REPORT OF THE
JOINT COMMISSION ON HEALTH CARE

ASTHMA STUDY
PURSUANT TO HJR 729

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA

HOUSE DOCUMENT NO. 78

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Preface

House Joint Resolution (HJR) 729, agreed to by the 1999 General Assembly, directs the Joint Commission on Health Care (JCHC) to study the incidence, prevalence and impact of asthma on the Commonwealth's citizens. Specifically, HJR 729 (Appendix A) requires the Joint Commission to evaluate:

- the growing incidence and prevalence of asthma;
- the disease's adverse impact on African-Americans and other minority populations;
- the health costs associated with the treatment and management of asthma;
- the need for comprehensive asthma education programs for individuals, parents, and the medical and health care community;
- barriers to patient access to asthma medical care, including any recently developed medications;
- factors that may cause increases in asthma incidence, symptoms, and episodes in Virginia and the relative importance of such factors; and
- the need for an asthma public awareness campaign supported by the Virginia Department of Health.

HJR 729 also states that particular attention shall be paid to "the impact of asthma on Virginia's children and ways to educate parents, teachers, physicians, and children in the management of childhood asthma."

Based on our research and analysis during this review, we concluded the following:

- asthma is a serious and sometimes fatal chronic illness, particularly among children and African-Americans;
- asthma is the most common reason for hospitalization among young children but most hospitalizations for asthma can be avoided through appropriate management of the illness;

- the appropriate management of asthma, utilizing patient assessment and education, drug therapy, and environmental controls, is an emerging trend within the health care industry and the medical profession;

- there are many examples of successful asthma management programs, but a recent national study concluded that asthma management is falling far short of diagnosis and management guidelines;

- the United States Centers for Disease Control has recommended the development of state-level asthma control programs but only limited funding has been made available;

- the Virginia Department of Health has made some initial efforts to develop a coordinated asthma control plan, but a greater level of resources are needed;

- asthma management, including the administration of medication, is an issue within Virginia's schools; and

- an effective asthma management strategy for Virginia needs to be broadly-structured, based on sound disease surveillance techniques, and utilize well-designed interventions.

A number of policy options were offered for consideration by the Joint Commission on Health Care regarding the issues discussed in this report. These policy options are listed on pages 47-48.

Our review process on this topic included an initial staff briefing, which comprises the body of this report. This was followed by a public comment period during which time interested parties forwarded written comments to us regarding the report. The public comments (attached at Appendix B) provide additional insight into the various issues covered in this report.

On behalf of the Joint Commission on Health Care and its staff, I would like to thank the Virginia Department of Health and the other members of the Virginia Asthma Coalition for their cooperation and assistance during this study.

Patrick W. Finnerty
Executive Director

December, 1999

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Authority for the Study

House Joint Resolution (HJR) 729, agreed to by the 1999 General Assembly, directs the Joint Commission on Health Care (JCHC) to study the incidence, prevalence and impact of asthma on the Commonwealth's citizens. Specifically, HJR 729 (Appendix A) requires JCHC to evaluate:

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II.
Prevalence and Impact of Asthma

Asthma is a Chronic Lung Disease That Causes Severe Symptoms in Response to Exposure to a Variety of Environmental Conditions

Asthma is a chronic inflammatory disorder of the airways within the lungs. Asthma causes recurrent and distressing episodes of wheezing, breathlessness, chest tightness and nighttime or early morning coughing. These episodes are usually associated with widespread but variable airflow obstruction. During an asthma "attack", muscles around the airways constrict and less air passes in and out of the lungs. Although asthma is a chronic disease, it manifests itself through acute exacerbations.

People with asthma are highly sensitive to their environment, such that their airways are hyperresponsive to certain stimuli. A vast range of environmental factors are believed to be capable of causing an asthma attack. Potential asthma stimuli, commonly referred to as "triggers," include:

- household dust mites,
- cockroaches,
- dander from furred or feathered animals,
- fungi,
- pollens,
- mold and mildew,
- vapors from household cleaners,
- vapors from improperly ventilated gas stoves,
- tobacco smoke, and
- outdoor air pollution such as industrial emissions and vehicle exhaust.

In addition, respiratory infections can trigger asthma attacks, as can exercise and hyperventilation. Adverse weather conditions, like freezing temperatures and high humidity, have also triggered asthma attacks.

The specific underlying cause of asthma is unknown. However, asthma is believed to have a genetic origin. A high level of the antibody IgE in the bloodstream may predict the subsequent development of asthma. In addition, individuals whose parents have asthma are believed to be three to six times more likely to develop asthma than individuals whose parents do not have asthma.

There is no cure for asthma. However, it is estimated that about 25 percent of asthmatics "outgrow" the disease in adulthood, and no longer display symptoms even in the absence of active treatment. Nevertheless, the illness

never actually goes into remission, and such individuals remain genetically predisposed to the illness. In the presence of certain environmental triggers, such individuals may always be at some risk of developing active asthma symptoms. This is because the underlying inflammation that is characteristic of asthma may be present even when a person with asthma is not experiencing any active symptoms. While there is no cure for asthma, the disease can be effectively managed, and active symptoms reversed, such that an individual can lead a relatively normal life.

Asthma is One of the Most Prevalent Chronic Diseases in the United States

According to estimates prepared by the United States Centers for Disease Control (CDC), approximately 17 million Americans, or 6.4 percent of the total population, had asthma in 1998. According to the CDC estimate, which was based on data from the 1995 National Health Interview Survey, state-specific prevalence rates ranged from 5.8 percent to 7.2 percent. Virginia's estimated 1998 asthma prevalence rate was 5.9%, or 403,400 cases. According to the CDC estimate, Florida, Oklahoma and West Virginia were the only states with lower estimated asthma prevalence rates than Virginia.

