• 11% of Georgia’s Children Have Asthma
• 88,000 Children with Asthma Missed
  540,000 Days of School
• 63,000 Parents of Children with Asthma Missed 390,000 Days of Work or School
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MAIN FINDINGS

Asthma in Children

Approximately 11% (210,000) of Georgia’s children 0-17 years of age have asthma.

One in six (16%) Georgia households with children has a child with asthma.

Asthma attacks are common. In the past year:
   65% (140,000) of children with asthma had an attack.
   30% (64,000) visited a hospital emergency department.

Missing school or work is common. In the past year:
54% (88,000) of children with asthma aged 5-17 years missed about 540,000 days of school.
30% (63,000) of adults in homes of children with asthma missed about 390,000 days of work or school.

29% (61,000) of children with asthma live in a household where one or more adults smoke.

56% (120,000) of children with asthma live in a household where no one has taken a course or class on how to manage asthma.

Asthma Hospitalization and Deaths, All Ages

More than 9,000 Georgians are hospitalized each year with asthma as the primary diagnosis (122 hospitalizations per 100,000 population). Georgians older than 65 and younger than 20 are more likely to be hospitalized with asthma. Black Georgians are more likely to be hospitalized with asthma than white Georgians.

Approximately 2 per 100,000 Georgians die from asthma each year. Older Georgians are more likely to die from asthma than younger Georgians. Black Georgians are more likely to die from asthma than white Georgians.
INTRODUCTION

What is Asthma?

Asthma is a disease of the lungs that causes breathing problems known as attacks or episodes of asthma. Asthma is one of the most common chronic conditions in our nation and one of the most serious chronic illnesses of children. In 1998, asthma cost our nation an estimated $7.5 billion. Asthma is the third most common cause of hospitalization among children under the age of 15, and accounts for one in six of all pediatric emergency room visits in the U.S.

A person with asthma has airways that are abnormally sensitive to infection, irritants, allergens, and exercise. The airway muscles tighten and the airway lining swells, making the airways very narrow. It is very hard to breathe when the airways are narrow. It is not understood why or how the airways become abnormally sensitive. The cause of asthma is not known, but it tends to run in families. In older people asthma may be confused with other chronic lung diseases such as emphysema or chronic bronchitis.

What’s in This Report?

This report describes the burden of asthma in Georgia. It contains information from three sources: 1) a survey of asthma among Georgia children conducted in 2000, 2) Georgia hospital discharge data for 1998-1999, and 3) Georgia mortality data for 1982-1998. The survey of asthma among Georgia children was conducted by the American Lung Association of Georgia, Inc. and the Georgia Department of Human Resources, Division of Public Health, to estimate the number of children with asthma and to gain information about how it affects them.

For reasons unknown, asthma became more common during the 1980s and early 1990s. Few numbers are available about the prevalence and burden of asthma in Georgia, because asthma is not contagious and not often fatal. We do know, however, that asthma has taken and continues to take an enormous toll on Georgia citizens in terms of lost productivity, medical costs, family difficulties, and sometimes disability and death. This report is the first to describe some of the burdens of asthma in Georgia.
Prevalence of Asthma in Children, 2000

Which children have asthma?

A recent survey in Georgia indicates that approximately 11% (210,000) of Georgia children 0-17 years of age have asthma (Figure 1). Among households with children, one in six (16%) has a child with asthma.

Asthma affects boys and girls of all ages, race, and ethnic groups (Figure 2). Among Georgia children, asthma is slightly more common among boys (13%) than girls (8%), and among blacks (12%) than whites (10%). These are not statistically significant differences but similar results have been reported in other surveys. Asthma is slightly more common among Georgia children 5-12 years of age (12%) than children 13-17 (10%) or 0-4 (9%).

In Georgia, children in households of low economic status are more likely to have asthma than children in households of middle or high economic status (Figure 3). The reason for the trend across income groups is not known. Similar findings have been noted in surveys elsewhere.

1. See Appendix for information about the survey and the definition of asthma used in this report.
**Impact and Severity of Asthma**

Children (and adults) with asthma have episodes, or attacks, when it is difficult for them to breathe. These episodes usually occur in response to a viral infection such as a cold or in response to other triggers such as allergens or irritants. Attacks may be severe enough that the person may miss school or work, or may need to see a doctor.

Among children with asthma, about two-thirds (140,000) have had an attack or episode of asthma in the last year (Figure 4). Almost one-third of Georgia children with asthma (64,000) have been to an emergency room because of asthma in the last year.

In the past year, more than half (54%) of Georgia children 5-17 years of age with asthma missed one or more days of school due to asthma (Figure 5). Based on this report about 88,000 children age 5-17 years of age with asthma missed an estimated 540,000 days of school due to asthma. These 540,000 school days are about 5% of the total number of days missed by all students for any reason.

