	Adjusted OR		Adjusted 95% CI	Unadjusted OR		Unadjusted 95 % CI	Adjusted OR		Adjusted 95% CI
Type of Insurance																		
Private ¹	1.00			1.00			1.00			1.00			1.00			1.00		
Public ²	2.35	**	1.49 - 3.69	2.15	**]	1.30 - 3.54	0.77		0.40 - 1.47	0.75		0.39 - 1.44	1.81	*	1.07 - 3.06	1.15		0.64 - 2.04
No Insurance	0.77		0.33 - 1.79	0.80	0	0.34 - 1.91	0.97		0.31 - 3.06	0.90		0.29 - 2.79	2.78	*	1.11 - 6.96	3.21	*	1.02 - 10.07
Age of Child			· · · · · · · · · · · · · · · · · · ·	ř.							Ŧ						Ŧ	
2 to 7	1.00			1.00			1.00			1.00			1.00			1.00		
8 to 12	1.38		0.79 - 2.40	1.38	0	0.79 - 2.43	2.50	*	1.10 - 5.68	2.41	*	1.06 - 5.48	0.60			0.54	+	0.28 - 1.03
13 to 17	0.74		0.46 - 1.22	0.86	0	0.52 - 1.43	1.81	+	0.90 - 3.65	1.76		0.87 - 3.56	0.40	**		0.37	**	0.19 - 0.71
Sex of Child			· · · · · ·	î.							Ŧ						- F	
Male	1.00			1.00			1.00			1.00			1.00			1.00		
Female	1.06		0.69 - 1.63	1.04	0	0.67 - 1.60	0.43	**	0.23 - 0.82	0.44	*	0.23 - 0.85	0.95		0.58 - 1.58	0.90		0.54 - 1.55
Race of Child			· · · ·												· · · · · ·		-	
White/Other	1.00			1.00			1.00			1.00			1.00			1.00		
African American	1.54	+	0.97 - 2.45	1.19	0	0.72 - 1.98	1.27		0.64 - 2.53	1.41		0.69 - 2.86	3.48	**	2.10 - 5.79	3.57	**	2.03 - 6.26

² Medicaid, Carolina ACCESS, Health Check, or South Care

* P < .05 ** P < .01

+ p < .10

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HEALTH INSURANCE