Asthma is a highly prevalent illness, even in comparison to other types of chronic disease. This is particularly true, as illustrated by Figures 1 and 2, among relatively young individuals. For example, as Figure 1 illustrates, asthma is widespread among Caucasians and blacks who are less than 45 years of age. Among older individuals, on the other hand, illnesses such as heart disease, hypertension, and diabetes tend to be more prevalent. Figure 2 illustrates that asthma is particularly prevalent among individuals 0 to 17 years of age.

The National Prevalence Rate of Asthma Has Increased Significantly Over Time

According to the CDC, the number of Americans with asthma increased more than 75 percent from 1980 to 1994. The estimated prevalence rate of the disease increased from 30.7 cases per 1,000 population in 1980 to 53.8 cases per 1,000 population in 1994. Among African-Americans, asthma prevalence rates increased from 34 in 1980 to 57.8 in 1994. The rate among Caucasians increased similarly, from 30.4 to 50.8 cases per 1,000 population. Males and females both experienced similar rates of increase. The prevalence rate among males increased from 32 to 51.1. The rate among females increased from 29.2 to 56.2. During this time period, the disease became more prevalent across all age groups (Figure 3).

Figure 1

Prevalence of Selected Chronic Conditions – United States, 1995
Number of Reported Conditions Per 1,000 Population, By Race and Age

Condition	Caucasian < 45 Years	Caucasian 45-64 Years	Caucasian 65+ Years	Black < 45 Years	Black 45-64 Years	Black 65+ Years
Heart Diseases	31.0	126.9	315.4	24.4	93.2	261.4
Diabetes	7.1	55.8	118.6	8.8	121.4	218.9
Hypertension	30.1	207.8	394.7	46.1	344.7	533.5
Asthma	**61**	**52.5**	**37**	**69**	**60**	**70.1***
Cerebro-vascular Disease	1*	13.3	70.7	5.2*	27*	81.5*
Kidney Trouble	9.5	15.8	21.5	6.9*	15.5*	23.6*
Epilepsy	4.8	6.0	6.2	8.4*	12.7*	11.0*
Diseases of the Prostate	1.0*	16.2	51.2	0.6*	23.0*	36.6*
Hay Fever	102.2	120.0	78.3	75.0	94.5	39.4*
Chronic Sinusitis	132.5	182.1	156.2	119.4	198.4	146.1
Hemorrhoids	24.5	67.6	60.1	17.2	33.6*	20.1*
Bladder Disorders	9.7	20.2	52	6.3*	24.7*	22.8*

Note: * indicates prevalence statistics reported by the Centers for Disease Control which contain a caveat that they do not meet the "standard of reliability or precision."

Source: JCHC staff analysis of data from United States Centers for Disease Control/National Center for Health Statistics, Current Estimates from the National Health Interview Survey (October 1998).

Figure 2

Prevalence of Selected Chronic Conditions – United States, 1994
Number of Reported Conditions Per 1,000 Population, by Age

Condition	0 – 17 Years	All Ages
Heart Disease	18.1	85.8
Diabetes	1.4*	29.9
Hypertension	2.7	108.8
Asthma	***69.1***	***56.1***
Cerebrovascular Disease	0.9*	11.5
Kidney Trouble	3.4	13.5
Epilepsy	4.7	5.4
Diseases of the Prostate	0*	10.2
Hay Fever	60.5	100.7
Sinusitis	65.1	134.4
Hemorrhoids	0.4*	35.9
Bladder Disorders	4.4	14.4

Note: * indicates prevalence statistics reported by the Centers for Disease Control which contain a caveat that they do not meet the "standard of reliability or precision."

Source: JCHC staff analysis of data from United States Centers for Disease Control/National Center for Health Statistics, Current Estimates from the National Health Interview Survey.

Figure 3
Estimated Average Annual Prevalence Rate of Asthma
(Number of Self-Reported Cases Per 1,000 Population)

Age Group	1980	1994
0-4	22.2	57.8
5-14	42.8	74.4
15-34	27.7	51.8
35-64	28.1	44.6
65+	30.7	44.6
TOTAL	30.7	53.8

Source: Centers for Disease Control, Surveillance for Asthma, 1960-1995 (April 24, 1998).

The specific reasons for the rapid increase in asthma prevalence are not known with certainty. However, many possible explanations have been offered. Some experts believe that it reflects improved screening, diagnosis and reporting of the disease. However, many other experts cite increased air pollution; exposure to a greater number of chemicals in the home, school, and workplace; and to other factors believed unique to life in urban areas. Urban areas, and low-income members of minority populations within those areas, are commonly believed to be particularly prone to asthma. This is because such individuals are believed more likely to be exposed to a wide range of asthma triggers, and less likely to have access to timely, preventive medical care.

Asthma Can Be Fatal If Not Properly Treated and Managed

Asthma can result in death if it is not treated adequately. However, the number of people who actually die from asthma is relatively low. In 1996, 123 Virginians died as a result of asthma. There were 5,667 asthma deaths in the entire United States in 1996. By comparison, 733,000 Americans died from heart disease, and 539,000 from cancer during 1996. From 1993 to 1997, the number of asthma deaths in Virginia remained relatively constant:

- 1993 - 138 deaths,
- 1994 - 154 deaths,
- 1995 - 152 deaths,
- 1996 - 123 deaths, and
- 1997 - 133 deaths.

While relatively few individuals die from asthma, the death rate has been increasing rapidly over time. In 1980, the United States asthma-related death rate was 11.5 per million population. However, by 1995, it had increased to 17.9, a 55 percent increase in 15 years. A particularly unfortunate aspect of this trend is that experts believe that close to 90 percent of asthma-related deaths are preventable. Relatively few asthma attacks are life threatening, even those requiring hospitalization. However, death can occur when the asthmatic and his or her doctor fail to recognize the severity or speed of an asthma attack, thereby preventing the individual from receiving effective medical treatment.

African-Americans comprise a disproportionate share of asthma deaths both nationally and in Virginia. In 1995, the national asthma-related death rate for African-Americans was 38.5 deaths per million population, compared to 15.1 deaths per million for Caucasians. The 1997 Virginia asthma-related death rate was 34.2 per million for African-Americans, compared to 17.5 per million for Caucasians. During 1997, African-Americans accounted for 40 percent of all asthma-related deaths in Virginia, even though they comprised only 20 percent of the state population.