Parents or other caretakers may miss work or school because their child is having an asthma attack. In the past year, 30% (about 63,000) of parents of children with asthma missed an estimated 390,000 days of work or school, because of the child’s asthma.
Preventing Asthma Attacks

The number and severity of asthma attacks can be reduced by avoiding allergens, irritants, and other triggers, and by taking prescribed preventive medicine every day. Furthermore, a written action plan outlining recommended medications and detailing proper self-management steps can reduce the number of severe attacks.

Patient education is important to teach patients and their families to recognize and avoid triggers and how to respond when an attack begins. Patient and family education may include individual instruction from physicians or office staff, information from the American Lung Association (ALA) or other national organizations, or a course or class on how to manage asthma. Although some individuals may have learned how to manage their or their child’s asthma through other means, over half of Georgia children with asthma (120,000) live in a household where neither parent nor child has taken a course or class in managing asthma (Figure 6).

Avoiding tobacco smoke is another way to reduce the frequency of asthma attacks. Tobacco smoke is known to be a trigger for many people with asthma. More than one-quarter (about 61,000) of children with asthma live in a household where at least one person smokes inside the house (Figure 7).

The number of asthma attacks can also be reduced by medications. In Georgia almost all children with asthma take medicine to help manage their asthma. One-quarter (about 56,000) take asthma medicine every day (Figure 8).
Asthma Hospitalization and Death Rates

Most asthma attacks are successfully managed without hospitalization. Sometimes, however, hospitalization is required. During 1998-1999, there were more than 9,000 hospitalizations per year in Georgia (122 per 100,000 population per year) with asthma as the primary diagnosis, (Table 1, page 9). Death from asthma is uncommon. In the 17 years from 1982 through 1998, there were 1,990 deaths from asthma in Georgia, an average of 117 per year (2.2 per 100,000 population). Asthma hospitalizations and deaths are highest in the winter.

The age-adjusted death rate for asthma in Georgia is similar to the rate for the United States. During the 1980s and early 1990s, death rates in Georgia were slightly higher than U.S. rates and both were rising (Figure 9). Since 1993, the rates for Georgia and the U.S. have been similar and stable.

Hospitalization rates for asthma are about 100 times higher in Georgia than death rates. Hospitalization rates are highest for both young and old people, whereas death rates are low for young people and highest for older people (Figure 10). Young people 0-19 years of age had nearly the same hospitalization rate as older people 65 years and older, but older people had a death rate that was about 30 times higher than the death rate for younger people.
Both hospitalizations and deaths are more common among black Georgians than white Georgians. Black Georgians were 2.0 times more likely to be hospitalized with asthma and 2.6 times more likely to die from asthma than white Georgians (Figure 11).

When all ages are considered together, hospitalization and death rates for asthma in Georgia are higher for females than for males. Females are 1.5 times more likely to be hospitalized with asthma and 1.3 times more likely to die from asthma than are males. For reasons unknown, asthma is diagnosed more commonly in adult females than adult males. Conversely, asthma is diagnosed more commonly in boys than girls.

**Children**

Among children, those 0-4 years old are the most likely to be hospitalized with asthma. Their hospitalization rate is more than twice as high as any other age group. As children get older, hospitalization rates decrease (Figure 12).
Table 1. 
Asthma Hospitalization Rates and Charges by County, 1998-99

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* Hospitalization Rate is per 100,000 county residents per year.

** Hospital Charges may differ from costs — Charges are based upon the hospital’s full established rates. The amount a hospital is reimbursed is usually less than what is charged.

# Counties in color block had hospitalization rates significantly higher than the Georgia rate.

# Counties with a # had hospitalization rates significantly lower than the Georgia rate.

# # Rates not calculated for counties with <10 hospitalizations.
Figure 13. Georgia Counties with High Asthma Hospitalization Rates, 1998-1999

Forty-seven of Georgia's 159 counties had asthma hospitalization rates in 1998-1999 that were significantly higher than the state rate (122 hospitalizations per 100,000 per year). Although counties with high rates are located in all parts of Georgia, they are more common in a band extending from Augusta to the southwest corner of the state (Figure 13).
Conclusions

This report confirms that asthma is a major health problem in Georgia, as it is in the rest of the nation. The report shows that an estimated 11% (210,000) of Georgia children from 0-17 years of age have asthma and that asthma has a significant impact on their lives. Sixty-five percent (140,000) of children with asthma had an attack in the past year and 30% (64,000) visited a hospital emergency department. Asthma also affects school attendance; 54% (88,000) of children with asthma missed one or more days of school during the year because of asthma. Parents and other caretakers of children with asthma also are affected; 30% (63,000) of them missed one or more days of work or school due to the child's asthma.

Findings presented in this report suggest at least two ways by which the burden of asthma in Georgia could be reduced:
1) reduce the exposure of people with asthma to tobacco smoke, and
2) improve training in asthma management for parents and older children.

