

# The ASTHMA EPIDEMIOLOGY Update

Summer 2010

## Childhood Asthma in North Carolina

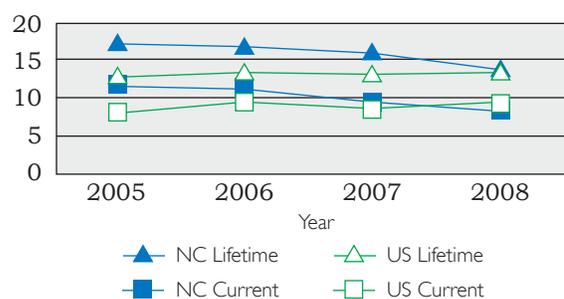
### Introduction

This issue of ***The Asthma Epidemiology Update*** presents prevalence and hospitalization data for childhood asthma in North Carolina. It also provides a look at selected asthma outcomes and management behaviors among children with asthma, and school-based asthma data.

North Carolina's childhood asthma prevalence and hospitalization rates continue to decline. From 2005 to 2008, the N.C. lifetime (have ever had) and current (still have) prevalence rates have declined by 20.2 percent (17.8 percent to 14.2 percent) and 28.7 percent (11.5 percent to 8.2 percent),

respectively, whereas those for the U.S. have increased by 8.7 percent (12.7 percent to 13.8 percent) and 5.6 percent (8.9 percent to 9.4 percent) during that four-year period.<sup>1,2</sup>

**Prevalence of Asthma among Children (<18 years), North Carolina and US, 2005-2008**



**Sources:** NC: 2005-2008 Child Health Assessment and Monitoring Program, NC State Center for Health Statistics; US: 2005-2008 National Health Interview Survey, National Center for Health Statistics, Centers for Disease Control and Prevention

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Over a 10-year span from 1999 to 2008, hospitalizations due to asthma among children under 15 years of age in the state decreased by 38.9 percent (248.6 per 100,000 to 151.9 per 100,000).<sup>3</sup> However, in 2008, asthma hospitalization rates were still higher for children less than 18 years old (131.1 per 100,000 population) than for adults (110.4 per 100,000).<sup>3</sup>

## Asthma Prevalence and Hospitalizations

Boys have higher lifetime and current asthma prevalence rates than girls, while African American children have higher rates than their white counterparts. Although the 14-17 age group has the highest lifetime prevalence rate, children 5-10 years old had the highest current prevalence rate in 2008.

### Lifetime and Current Asthma Prevalence, by Gender, Race, and Age, North Carolina, 2008

	Lifetime Prevalence		Current Prevalence	
	Percent	(95% CI*)	Percent	(95% CI*)
<b>TOTAL</b>	14.2	12.7-15.9	8.2	7.1-9.5
<b>Gender</b>				
Boys	15.7	13.6-18.1	8.8	7.2-10.7
Girls	12.6	10.6-15.1	7.6	6.0-9.6
<b>Race</b>				
White	13.7	11.9-15.8	8.2	6.8-9.9
African American	18.6	14.7-23.2	10.7	7.8-14.6
Other Minorities	10.5	7.8-14.1	5.1	3.5-7.4
<b>Age</b>				
Under 5	7.4	5.2-10.5	5.1	3.3-7.7
5 through 10	16.0	13.3-19.1	10.0	7.9-12.7
11 through 13	16.4	12.6-20.9	7.7	5.3-11.2
14 through 17	17.1	14.1-20.6	9.1	6.9-11.8

**Source:** Child Health Assessment and Monitoring Program (CHAMP), N.C. State Center for Health Statistics, 2009.

\*Confidence Interval

When examining asthma hospitalization rates across the 0-17 age groups, those under age 5 had the highest rate (251.7 per 100,000).