Virginia-Specific Asthma Prevalence Data Are Fairly Limited, But Hospital Discharge Data Are Available

Much of what is known about asthma prevalence in Virginia is currently derived from extrapolations of national data obtained from the CDC. These data, which are typically obtained via surveys such as the National Health Interview Survey, tend to have a considerable lag time between collection and accessibility by the state. This serves to somewhat limit the utility of these data for state and local asthma management purposes.

There have been a few Virginia-specific estimates of asthma prevalence. The Center for Pediatric Research, a joint program of the Children's Hospital of the King's Daughters and Eastern Virginia Medical School, examined the prevalence of asthma among three and four-year olds enrolled in Head Start programs throughout the Hampton Roads region during 1997. The study estimated an asthma prevalence rate of 19 percent among this population, which was predominantly African-American and from low-income families. In a separate study, the Center for Pediatric Research included a question concerning asthma on the 1997 Virginia Child Health and Immunization Survey. From the

survey data, a statewide asthma prevalence rate of 6.92 percent was estimated for all Virginia children 12 to 47 months of age.

Virginia hospital discharge data, compiled and maintained by Virginia Health Information, can provide some indication of the prevalence of asthma within the state. Specifically, it can provide an indication of how frequently Virginians are hospitalized for asthma, and which parts of the state tend to have the greatest hospitalization rates for asthma. Over the past several years, various analyses of hospital discharge data have provided strong indications that 1) asthma is a particularly prevalent disease within Virginia, and 2) that it is not managed nearly as effectively as it potentially could be.

Asthma is considered an "ambulatory-sensitive" condition. This means that it is a condition for which hospitalizations can largely be prevented with consistent, available outpatient care and adherence to treatment and self-care protocols. Other types of ambulatory sensitive conditions are hypertension, diabetes, psychoses, extreme prematurity/respiratory distress syndrome, acute poliomyelitis, and rheumatic fever. Hospital admissions for these types of conditions may indicate problems with health care access, or the presence of social issues that can negatively affect patient adherence to medical regimens.

Analysis of 1994 Hospital Discharge Data By Williamson Institute Found The Disease Highly Prevalent Among African-Americans, and Indicated Asthma Was Not Being Effectively Managed in Virginia

In 1996, Virginia Commonwealth University's Williamson Institute for Health Studies analyzed 1994 hospital discharge data. The study found that ambulatory-sensitive conditions accounted for only 2.69 percent of total hospital discharges in 1994. However, asthma accounted for 53 percent of all discharges for ambulatory-sensitive conditions, indicating that the disease was not being effectively managed in the home and outpatient settings. In all, there were 10,860 hospital discharges for asthma reported in 1994, or 1.76 per 1,000 population. The study also found that:

- about 29 percent of hospital discharges for asthma were for individuals less than ten years of age, and approximately 40 percent of discharges were for individuals less than 20 years of age;

- the discharge rate for African-Americans was approximately three times greater than that of Caucasians; and

- the discharge rate for females was greater than that for males.

In terms of asthma-related hospital discharge rates by locality, those localities with the highest rates tended to have relatively small populations.

However, Chesapeake, Norfolk, Portsmouth and Richmond – all with populations greater than 100,000 during 1994, were among the 30 localities with the highest discharge rates. Conversely, most asthma-related hospital discharges occurred in localities with large populations. However, Mecklenburg and Halifax, both with populations less than 30,000, were among the top 30 localities in terms of the absolute number of asthma-related discharges in 1994.

Analysis of 1995 Hospital Discharge Data by Center for Pediatric Research Found That Asthma Was the One of The Most Common Reasons for Hospitalization Among Children

Pursuant to a contract with the Virginia Department of Health, the Center for Pediatric Research performed an assessment of child and adolescent hospitalizations in Virginia. This study, based upon 1995 hospital discharges for individuals 0 to 19 years of age, found that there were 4,865 asthma-related hospital discharges reported for individuals in this age group, or 2.9 per 1,000 population. The study determined that asthma was one of the most common reasons for hospitalization among children, particularly among children five to nine years of age where it was the leading cause. The study also found that African-American children tended to be hospitalized for asthma at a greater rate than Caucasian children.

The study computed asthma-related hospital discharge rates for each locality, and compared the local rate to the overall state rate. Once again, the localities with the highest rates tended to have relatively small populations. Many of these localities were cities, and several others were rural counties located in Southwest and Southside Virginia. The ten localities with the highest local rates in comparison to the State asthma-related hospital discharge rates were: Emporia, Franklin City, Manassas Park, Buchanan, Norton, Hopewell, Richmond City, Buena Vista, Wise, and Colonial Heights. Emporia's local discharge rate was 9.5 times greater than the state discharge rate. Richmond City's rate was 2.9 times greater than the state rate. Figure 4 illustrates the top quartile of localities in terms of asthma-related hospital discharge rates, in comparison to the state rate of 2.9 discharges per 1,000 population.

