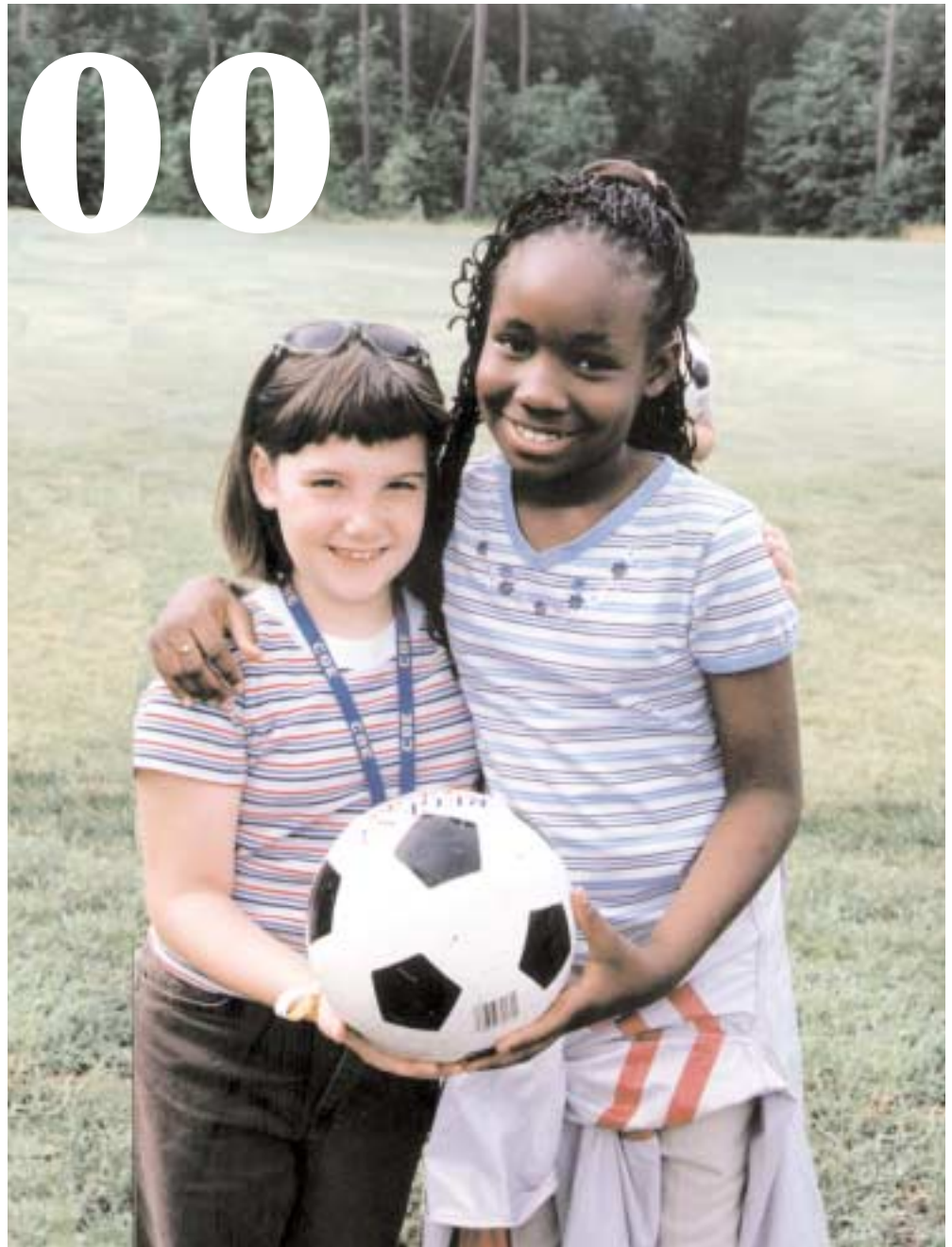




ASTHMA IN GEORGIA

2000



- 11 % of Georgia' 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

TABLE OF CONTENTS

Main Findings	2
Introduction	3
Asthma in Children	4
Asthma Hospitalization and Death Rates	7
Asthma Hospitalization Rates by County	9
Conclusions	11
Appendices	13
Acknowledgements	14



