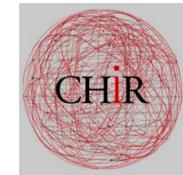


The Role of Access: Acute Asthma Care Utilization in a 2008 Arizona Medicaid Population

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ABSTRACT

Prior research shows racial disparities in patient (IP) and emergency department (ED) use for children with asthma. It has been difficult to disentangle the effects of race from the effect of socioeconomic status on IP and ED use. To better understand the relationship between race and care in these settings, data from a cohort of 3490 school-age children with asthma enrolled in the AHCCCS (Medicaid) program in Maricopa County, Arizona in 2008 were analyzed. For children with asthma, odds ratios were estimated by comparing 'any visit' (ED or IP) to 'no visits' according to race/ethnicity. Among children with asthma, African-Americans were about twice as likely to have at least one ED or IP visit compared with non-Hispanic Caucasians. Odds ratios for having any ED or IP visit were also increased in Hispanics and Native-Americans compared with non-Hispanic Caucasians but the increases were not statistically significant. Although the generalizability of the study is limited, the data suggest that differences in socioeconomic status do not fully explain racial disparities in use of the ED and IP settings for asthma care. Attempts to further understand any causal relationship between race and asthma should be coupled with targeted interventions to minimize known disparities.

INTRODUCTION

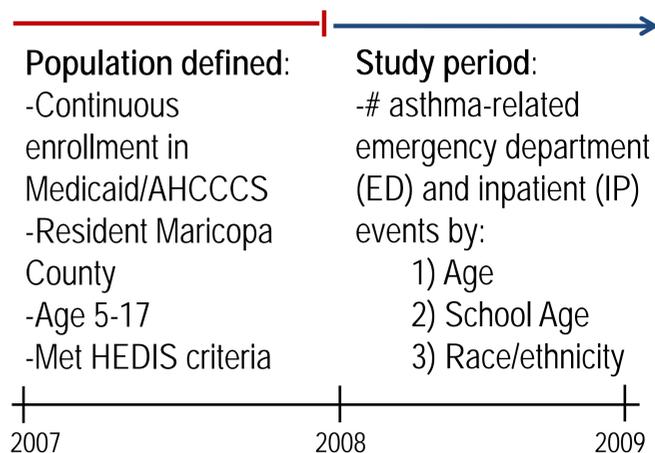
In Arizona in 2009, 25,893 emergency department (ED) and 8,287 inpatient (IP) events occurred due to asthma¹. 45% of ED events and 36% IP events occurred in children age fifteen or younger. Race is one variable associated with acute asthma care seeking behavior. Hispanic hospitalization/inpatient (IP) events related to asthma have been observed at a rate of nearly twice that of non-Hispanic Caucasians.

Further, African Americans were nearly three times as likely as non-Hispanic Caucasians to be hospitalized for asthma and are also three times more likely to die from asthma³. The extent to which poverty is driving this trend is unclear. When controlled for income levels, the disparity between Hispanics and non-Hispanic Caucasians dramatically narrows². Similar reductions are observed between African Americans and Caucasians when hospitalization rates are controlled by poverty level⁴. Among low income children on Medicaid, however, African-American children have been shown to be persistently high users of ED and IP services, with lower rates of outpatient care utilization^{5,6}. This suggests that a non-socioeconomic variable belies observed racial differences in acute asthma care seeking behavior.

METHODS

Population defined:
 -Continuous enrollment in Medicaid/AHCCCS
 -Resident Maricopa County
 -Age 5-17
 -Met HEDIS criteria

Study period:
 -# asthma-related emergency department (ED) and inpatient (IP) events by:
 1) Age
 2) School Age
 3) Race/ethnicity



HEDIS definition of asthma:

-1 asthma related inpatient (IP) admission or 4 asthma medication dispensing events or 4 outpatient (OP) visits + 2 asthma medication dispensing events

Tests of Significance:

Odds ratios (OR) and 95% confidence intervals (CI) were estimated for having 1 or more ED or IP visit compared with none. The chi-square statistic was used to assess the statistical significance of difference in having 1+ visits.

RESULTS

Odds that a Child with Asthma Experienced an ED or IP event, classified by Race/Ethnicity

Race/Ethnicity	OR	95% CI	p value
African-American	2.0	1.5-2.8	<0.001
Asian-American/ Pacific Islander	0.27	0.01-1.65	0.17
Hispanic	1.3	1.2-1.7	0.03
Native-American	1.5	0.7-3.0	0.28

Table 1: African American and Hispanic children with asthma had a greater odds of ED/IP use compared to a Caucasian referent group.

Odds that a Child with Asthma Experienced an ED or IP event by Race/Ethnicity, Stratified by Age

School Age	Race/Ethnicity	OR	95% CI	p value
Elementary	African American	2.36	(1.61-3.64)	<0.001
	Asian-American/ Pacific Islander	0.62	(0.07-4.94)	0.66
	Hispanic	1.23	(0.90-1.68)	0.20
	Native American	0.89	(0.30-2.61)	0.83
Junior High	African American	1.14	(0.43-2.98)	0.80
	Asian-American/ Pacific Islander	-	-	-
	Hispanic	1.54	(0.76-3.12)	0.23
	Native American	-	-	-
High School	African American	1.91	(1.1-3.38)	0.03
	Asian-American/ Pacific Islander	-	-	-
	Hispanic	1.11	(0.67-1.86)	0.67
	Native American	3.40	(1.27-9.12)	0.02

Table 2: By school age, only African American elementary and high school age and Native American high school age asthmatics have greater ED/IP use compared to a Caucasian referent group.

DISCUSSION

Potential non-SES variables influencing ED/IP use:

- Race/cultural differences in parental literacy, medication compliance, beliefs of disease chronicity, concern for prolonged inhaled steroid use and preventive asthma care
- Non-disclosure of complimentary and alternative medicine (CAM) for asthma treatment

- Cultural distrust of governmental healthcare
- Inadequate communication between patients and healthcare providers in minority race/ethnicities

-Potential area for improvement in AHCCCS outreach?

- Genetic polymorphisms between races which mediate response to environmental allergens and treatment response

Limitations:

- Observational, retrospective study
- HEDIS criteria lacks specificity
- Classification of "Hispanic" is heterogeneous
- Confounding variables: Extremes of poverty, low birth weight and asthma

CONCLUSION

Racial differences in the use of acute care settings by children with asthma were observed even among children all of whom were enrolled in Medicaid and thus of lower socioeconomic status.

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