Analysis of 1995 Hospital Discharge Data by the Virginia Hospital and Healthcare Association

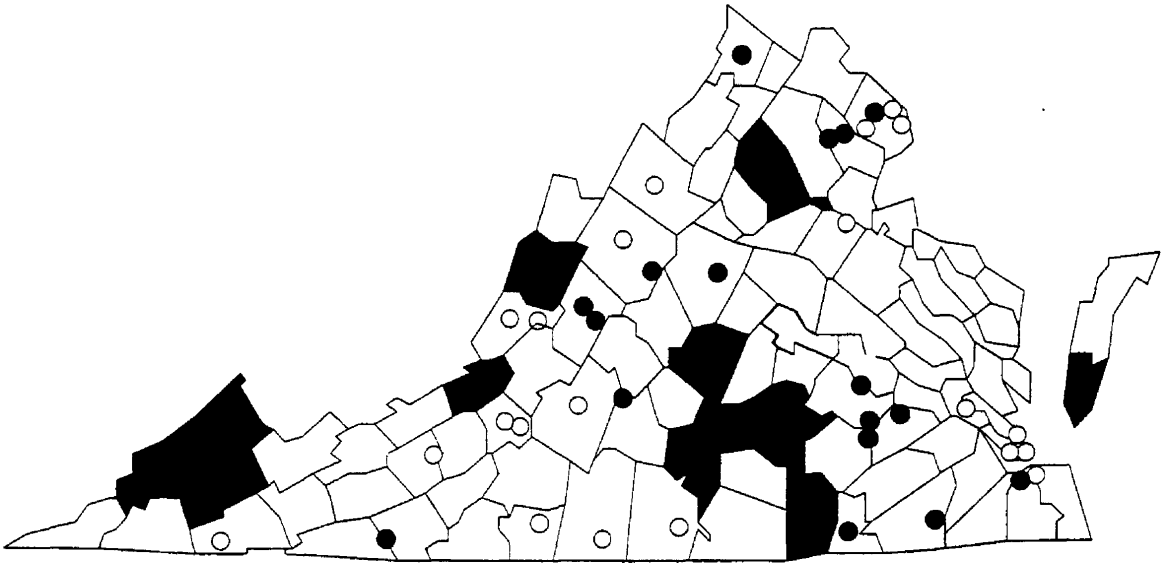
As part of its Indicators of Healthy Communities 1997 report, the Virginia Hospital and Healthcare Association (VHHA) examined 1995 hospital discharge data, across all age groups, for five ambulatory-sensitive conditions. The conditions examined were asthma, hypertension, diabetes, psychoses, and extreme prematurity/respiratory distress syndrome. The study calculated a statewide asthma-related hospital discharge rate, for the entire population, of 2.2 discharges per 1,000 population. The asthma-related discharge rate was higher

than those of three of the other four diseases analyzed. Discharge rates for the other four ambulatory-sensitive conditions were as follows:

- psychoses - 3.72,
- diabetes - 0.82,
- extreme prematurely/respiratory distress syndrome - 0.19, and
- hypertension - 0.18.

Figure 4

Virginia Localities With Highest Asthma-Related Hospital Discharge Rates for 0 to 19 Year Old Individuals During 1995 (Shaded Localities Had Highest Discharge Rates)



● Shaded circle indicates a city.

Source: JCHC staff analysis of hospital discharge data contained in An Assessment of Child and Adolescent Hospitalizations in Virginia (Center for Pediatric Research/Virginia Department of Health, 1998).

The report noted that 90 percent of hospital admissions for asthma occur in children under ten years of age.

Analysis of More-Recent Hospital Discharge Data Indicates That Asthma-Related Hospital Discharge Rates Have Remained Relatively Stable, and May Be Declining

According to hospital discharge data provided to JCHC staff by VHHA, there were a total of 14,150 asthma-related hospital discharges reported in Virginia during 1997. Individuals less than 17 years of age accounted for 57 percent of these discharges. Based on Virginia's estimated population as of July 1, 1997, the statewide asthma-related hospital discharge rate was 2.1 per 1,000 population during 1997. According to analyses prepared for the VHHA, overall asthma-related discharge rates remained relatively stable from 1996 to 1997, but increased for individuals 17 years of age and younger. The average length of stay for asthma patients tended to increase with age. However, based on VHHA's preliminary analysis of 1998 data, it estimates that the number of asthma-related in-patient hospitalizations actually decreased during 1998 (Figure 5).

The Fiscal Impact of Asthma Can Be Fairly Significant

During 1997, according to data provided by Virginia Health Information, asthma-related in-patient hospitalizations resulted in more than $250 million in charges. Individuals under 17 years of age incurred average charges of $4,968 and had an average length of stay of 3.26 days. Individuals 17 years of age and older incurred average charges of $9,472 over an average length of stay of 4.9 days. These charges were limited to in-patient hospitalization, and did not include emergency room treatment or physician services, as these data are not currently available from VHI. National estimates state that asthma is responsible for 15 million physician visits, 1.2 million emergency room visits, and half a million hospitalizations annually.

The Department of Medical Assistance Services (DMAS) has analyzed claims expenses incurred by the Medicaid program as a result of asthma. During calendar year 1998, DMAS paid $17.6 million for in-patient hospital, outpatient hospital, emergency room, and physician claims as a result of asthma. Of the total medical claims expense for CY 1998, 69 percent was for inpatient hospitalization. Asthma is the tenth most expensive diagnosis for DMAS. A variety of psychiatric diseases, hypertension, congestive heart failure, and diabetes pose greater medical claims expenses for Virginia Medicaid. The total amount of asthma related medical claims remained relative stable, at approximately $17.6 million annually, from CY 1996 through CY 1998.

Figure 5
Asthma-Related In-Patient Hospitalizations: 1996 – 1998

Category	Age Group	1996	1997	1998 (est.)
Number of Cases	0 – 17	6,693	8,120	5,817
	18 – 44	2,855	2,734	2,483
	45 – 64	1,758	1,796	1,757
	65+	1,562	1,500	1,815
	All Ages	12,868	14,150	11,872
Discharge Rate	0 – 17	4.1	4.9	3.5
	18 – 44	1.0	1.0	0.9
	45 – 64	1.2	1.2	1.2
	65+	2.0	1.9	2.3
	All Ages	1.9	2.1	1.8
Average Length of Stay	0 – 17	2.6	2.6	2.6
	18 – 44	3.3	3.1	3.1
	45 – 64	4.1	3.8	4.0
	65+	5.1	4.9	4.9
	All Ages	3.3	3.1	3.2

Source: Virginia Hospital and Healthcare Association.