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

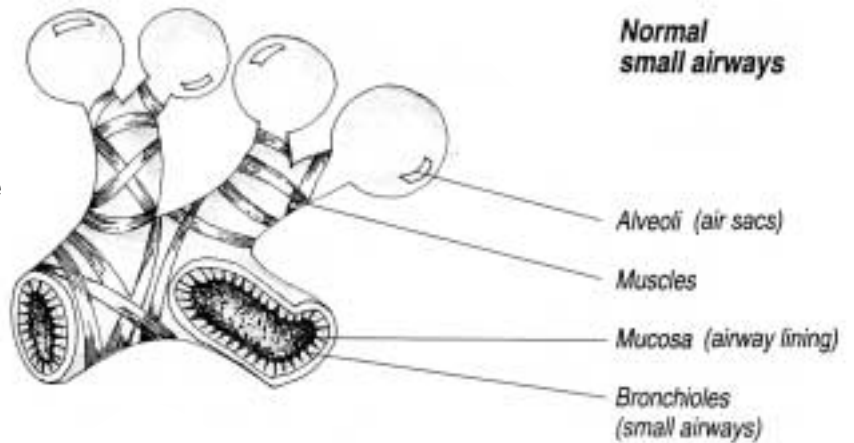
What is Asthma?

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.

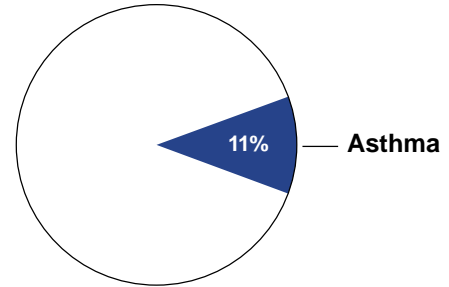
For reasons unknown, asthma became more common during the 1980s and early 1990s. Few numbers are available about the prevalence and burden of asthma in Georgia, because asthma is not contagious and not often fatal. We do know, however, that asthma has taken and continues to take an enormous toll on Georgia 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?

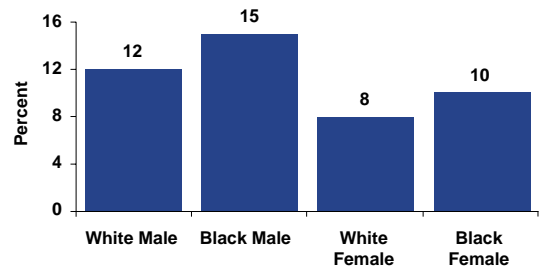
A recent survey in Georgia indicates that approximately 11% (210,000) of Georgia children 0-17 years of age have asthma¹ (Figure 1). Among households with children, one in six (16%) has a child with asthma.

Figure 1. Percent of Children (0-17) with Asthma, Georgia, 2000



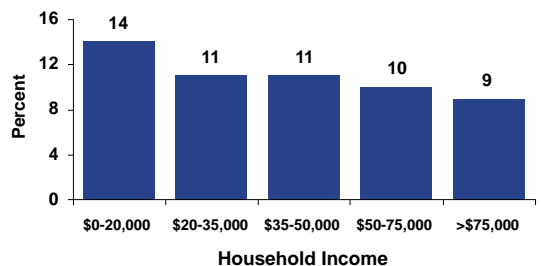
Asthma affects boys and girls of all ages, race, and ethnic groups (Figure 2). Among Georgia children, asthma is slightly more common among boys (13%) than girls (8%), and among blacks (12%) than whites (10%). These are not statistically significant differences but similar results have been reported 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%).

Figure 2. Percent of Children (0-17) with Asthma by Race and Sex, Georgia, 2000



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.

Figure 3. Percent of Children (0-17) with Asthma by Household Income, Georgia, 2000



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.