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## Estimated Number and Age-Specific Rate of Hospital Discharges with Asthma as the First Listed Diagnosis, North Carolina, 2008

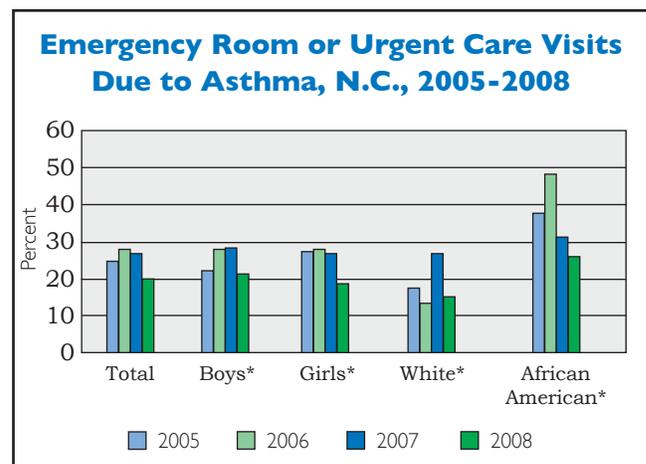
	Age Group (Years)				
	<5	5-10	11-13	14-17	Total
<b>Number of Hospitalizations</b>	1568	951	208	180	2907
<b>Age-specific Crude Rate (per 100,000 Population)</b>	251.7	131.8	57.6	35.2	131.1

Source: North Carolina State Center for Health Statistics, 2008 provisional data. Newborns were not included.

### Asthma Outcomes and Management Behaviors

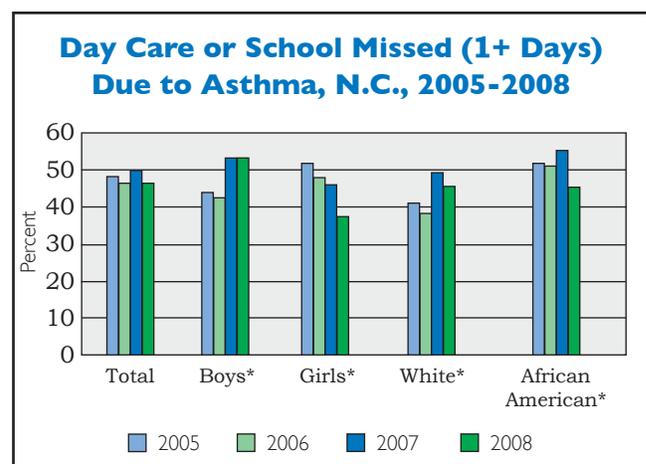
The 2005-2008 North Carolina Childhood Health Assessment and Monitoring Program (CHAMP) data provide additional information about childhood asthma outcomes and management behaviors. Some notable findings are:

- Emergency room or urgent care visits due to asthma decreased from 2006-2008; African American children reported having more visits than white children.
- More boys missed school due to asthma than girls; reports of missed school days by girls decreased from 2005-2008.



Source: Child Health Assessment and Monitoring Program, N.C. State Center for Health Statistics, 2005-2008.

\*Interpret with caution; percentages calculated with a numerator of less than 50 for: boys, girls, white, African American, 2006-2008.

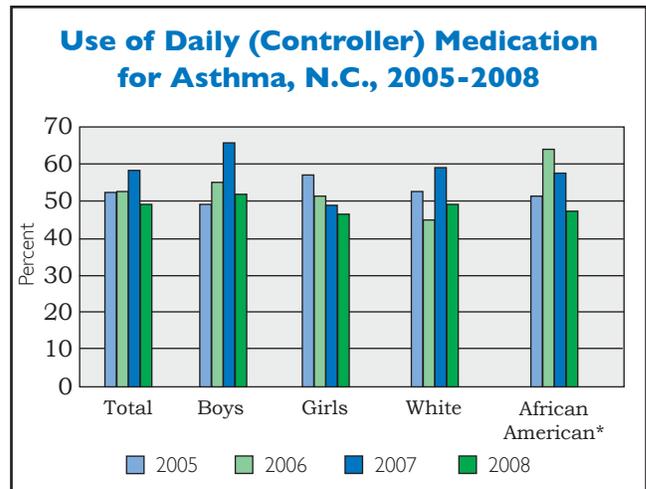


Source: Child Health Assessment and Monitoring Program, N.C. State Center for Health Statistics, 2008.