In terms of in-patient hospitalization charges, asthma is not the most expensive condition to treat in Virginia. In its analysis of the 1995 hospital discharge data, the Center for Pediatric Research found that while the average charge for asthma was $3,564, other types of conditions had much higher charges associated with them. For example:

- manic/depressive - $17,275,
- assault trauma - $14,499,
- behavioral disorders - $12,353, and
- depression - $11,040.

However, since asthma is considered an ambulatory-sensitive condition, any significant level of hospital expense could easily be viewed an inefficient use of health care resources.

When viewed in terms of total health care costs, beyond merely in-patient hospital expense, asthma's overall impact can be more comprehensively assessed. Nationally, one widely-referenced study estimated the total economic cost of asthma to be $6.2 billion in 1990. This estimate included both direct medical expenditures ($3.6 billion) and indirect costs ($2.6 billion). Indirect costs were defined as including school and work absences, and loss of income due to premature death. The study estimated that asthma was responsible for 10 million school absences each year.

A more recent national study, completed in 1998, concluded that poor asthma management can take a high toll on individuals and their families through needless suffering:

- nine percent of people with asthma were hospitalized overnight during the prior year, 23 percent had to go to the emergency room, and 29 percent had other unscheduled care;

- people with asthma had an average of 75 percent more sick days that the general public;

- 49 percent of children and 25 percent of adults missed school or work during the prior year because of the disease;

- 64 percent of adults with asthma say their health limits their activity, compared to only 26 percent of the general public; and

- 30 percent of people with asthma report being awakened with breathing problems at least once a week.

One study by a medium-sized staff model HMO found that children with asthma incur greater health care expenses, through more intensive care utilization, compared to the general population of children receiving services. The study found that children with asthma:

- incurred 88 percent more costs,
- filled 2.77 times as many prescriptions,
- made 65 percent as many non-urgent care visits, and
- had twice as many inpatient days.

Another study of asthma-related health care costs estimated the typical annual expense, not including any in-patient hospitalizations, to be more than $2,500:

- four physicians visits ($600 - $800),
- 12 long term control, anti-inflammatory medication inhalers ($600)
- six quick relief, bronchodilator medication inhalers ($180), and
- one emergency room visit during flu season ($1,000).

This study estimated the cost of an asthma-related hospitalization to be $4,000 to $6,000.

Regardless of how much fiscal impact asthma actually has on the state and national health care system, the treatment and management of asthma has a broader quality of life issue that should not be overlooked. Since asthma is an ambulatory-sensitive condition, excessive hospitalizations can be viewed as indicative of failure to properly manage the disease thereby diminishing the quality of life of individuals who wind up being hospitalized. One physician interviewed by JCHC staff stated that "time, energy, and money are being spent in hospitals and emergency rooms where services are expensive and do not address the long-term reduction of symptoms." Since asthma is a chronic illness, and as such cannot be entirely prevented, the appropriate focus of the health care system should be one of proper management of the disease, outside of the hospital setting, such that it interferes as little as possible with an individual's activities of daily living.

III.
Treatment and Management of Asthma

The National Asthma Education and Prevention Program Has Issued Updated Guidelines for the Diagnosis and Management of Asthma

The National Asthma Education and Prevention Program (NAEPP) was initiated in March 1989 to address the growing problem of asthma in the United States. The goals of the NAEPP are to:

- raise awareness of patients, health professionals, and the public that asthma is a serious chronic health disease;
- ensure the recognition of the symptoms of asthma by patients, families, and the public, and the appropriate diagnosis by health professionals; and
- ensure effective control of asthma by encouraging a partnership among patients, physicians, and other health professionals through modern treatment and education programs.

To accomplish these broad goals, the NAEPP works with intermediaries including major medical associations, voluntary health organizations, and community programs to educate patients, health professionals and the public. The National Heart, Lung and Blood Institute of the National Institutes of Health is one the organizations that comprises the NAEPP. The ultimate goal of the NAEPP is to increase the quality of life for patients with asthma, and to decrease asthma-related morbidity and mortality.

In 1991, under the auspices of the NAEPP, an expert panel published *Guidelines for the Diagnosis and Management of Asthma.* In 1997, the guidelines were updated to incorporate the findings of new asthma research. The updated guidelines comprise recommendations for the diagnosis and management of asthma that are intended to help clinicians and patients make appropriate decisions about asthma care. However, the expert panel recognized that the clinician and patient will need to develop individual treatment plans that are tailored to the specific needs of the patient.

The NAEPP guidelines address four major areas:

- assessment and monitoring, which includes recommended mechanisms to establish a diagnosis, the use of four asthma severity classifications, recommended monitoring techniques, and defined goals for asthma therapy;

- control of factors contributing to asthma severity, which includes identification and avoidance of allergens to which individuals are sensitive;

- pharmacologic therapy, with emphasis on the use of long-term control medications shown to have anti-inflammatory effects; and

- education for a partnership in asthma care, which should begin at the time of initial diagnosis, be tailored to the needs of each patient, include a written daily self-management plan, focus on adherence to prescribed treatment regimens, and be integrated into every step of clinical care.

According to the NAEPP report, implementation of the recommended guidelines will likely increase some costs of asthma care by increasing the number of primary care visits, the use of asthma medications, environmental control products and services, and equipment. However, asthma diagnosis and management are expected to improve through implementation of the guidelines which should reduce the numbers of lost school and work days, hospitalizations, emergency room visits, and asthma-related deaths. Therefore, a net reduction in asthma-related health care costs should result. According to the NAEPP report, it is hoped that "the patient with asthma will be the beneficiary of the recommendations in this document...."

A Broad-Based Disease Management Approach Can Result in Cost-Effective Asthma Treatment

Many insurance companies, health plans, and managed care organizations within the health care industry have begun to incorporate the concept of "disease management" into their business practices in an effort to improve the quality of care that is provided while at the same time reducing overall expenses. Disease management includes:

- identification of individual patients with the disease via analysis of claims data;

- formulation of treatment protocols based on clinical guidelines;

- treatment intervention achieved through the support of primary care providers, achieved as a result of coordination by the disease manager;

- multi-disciplinary teams of allied health professionals, including nurse practitioners and pharmacists, to coordinate care, monitor patients, and handle psychosocial and lifestyle issues that are essential to the management of chronic illness; and

- performance measurement and outcomes studies using benchmarks and financial criteria; and

According to a 1998 survey published in *Healthcare Leadership Review*, 88 percent of managed care companies responding to the survey reported that they currently offer, or are implementing, disease management programs for asthma.