Figure 4. Asthma Attacks among Children with Asthma, Georgia, 2000

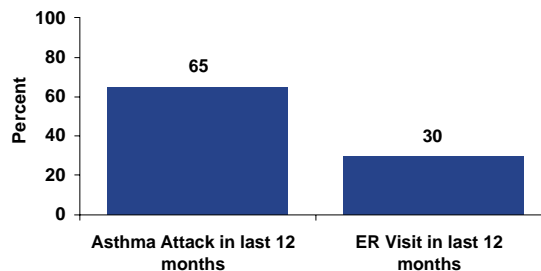
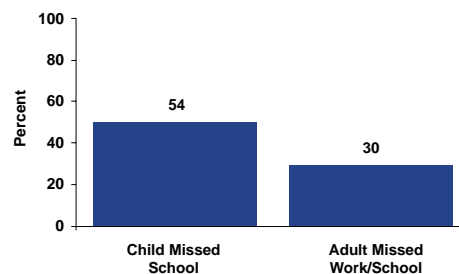


Figure 5. Impact of Asthma in Children (5-17) on School and Work, Georgia, 2000



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).

Figure 6. Percent of Children with Asthma in Households where Neither Parent or Child Has Taken a Class in Managing Asthma, Georgia, 2000

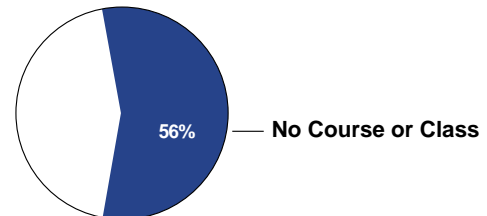


Figure 7. Percent of Children (0-17) with Asthma living in a House with Adult Smoker(s), Georgia, 2000

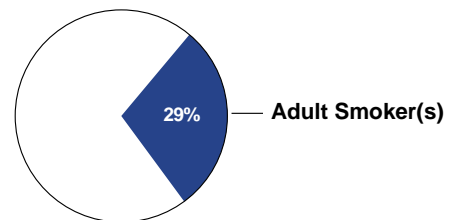
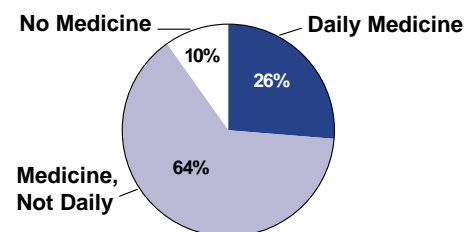


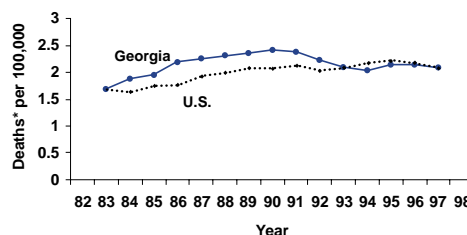
Figure 8. Medication Use among Children with Asthma, Georgia, 2000



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.

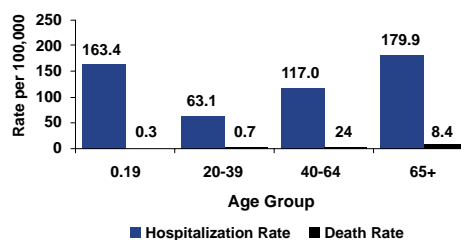
Figure 9. Age-Adjusted* Asthma Death Rate, Georgia and United States, 1982-98**



*Age-adjusted to the 2000 US standard population
 **Age-adjusted Asthma Death Rates for Georgia are 3-year rolling averages

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.

Figure 10. Asthma Hospitalization and Death Rates by Age Group, Georgia 1998-99



Hospitalization rates are for 1998-1999, death rates are for 1994-1998

Hospitalization rates for asthma are about 100 times higher in Georgia than death rates.

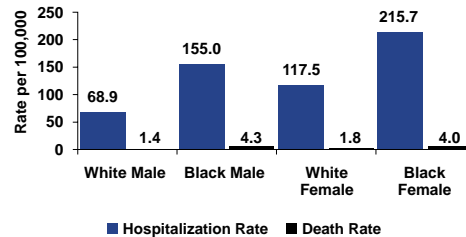
Hospitalization rates are highest for both young and old people, whereas death rates are low for young people and highest for older people (Figure 10).

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.

Figure 11. Age-Adjusted Asthma Hospitalization and Rates by race and sex, Georgia, 1998-99**



*Age-adjusted to the 2000 US standard population
Hospitalization rates are for 1998-1999, death rates are for 1994-1998

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).

