

# Utilization of Emergency Department for Treatment of Asthma in Alabama's African-American Pediatric Population

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## INTRODUCTION AND PURPOSE

Asthma is the most common chronic disease in children; however, despite effective therapies, its prevalence continues to increase. Asthma prevalence rates are disproportionately high in African American (AA) children. AA children have high rates of emergency department (ED) visits related to asthma, and studies show that they are likely to use the ED for primary care. ED use is often attributed to socioeconomic status (SES) factors such as household income, insurance status, and lack of a medical home. However, the presence of an asthma management plan and asthma education by a healthcare professional may influence ED use. Using data from the National Asthma Survey (NAS), we evaluate the use of ED for asthma care in Alabama's AA children.

The purpose of this study is to examine the influence of SES factors and asthma education on ED use by Alabama's AA children.

## METHODS

We began this study by reviewing previously published articles found using PubMed and Google Scholar. Data were obtained from the NAS, a survey sponsored by the Centers for Disease Control and Prevention's National Center for Environmental Health. Data were evaluated using SPSS and Excel. The NAS looks at the quality of healthcare of persons with asthma in four states, including Alabama, collecting data through a telephone survey between March 2003 and March 2004. AA children ages 0-17 from Alabama (n=108) were identified; from that group, those children who reported ED use in the past 12 months (n=34) were examined.



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## DISCUSSION

### ED USE AND SOCIOECONOMIC STATUS (SES) FACTORS

Traditional SES factors associated with ED use including race, income, insurance status, and presence of a medical home were examined using NAS data for the state of Alabama. Findings revealed that 31% of AA children had an asthma-related ED visit in the last 12 months (Fig. 1). Of those Alabama AA children that used the ED, 94% reported having some kind of health care coverage at the time of the ED visit (Fig. 3), and all reported having seen a healthcare professional at least once in the past 12 months for routine checkup for asthma. This is in conflict with published findings that consider household income, lack of insurance and lack of medical home to be important markers for ED use (2, 4-8). Figure 2 indicates that the majority of AA children that used the ED reported household income levels below \$25,000. Many children at this income level qualify for Alabama Medicaid. Further, Medicaid coverage provides regularly scheduled well-child checkups with a medical provider, and continued coverage of ongoing health problems (1).

### ED USE AND ASTHMA EDUCATION

NAS data confirmed that, of Alabama's AA children who went to the emergency room, 59% of the responders answered "yes" to the question which asked if they had ever received an asthma management plan, and 88% of the responders affirmed that a health professional taught them what to do during an asthma episode or attack. It is concerning that despite the strong presence of an asthma management plan and previous asthma education in this population, a high percentage of ED use is reported; however, the severity of the asthma episode warranting an ED visit cannot be extrapolated from the NAS survey. Although not enough is known about the nature of the ED visits reported, several speculations can be made. If the ED visit was prompted by acute symptoms identified through an asthma management plan (59%) or previous asthma education (88%), then the utilization of the ED could be correlated with medical compliance. Conversely, the number of respondents who stated that they did not have an asthma management plan (41%) could indicate that the lack of a management plan or education increases the risk for emergent care. This finding supports the concept in published literature stressing the importance of effective management and education interventions (2, 4-8).

## RESULTS

Figure 1: Reported ED Use in the Past 12 Months by Alabama's AA Children

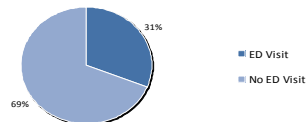


Figure 3: Percentage of Alabama's AA Children with an Asthma-Related ED Visit Who Report Having Healthcare Coverage



Figure 2: Reported Household Income Levels of Alabama's AA Children with Asthma-Related ED Visit

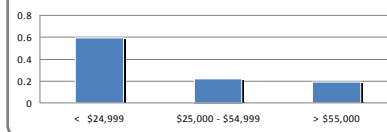


Figure 4: Percentage of Alabama's AA Children with an Asthma-Related ED Visit Who Report Having an Asthma Management Plan

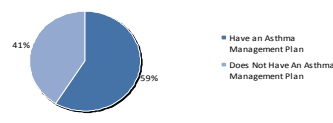
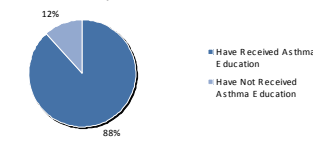


Figure 5: Percentage of Alabama's AA Children with an Asthma-Related ED Visit Who Report Education by a Healthcare Professional



## LIMITATIONS

- The overall sample size of African American children who reported an ED visit in the last 12 months is low (n=34).
- There were a large number (27%) of unanswered questions, or questions answered with "I don't know" or "Refused to answer" for the entire survey.
- The accuracy of self-reporting and recall is always a concern in telephone interviews.
- The severity of asthma symptoms prompting the ED visit is not known.

## CONCLUSIONS

Reasons for ED use in Alabama's AA children are complex. Even with healthcare insurance and education in place, an inequity of ED use in AA children persists. Implications for future research include longitudinal studies to measure the effects of asthma education on ED use, as well as studies that measure the severity of the asthma episode prompting the ED visit. Measurement of the influence of an asthma management plan on ED use would also provide useful information. Qualitative studies examining the health beliefs, health behaviors and cultural influences regarding ED use in the AA community would lend additional insight that may lead to measures to reduce this inequity.

## BIBLIOGRAPHY

- 1) Alabama Medicaid Agency: EPSDT-Well Child Checkup Program. Available at: [http://www.medicaid.alabama.gov/programs/EPSDT/index\\_epsdt.aspx?ta=4](http://www.medicaid.alabama.gov/programs/EPSDT/index_epsdt.aspx?ta=4). Accessed March 31, 2009.
- 2) Boudreaux ED, Emond SD, Clark S, Camargo CA. Race/ethnicity and asthma among children presenting to the emergency department: differences in disease severity and management. *Pediatrics*. 2003;111:e615-e621.
- 3) Center for Disease Control: National Survey for Health statistics. National Asthma Survey-Data Set. Available at: <http://www.cdc.gov/nchs/about/major/slaits/nas.htm>. Accessed March 17, 2009.
- 4) Flores G, Tomany-Korman SC. Racial and ethnic disparities in medical and dental health, access to care, and use of services in US children. *Pediatrics*. 2008;121:e286-3298.
- 5) Hoilette LK, Clark SJ, Gebremariam A, Davis MM. Usual source of care and unmet needs among vulnerable children: 1998-2006. *Pediatrics*. 2009;123:e214-e219.
- 6) Meng YY, Babey SH, Brown ER, Malcolm E, Chawla N, Lim YW. Emergency department visits for asthma: the role of frequent symptoms and delay in care. *Ann Allergy Asthma Immunol* 2006;96:291-297.
- 7) Self TH, Chrisman R, Mason DL, Rumbak MJ. Reducing emergency department visits and hospitalizations in African Americans and Hispanic patients with asthma: a 15-year review. *J Asthma*. 2005;42:807-812.
- 8) Stingone JA, Claudio L. Disparities in the use of urgent health care services among asthmatic children. *J Allergy Asthma Immunol*. 2006;97:244-250.