The National Committee for Quality Assurance (NCQA) is now focusing on the importance of asthma management for enrollees of health plans. NCQA has released draft technical specifications for the 2000 version of Health Plan Employer Data and Information Set (HEDIS). The draft includes new measures to gauge how well health plans are helping their enrollees manage chronic illnesses, including how well they help patients with asthma by prescribing appropriate anti-inflammatory medications, and how many of their asthma patients have had to be treated in emergency rooms.

The Department of Medical Assistance Services is Planning to Implement a Disease Management Program for Asthma

DMAS is planning to implement a disease management program that will address five disease states including asthma. Asthma was selected due to its high potential for reductions in medical treatment variation, potential for cost savings, and potential for improvements in drug therapy. The primary purpose of the asthma management program is to improve medical treatment and quality of life for Medicaid recipients who have asthma by identifying patients who appear to have problematic therapies. Potential opportunities for improvement in drug therapy will be identified and communicated to physicians and pharmacists. It is also expected net cost benefits will be achieved, through reduced hospitalization and emergency room treatment, even though drug expenses are expected to increase as a result of improved patient compliance with treatment regimens.

All Medicaid recipients in the fee-for-service program with documented asthma will be included in the initiative. Several performance indicators, based on DMAS prescription drug claims data, will be evaluated as part of the program, including: including:

- compliance with prescribed drug therapy;
- underutilization of recommended inhaled anti-inflammatory medications;

- overutilization of inhaled quick-relief medications; and
- potential asthma and chronic obstructive pulmonary disease- related drug interactions.

Pharmacists will be asked to submit patient encounter documentation every two weeks. In order to evaluate the program's impact on the general quality of life of the Medicaid population, a patient survey will be administered by pharmacists at 12 months and again at 24 months following the initial program encounter with each patient. Issues remaining to be addressed by DMAS include the adequacy of incentives designed to promote provider participation.

Pharmacists Cite A Lack of Reimbursement of Cognitive Services as A Barrier to Their Involvement in Asthma Management Efforts

Pharmacists interviewed by JCHC staff during the study reported that the pharmacy profession desires to be involved in asthma management efforts. Pharmacists believe that they can play a valuable and effective role in improving the ability of asthma sufferers to improve their disease through proper adherence to prescribed medication. Senate Bill No. 1154, enacted during the 1999 General Assembly Session, authorizes collaborative agreements between pharmacists and physicians which authorize cooperative procedures related to treatment using drug therapy, laboratory tests, or medical devices.

Pharmacists cite their inability to be reimbursed for cognitive services such as education as a barrier to widespread asthma management involvement within their profession. Cognitive services include patient consultation, assessment of drug therapy, development of care plans in consultation with a physician, patient education, monitoring, and follow-up. House Joint Resolution 493 of the 1997 General Assembly Session strongly encouraged all insurance companies, health maintenance organizations, and other third-party payers doing business in Virginia to "appropriately recognize the value of and adequately reimburse pharmacists for the provision of counseling services and other cognitive services."

There Have Been Many Successfully Designed and Implemented Programs to Effectively Treat and Manage Asthma.

Health care literature is replete with documented examples of well-designed intervention programs intended to more cost-effectively manage the disease (Figure 6). Some of these programs are based on disease management models, and are quite systematic and institutionalized throughout health care organizations. Others represent pilot programs that offer the potential for replication. All of the efforts, however, demonstrate the benefits of a broad,

Figure 6

Examples of Successful Treatment Interventions Within the Healthcare Industry Designed to Achieve Cost-Effective Asthma Management

Health Care Entity	Program Description	Program Outcomes
Trigon Healthcare Inc.	Registered nurses and health educators coordinate care. Statistical models analyze claims data to produce patient/member specific level reports identifying severity of condition, barriers to treatment compliance, and other complicating factors. Highly structured systematic intervention protocols including a 24-hour nurse telemedicine line and an integrated computer system that tracks each intervention of a patient with the system. Use of services and compliance with protocols are closely monitored, offering detailed information to providers to intervene and change the course of the disease.	$1.78 return for every $1 invested in disease management program. 44% decline in asthma-related emergency room visits, with condition upon visit also being less severe than average. Asthma-related emergency room costs declined 46%.
Harvard Community Health Plan	Outreach nurse provided one-on-one orientation and instruction in asthma management, medication, triggers, and use of inhalers and peak flow meters. An individualized treatment program was developed by the nurse, primary care pediatrician and, when appropriate, an allergist. The outreach nurse maintained personal or telephone contact with the families on a regular basis to assure understanding of and compliance with the treatment	Program patients had 79 percent reduction in emergency room visits and 86 percent reduction in hospital admissions, compared to control patients. The use of an outreach nurse (salary of $11,115) resulted in total savings of approximately $87,000 in costs, or nearly $8.00 in cost savings for each $1.00 in program costs.