Figure 12. Asthma Hospitalization Rates in Those <20 Years by Age Group, Georgia, 1998-99

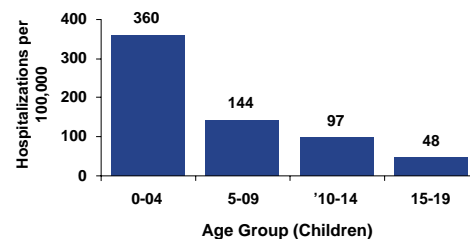


Table 1. Asthma Hospitalization Rates and Charges by County, 1998-99

Hospitalizations			Hospitalizations			Hospitalizations					
County	Number	Rate*	Charges**	County	Number	Rate*	Charges**	County	Number	Rate*	Charges**
Georgia	18,309	122	\$107,600,000								
Appling	73	229	\$301,000	Evans	36	178	\$193,000	Newton#	104	90	\$533,000
Atkinson	19	135	\$89,000	Fannin#	25	84	\$127,000	Oconee	64	129	\$349,000
Bacon	24	117	\$139,000	Fayette#	73	44	\$331,000	Oglethorpe	27	118	\$158,000
Baker	10	146	\$43,000	Floyd	280	171	\$1,100,000	Paulding#	100	72	\$698,000
Baldwin#	74	96	\$390,000	Forsyth#	101	61	\$704,000	Peach	71	146	\$337,000
Banks	33	133	\$184,000	Franklin	61	159	\$277,000	Pickens#	31	77	\$202,000
Barrow	118	140	\$880,000	Fulton	2389	172	\$16,500,000	Pierce	38	126	\$293,000
Bartow#	121	82	\$731,000	Gäner	105	278	\$505,000	Pike	23	90	\$112,000
Ben Hill	70	196	\$326,000	GlascocK	6	#	\$40,000	Pok	107	145	\$419,000
Bernier	99	293	\$421,000	Glynn	201	149	\$1,110,000	Pulaski	43	250	\$150,000
Bibb	464	150	\$3,320,000	Gordon#	60	74	\$313,000	Putnam#	28	81	\$103,000
Blackley	29	130	\$110,000	Grady	46	108	\$235,000	Quitman#	3	#	\$11,000
Brantley	32	118	\$124,000	Greene	45	182	\$247,000	Rabun	56	201	\$256,000
Brooks	68	202	\$304,000	Gwinnett#	858	97	\$4,980,000	Randolph	24	150	\$88,000
Bryan	59	140	\$518,000	Habersham	95	151	\$547,000	Richmond	442	120	\$4,170,000
Bulloch	151	167	\$1,040,000	Hall	272	116	\$1,720,000	Rockdale#	101	77	\$564,000
Burke	67	189	\$434,000	Hancock	54	290	\$312,000	Schley	6	#	\$22,000
Bultra	35	101	\$249,000	Harrison	69	137	\$327,000	Screven	85	277	\$417,000
Calhoun	51	504	\$143,000	Harris #	30	68	\$120,000	Seminole	79	398	\$354,000
Camden#	40	63	\$208,000	Hart#	35	76	\$174,000	Spalding	149	130	\$915,000
Candler	62	334	\$359,000	Heard	25	125	\$122,000	Stephens	104	213	\$423,000
Carroll	181	112	\$862,000	Henry#	159	77	\$1,130,000	Stewart	12	108	\$84,000
Catoosa#	27	28	\$184,000	Houston	319	150	\$1,300,000	Sumter	85	135	\$541,000
Chariton	25	135	\$155,000	Irwin	30	167	\$137,000	Talbot	13	99	\$148,000