\*Interpret with caution; percentages calculated with a numerator of less than 50 for: girls, African American, 2006-2007.

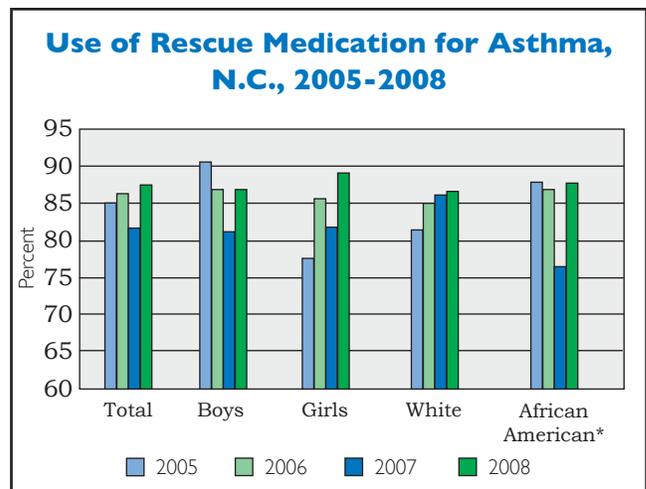
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- Use of daily asthma medication decreased among girls from 2005-2008.
- Use of rescue asthma medication was highest in 2008; that year, girls and African American children reported more usage than boys and white children, respectively.
- Reports of having an asthma action plan increased from 2005-2008; more boys and white children reported having one than girls and African American children.



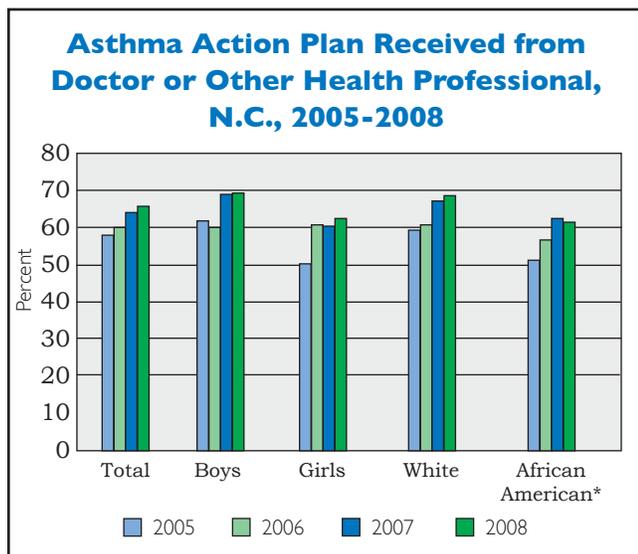
**Source:** Child Health Assessment and Monitoring Program, N.C. State Center for Health Statistics, 2008.

\*Interpret with caution; percentage calculated with a numerator of less than 50 for African American, 2005-2008.



**Source:** Child Health Assessment and Monitoring Program, N.C. State Center for Health Statistics, 2008.

\*Interpret with caution; percentage calculated with a numerator of less than 50 for African American, 2008.