Figure 6 (continued)

Examples of Successful Treatment Interventions Within the Healthcare Industry Designed to Achieve Cost-Effective Asthma Management

Health Care Entity	Program Description	Program Outcomes
CVS Pharmacy	Pharmacists were trained to ensure competency in therapeutic background of asthma, assessment and communications skills, and clinical monitoring. Patients were seen for 15-20 minutes every six to eight weeks. Patient adherence to medication and non-drug therapies was assessed. A peak-flow meter was used to assess and monitor patients. Patients were educated about asthma, medication administration, role of medication, non-drug therapy, and adverse effects. Information obtained was regularly communicated to physicians as warning of negative trends.	Total monthly health care costs for patients enrolled in the program at three intervention pharmacies were lower than costs for patients at five other CVS pharmacies serving as a control. Total monthly savings of $143 to $293 were estimated. The cost of the pharmacist-based education intervention was estimated at $27 per patient per month. The average total monthly prescription drug costs for asthmatics in the intervention program were $27 higher than for asthmatics in the control program.
Virginia Health Outcomes Partnership	Communications skills-building and asthma management seminars for providers participating in the managed care component of Virginia Medicaid program. Each provider was then provided with a list of asthma patients who had been in emergency room during the prior six months. Providers were encouraged to focus on these patients during the next year.	25 to 47 percent reduction in emergency room visits, and positive change in drug use profile

Source: JCHC staff analysis of asthma management literature, including Disease Management Industry (First Union Capital Markets, April 12, 1999).

multi-disciplinary approach to asthma management. The programs also suggest that while effective asthma management can be time and labor intensive, it offers large potential net benefit through reduction in hospitalization and emergency room treatment, as well as an improved quality of life for individuals with asthma.

Lack of Understanding Concerning the Nature of Asthma Serves to Promote Individual Non-Compliance with Treatment Regimens, And Continues to Pose A Barrier to Effective Asthma Management

While there are many asthma management success stories, effective asthma management continues to pose many challenges to the health care system. Since asthma is a chronic disease, day-to-day responsibility for management falls on the patient and the family or caregiver. However, asthma is also an episodic condition. Therefore, asthma attacks can occur, and resolve themselves, with no understanding on the part of the individual of what happened, why it happened, or how to prevent it from happening again.

Consequently, patient education is a critical component for managing asthma. Patients need to be educated to improve adherence to drug regimens, improve their techniques for using inhalers, increase their level of understanding of the disease, and boost their confidence in being able to manage asthma and lead a normal life. All too often, according to numerous individuals interviewed by JCHC staff, the expected outcomes of asthma care are set too low. It is important to recognize that asthma symptoms and costs be controlled. To be effective, educational messages about asthma need to be consistent, presented more than once, and delivered at a level appropriate for a person's culture, literacy level, and learning style. Education about the different types of asthma medication is essential. For example, many patients, particularly those who seek asthma care only in the presence of active symptoms, can be satisfied with the results of a quick-relief medication, such as albuterol. This type of asthma medication, which opens an individual's airways, allows the person to breathe normally and therefore feel better. However, in the absence of a long-term, anti-inflammatory medication, the person's chronic asthma will not be controlled over the long-term.

Unfortunately, educational messages about asthma may not be getting through, in any widespread, systematic manner, to large segments of the population. It has been estimated that asthma patients take, on average, only 50 percent of their prescribed medications. This appears to be particularly true for African-Americans from low-income families living in the inner-cities. Numerous studies have documented problems with

asthma management, and the resulting intensive use of expensive emergency room and hospital services, among this population:

- A study of 344 inner-city children who received asthma care at an emergency room found that 54 percent of families admitted non-adherence to prescribed drug regimen. Appointments for follow-up care were kept by 69 percent of those given an appointment in the emergency room, and by only 25 percent of those who were neither given an appointment or told specifically to make one. Only 33 percent of parents were able to keep their children away from known asthma triggers nearly all of the time. Only 37 percent reported avoidance of cigarette smoke.

- A study of 508 inner-city children with asthma in Baltimore and Washington D.C. found that 20 percent were either taking no medication, or were taking only over-the-counter medication. This undertreatment of asthma contrasts with the fact that 37% reported asthma severe enough to be associated with more than 20 days of school missed per month, and the fact that 37% had had an emergency room visit during the prior six months. More than half of the children over the age of nine self-administered their medication.

- A survey of 445 parents who brought a child to the emergency department of a large urban teaching hospital revealed that the parents held a number of health beliefs that interfered with the proper management of asthma. These included (1) periodic crises are to be expected and require emergency room service; (2) medicines are not efficacious; (3) asthma is an acute as opposed to chronic illness, and (4) asthma is not serious.

A Recent National Study Concluded that Asthma Management is Falling Far Short of Goals Established by the NAEPP

One of the largest and most comprehensive surveys of public, patient, and professional knowledge of asthma in the United States was conducted in 1998. Interviews were conducted with 2,509 individuals with asthma, or parents of children with asthma. In addition, 1,000 adults in the general public were sampled for control purposes. Finally, a national sample of more than 700 health care providers (512 physicians, 101 nurses, and 113 pharmacists) were interviewed as part of the study. The study reached five major conclusions about the current state of asthma in the United States:

- asthma management is falling far short of the goals established by the NAEPP guidelines, "indeed it would not be an exaggeration to say that asthma is out of control for many patients;"

- poorly controlled asthma symptoms cause hospitalizations, emergency room and urgent care visits, sick days, and activity limitations that cause many asthmatics to accept a much lower quality of life than need be;

- although physicians report that they are following NAEPP guidelines and patients are generally satisfied with their care, the level of care reported by patients does not meet current standards;

- there is widespread misunderstanding by patients of the underlying condition that causes asthma symptoms, as well as confusion about appropriate treatment and other aspects of asthma management; and

- people with asthma recognize the need for more public education about asthma.

According to the study, there were real disparities between what physicians say and what their patients say about asthma care that is provided. These discrepancies are suggestive of a communications gap between patients and providers:

- although 70 percent of physicians say they use spirometry to measure patient airflow on an ongoing basis, only 35 percent of people with asthma report having had a lung function test during the past year;

- although 83 percent of physicians say they prescribe peak flow meters to their patients with chronic asthma, only 62 percent of patients have ever heard of this device, and only 28 percent actually have one, and only 9 percent of patients use one at least once a week; and

- although 70 percent of physicians say they prepare an action plan for all, most or some of their patients on an ongoing basis, only 27 percent of patients say their physician has developed a written action plan for them.