Chatham#	443	98	\$2,600,000	Jackson	128	176	\$824,000	Taliaferro	3	#	\$10,000
Chattahoochee#	3	#	\$30,000	Jasper	21	101	\$92,000	Tattnall	77	206	\$362,000
Chattooga	58	125	\$355,000	Jeff Davis	27	105	\$147,000	Taylor	23	136	\$90,000
Cherokee#	168	65	\$975,000	Jefferson	82	269	\$546,000	Telfair	50	220	\$268,000
Clarke	297	193	\$1,850,000	Jenkins	42	249	\$221,000	Terrell	32	143	\$152,000
Clay	6	#	\$30,000	Johnson	35	194	\$148,000	Thomas	173	195	\$1,000,000
Clayton	486	124	\$2,840,000	Jones#	35	79	\$210,000	Tift	149	191	\$527,000
Clinch	30	221	\$148,000	Lamar	41	142	\$185,000	Toombs	102	190	\$553,000
Cobb#	1037	98	\$6,260,000	Lanier	18	138	\$68,000	Towns	17	107	\$64,000
Coffee	111	153	\$664,000	Laurens	155	172	\$941,000	Treutlen	22	175	\$215,000
Colquitt	102	125	\$431,000	Lee	54	137	\$320,000	Troup	217	184	\$1,020,000
Columbia#	65	38	\$575,000	Liberty	141	157	\$684,000	Turner	30	151	\$104,000
Cook	128	406	\$478,000	Lincoln	21	124	\$116,000	Twiggs	17	89	\$118,000
Coweta#	164	103	\$1,050,000	Long	16	81	\$52,000	Union	43	125	\$187,000
Crawford#	9	#	\$71,000	Lowndes	330	195	\$1,420,000	Upton	83	158	\$308,000
Crisp	104	246	\$529,000	Lumpkin#	30	82	\$126,000	Walker#	114	91	\$736,000
Dade#	10	33	\$55,000	Macon	34	129	\$147,000	Walton#	77	72	\$411,000
Dawson#	15	57	\$123,000	Madison	101	211	\$685,000	Ware	93	130	\$669,000
Decatur	102	188	\$483,000	Marion#	4	#	\$31,000	Warren	25	202	\$105,000
DeKalb#	1038	95	\$7,280,000	McDuffie	82	184	\$383,000	Washington	53	129	\$330,000
Dodge	55	150	\$203,000	McIntosh	23	115	\$145,000	Wayne	68	133	\$403,000
Dooly	79	373	\$380,000	Meriwether	57	123	\$220,000	Webster	7	#	\$36,000
Dougherty	313	163	\$1,714,000	Miller	29	231	\$102,000	Wheeler	11	123	\$71,000
Douglas	262	155	\$1,475,000	Mitchel	53	124	\$233,000	White#	29	87	\$167,000
Early	32	134	\$125,000	Monroe#	23	61	\$111,000	Whitfield#	169	104	\$1,010,000
Echols	5	#	\$30,000	Montgomery	21	144	\$110,000	Wilcox	47	314	\$184,000
Effingham#	29	41	\$128,000	Morgan	48	156	\$287,000	Wilkes	32	148	\$168,000
Elbert	59	151	\$282,000	Murray	64	100	\$398,000	Wilkinson	31	134	\$188,000
Emanuel	59	136	\$325,000	Muscogee#	329	90	\$2,230,000	Worth	71	153	\$363,000