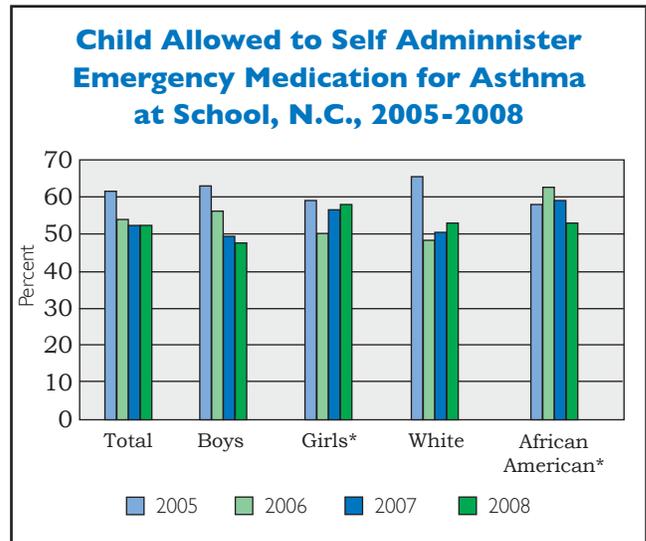


**Source:** Child Health Assessment and Monitoring Program, N.C. State Center for Health Statistics, 2008.

\*Interpret with caution; percentage calculated with a numerator of less than 50 for African American, 2006-2008.

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- Reports of being allowed to self administer emergency asthma medication at school decreased from 2005-2008; most noticeably among boys.

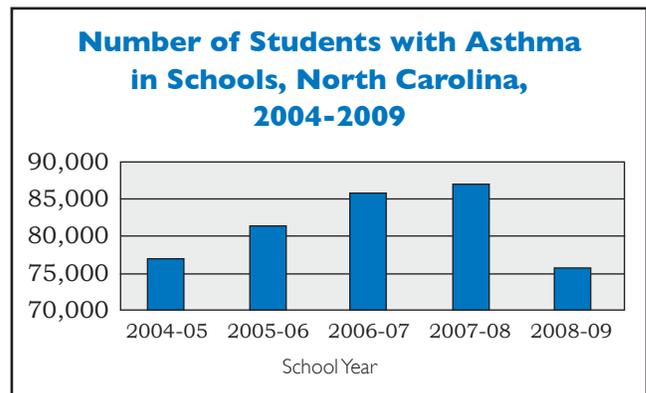


**Source:** Child Health Assessment and Monitoring Program, N.C. State Center for Health Statistics, 2008.

\*Interpret with caution; percentage calculated with a numerator of less than 50 for: girls, 2006. African American, 2005-2008.

## Asthma in Schools

Asthma is the leading cause of school absenteeism in North Carolina. Since the 2004-2005 school year, it has accounted for 31-39 percent of the chronic health conditions reported by school nurses in state elementary, middle, and high schools. The number of students with asthma increased from the 2004-2005 school year (77,276) to the 2007-2008 school year (86,437), but decreased for the first time in 2008-2009 (75,576).<sup>4</sup>



**Source:** North Carolina Annual School Health Services Report, N.C. Division of Public Health, 2004-05 – 2008-09.

# Future Topics

The North Carolina Asthma Program also investigates asthma issues of current interest to both the research and healthcare communities. With the availability of data from other (non-asthma) modules of data sources such as the N.C. Behavioral Risk Factor Surveillance System (BRFSS) and N.C. Childhood Health Assessment and Monitoring Program (CHAMP), we are able to examine topics regarding obesity and asthma, health insurance coverage and asthma, and aging and asthma, among others. We continue to explore other sources of surveillance data and will share updated asthma-related information of interest with you. As always, we welcome your comments and suggestions on this and future issues. Please contact the North Carolina Asthma Program at 919-707-5213.

# References

1. North Carolina State Center for Health Statistics. 2005-2008 N.C. Childhood Health Assessment and Monitoring Program. [www.schs.state.nc.us/SCHS/champ/index.html](http://www.schs.state.nc.us/SCHS/champ/index.html).
2. National Center for Health Statistics, CDC. 2005-2008 National Health Interview Survey. [www.cdc.gov/nchs/nhis.htm](http://www.cdc.gov/nchs/nhis.htm).
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4. North Carolina Division of Public Health, School Health Unit, Children and Youth Branch. North Carolina Annual School Health Services Reports, 2004-05 – 2008-09. [www.nchealthyschools.org/data](http://www.nchealthyschools.org/data).



State of North Carolina  
Department of Health and Human Services  
Division of Public Health  
North Carolina Asthma Program  
[www.ncdhhs.gov](http://www.ncdhhs.gov)

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