Reducing Smoking

More than one-quarter of Georgia children with asthma live in a household where someone smokes. Exposure to tobacco smoke has been shown to make asthma more severe. Even the smoke that remains on clothing can trigger an attack in a sensitive person. Stopping smoking or at least not smoking in the house will reduce the frequency and severity of asthma attacks. Efforts to reduce smoking among the entire population and limit smoking in public places also will help prevent asthma attacks.
Improving Training

More than half of Georgia children with asthma live in homes where neither parent nor child has taken a course or class on how to manage asthma. Additionally, starting asthma education at the time of diagnosis, integrating that education into every step of clinical asthma care, and tailoring the education specifically to the needs of each patient can reduce the frequency and severity of asthma attacks. To reduce the frequency and severity of asthma attacks, it is important to:

¥ Learn to recognize and avoid asthma triggers.
¥ Learn to recognize early symptoms of an asthma attack.
¥ Have a step-by-step plan to use as indicated by symptoms.

Improving the quality of life of Georgians with asthma is the goal of the Division of Public Health and the American Lung Association of Georgia, Inc. If you need further information, please contact one of the resources listed below or consult with your doctor or health care professional.

Kathleen E. Toomey, M.D., M.P.H.
Director, Division of Public Health

Charles J. White
Chief Executive Officer, American Lung Association of Georgia, Inc.

For further information about asthma, contact your doctor, health care professional, or the following sources:
Further information about asthma for the general public from the ALA may be obtained at:
http://www.lungusa.org

Further information about asthma for the general public from the NIH may be obtained at:
http://www.nhlbi.nih.gov/health/public/lung/index.htm#asthma

Further information for clinicians about the NIH National Asthma Education and Prevention Program Guidelines for the Diagnosis and Management of Asthma may be obtained at:
http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm

Further information on this report may be obtained by contacting:
American Lung Association of Georgia: Charles J. White, CEO, 2452 Spring Rd., Smyrna, GA 30080
Department of Human Resources: Kenneth E. Powell, MD, MPH, 2 Peachtree St. NW 14th floor, Atlanta, GA, 30303
Appendices

Data Sources
The source for the number of children with asthma was a telephone survey conducted by the American Lung Association of Georgia for the Georgia Department of Human Resources. (See methods below) Figures 1-8.

The source for the number of deaths in Georgia was the Office of Vital Records, Division of Public Health, Georgia Department of Human Resources. Figures 9-11.

The source for the Georgia population estimates was the U.S. Bureau of the Census, estimates as of February, 2000. Figures 9-12, Table 1.

The source for the hospital discharge data was the 1998 and 1999 Georgia Hospital In-patient Discharge Data, Division of Public Health, Georgia Department of Human Resources. Figures 10-12, Table 1.


Methods
A random-digit-dial telephone survey was conducted in Georgia among households with children under 18 years of age. Caretakers, in each household, were questioned on behalf of all children living in the home.

The International Classification of Disease, 9th Revision, code for asthma is 493.

Asthma death and hospitalization rates were age-adjusted using the direct method. The 2000 U.S. standard population was used as the standard.

Definitions
Age-adjusted death rate. A rate calculated in a manner that allows comparison of populations with different age structures.

Asthma. For the death and hospital sections, asthma was defined as an ICD-9 diagnosis code of 493. For the survey, asthma was defined as either 1) a current diagnosis of asthma (9.0%), 2) a previous diagnosis of asthma and some indication of medical problems in the past 12 months due to asthma (such as an asthma attack, ER visit, or hospitalization due to asthma) (0.6%), or 3) use of medicine without a diagnosis of asthma and some indication of medical problems in the past 12 months due to asthma (such as an asthma attack, ER visit, or hospitalization due to asthma) (0.9%).

Attack. When the airways of someone with asthma have an abnormal response to a trigger. The airways get very narrow and full of mucus, and the person has difficulty breathing.
**Prevalence.** The percent of a population that has a disease at a specific point in time.

**Three-year rolling average.** When calculating a death rate for a given year, deaths and populations from the previous and following years are included.

**Smoker.** If any adult in the household smoked more than 10 cigarettes in the house in the last month, that person was considered a smoker.

**Statistically significant.** The probability that the observed results are different from what might have occurred as a result of chance alone. In this report, a p-value <.05 was considered statistically significant.

**Trigger.** An infection, allergen, or irritant that sets off a reaction in the abnormally sensitive airway. Examples of allergens include mold, pets, dust mites, and cockroaches. Examples of irritants include cold air, household cleaning products, and tobacco smoke.

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- Chronic Disease Branch
- Family Health Branch
- Epidemiology Branch
  - Chronic Disease, Injury, and Environmental Epidemiology Section

**American Lung Association of Georgia, Inc.**

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Brenda Rambeau, President

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