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

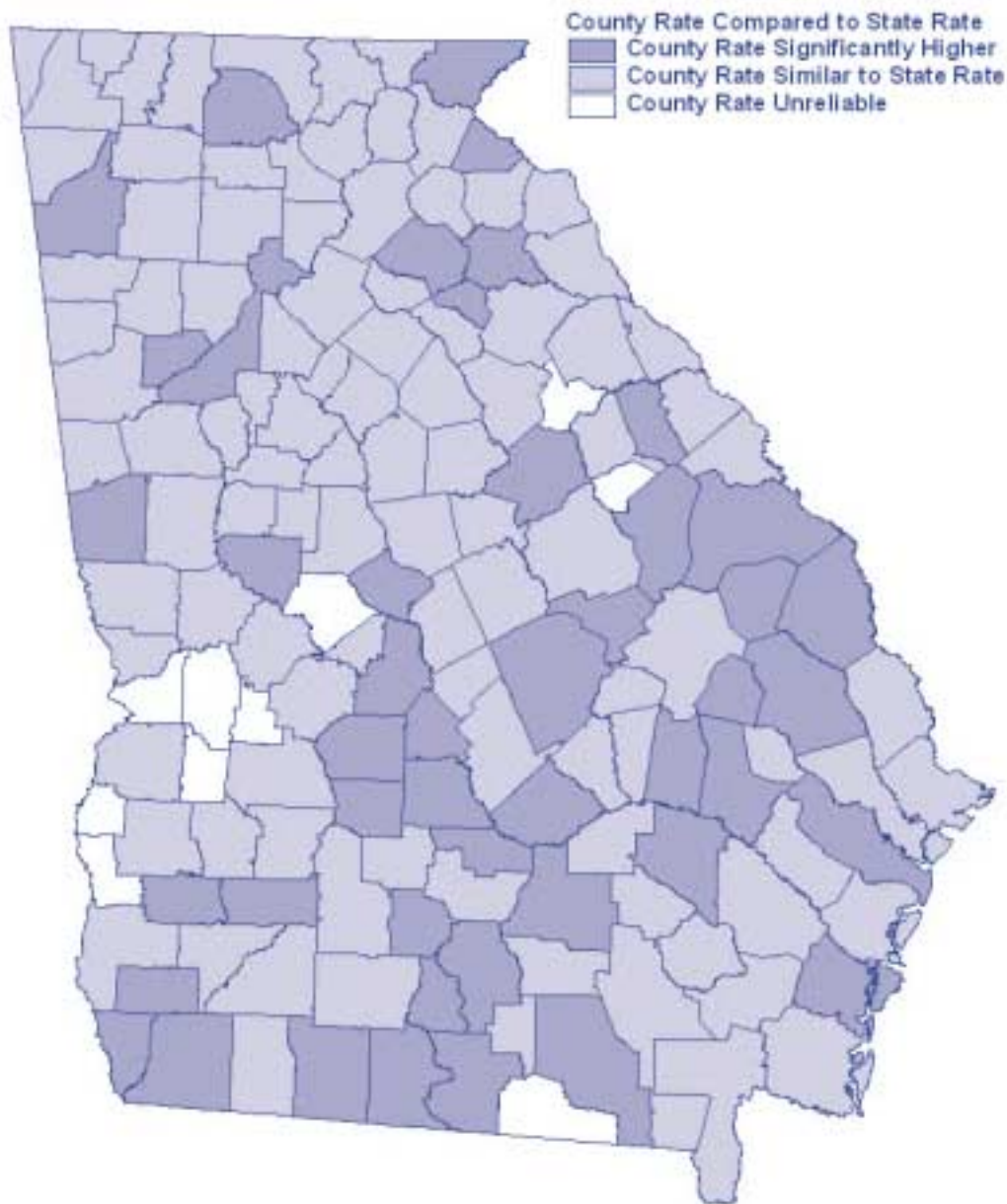
** Hospital Charges may differ from costs — Charges are based upon the hospital's full established rates. The amount a hospital is reimbursed is usually less than what is charged.

■ 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.nlm.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.nlm.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.

The source for national asthma death rates was: Centers for Disease Control and Prevention. Surveillance for Asthma - United States, 1960-1995. MMWR, 1998; 47(SS-1):1-28.



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.

ACKNOWLEDGEMENTS

GEORGIA DEPARTMENT OF HUMAN RESOURCES

Division of Public Health

Chronic Disease Branch

Family Health Branch

Epidemiology Branch

Chronic Disease, Injury, and Environmental Epidemiology Section

Gary Redding, Acting Commissioner
Kathleen E. Toomey, M.D., M.P.H., Director
James H. Brannon, M.S., M.Ed., Director
Roselyn K. Bacon, M.P.H., Director
Paul Blake, M.D., M.P.H., Director
Kenneth E. Powell, M.D., M.P.H., Chief

AMERICAN LUNG ASSOCIATION OF GEORGIA, INC.

Charles J. White, C.E.O.
Zenda Bowie, C.O.O.
Michelle D. Woods, Program Development
Teresa Iatridis, M.S., R.R.T.
June Deen, Vice President of Public Affairs

W.G. RAOUL FOUNDATION

Brenda Rambeau, President

Suggested Citation: Mellinger-Birdsong AK, Powell KE, Iatridis T. 2000 Georgia Asthma Report. Georgia Department of Human Resources, Division of Public Health, Chronic Disease, Injury, and Environmental Epidemiology Section, December, 2000. Publication number DPH00.65H



Asthma in Georgia 2000

American Lung Association
of Georgia, Inc.



Partial support for this publication has been provided by the W.G. Raoul Foundation