The study concluded that many patients are treating their symptoms, as opposed to addressing the underlying cause of asthma:

- More than 60 percent of asthma patients who use a quick-relief inhaler say they use it at least three times a week, a frequency which is considered an indicator of poorly controlled asthma by the NAEPP guidelines.

- More than 90 percent of physicians agree that anti-inflammatory medications are essential or very important, but only 18 percent of asthma patients reported using anti-inflammatory medication during the prior month.

- 90 percent of physicians rated inhaled corticosteroids as very effective in reducing airway inflammation, but only 19 percent of patients reported taking inhaled corticosteroids in the past four weeks.

The survey also determined that there is widespread misunderstanding about the causes and treatment of asthma:

- only 34 percent of patients believe that the underlying causes of asthma can be treated;

- without being prompted, only nine percent of people with asthma said that the disease was caused by inflammation of the airways; and

- 63 percent of asthma patients who reported taking anti-inflammatory drugs were in fact taking drugs that do something else.

The fact that this study was based on a national probability sample suggests that problems with appropriate asthma management may well extend far beyond low-income, African-Americans residing in inner-cities. In fact, information obtained by JCHC staff during interviews with a number of health care providers during the study served to corroborate the view that the national guidelines are not being widely followed, and that asthma management is much less effective as a result.

IV.
Public Health Response to Asthma

United States Centers for Disease Control (CDC) is Attempting to Prevent and Control Asthma In Cooperation with State and Local Health Departments

The National Center for Environmental Health of CDC has developed an asthma prevention program. The program includes:

- using surveillance data to target resources and evaluate prevention efforts;
- educating health care providers, school personnel, and people who have asthma and their families about asthma;
- building partnerships to conduct local initiatives for controlling asthma; and
- conducting research to increase understanding of asthma and identify new strategies to control it.

The CDC's asthma prevention program fits within CDC's overall efforts to prevent chronic disease. According to CDC, an effective framework for preventing chronic diseases includes:

- promoting healthy behaviors,
- expanding the use of early detection practices,
- providing young people with high-quality health education in schools and community settings, and
- achieving healthier communities.

According to CDC staff interviewed by JCHC staff during this study, state-level asthma control programs need to be rooted in surveillance in order to obtain the prevalence data needed to plan and evaluate intervention activities, as well as for education purposes. Surveillance refers to the ongoing collection, analysis and interpretation of outcome-specific data in order to plan, carry out, and evaluate activities for protecting public health. Furthermore, according to CDC, broad-based

coalitions or partnerships are essential to state efforts. In addition, a central location for the coordination of intervention activities is important. Finally, according to CDC, state-level intervention efforts must include "addressing pertinent legislative issues and focusing on education...of health care providers, of persons with asthma, and of parents of persons with asthma."

The CDC issued six one-year surveillance grants in 1999. Each grant was for approximately $70,000, and is intended to support evaluation of state and local asthma surveillance efforts. Grants have been issued to state and local public health agencies in New York, Illinois, California, Wisconsin, Arizona, and Michigan. The Virginia Department of Health applied for one of these grants in 1998, but the application was unsuccessful. Based on the results of these programs, recommendations will be made about effective approaches to asthma surveillance. CDC plans to soon issue a request for proposals for three three-year grants of approximately $200,000 per year in order to support state asthma management programs. CDC's long-term goal is provide $1 million per state per year to support asthma management efforts.

A Childhood Asthma Initiative Has Been Announced by the Federal Government

In January 1999, a $68 million childhood asthma initiative was announced by the federal government. According to the announced initiative, the U.S. Environmental Protection Agency and the U.S. Department of Education will spend $8.4 million to expand school-based asthma education programs. Other items included in the initiative are:

- the EPA will spend $2 million to expand its research into the role that environmental hazards play in the onset of childhood asthma; and

- the Department of Health and Human Services (HHS) will provide $50 million in competitive grants to states who identify and treat asthmatic children enrolled in the Medicaid program in accordance with the NAEPP guidelines.

In addition, the EPA and HHS will invest $5.2 million in a national public information campaign to reduce children's exposure to environmental tobacco smoke.

A Few States Are Actively Engaged in The Development of Comprehensive Asthma Management Programs

CDC staff interviewed during the study identified New York, California, Arizona, and Utah as the states that are leading the way towards development of statewide, comprehensive asthma management programs. However, according to the CDC, the public entity that is farthest along in asthma management efforts is not a state at all but rather New York City. Even in New York City, however, only a small portion of the total population is currently served by asthma management intervention efforts.

New York State Department of Health Is Incorporating Asthma Management Into Its Healthy Neighborhoods Program.

New York's Healthy Neighborhood's program has four goals:

- primary prevention of lead poisoning,
- prevention of home carbon monoxide poisoning,
- prevention of burns and fire-related deaths, and
- reduction of childhood hospitalizations for asthma.

The asthma component was added as a new initiative in FY 1997.

The Healthy Neighborhoods program emphasizes broad, cross-cutting prevention strategies, with a focus on low-income families, to involve not only governmental agencies, but also community-based organizations. At the present time, eight local health departments network with county government, state agencies, community agencies, and local government. Under the program, the state issues grants to localities, which must be met with matching funds at the local level. The grants are intended to provide start-up funding designed to stimulate the commitment of local and private sector funds in the effort to achieve healthier neighborhoods. Each program includes a community outreach component. Door-to-door canvassers identify individuals and families in need of assistance and make referrals to existing community resources. The program costs the state about $1 million per year, and is funded from a federal block grant.

In terms of asthma management, the program appears to be meeting with some initial success. 951 asthmatics received an initial home intervention/education visit. Five of the eight local programs reported revisits to asthma patients during 1998. Three of the projects have demonstrated an improvement in asthma-related hospitalization rates.

New York state is also trying to increase its asthma surveillance capability. In particular, it is trying to collect emergency room data related to asthma treatment and is presently evaluating the use of emergency

room billing data for this purpose. In addition, the state is exploring the possibility of an asthma education campaign focused on physicians. The state health department is concerned that there may be a lack of coordination between physicians and school nurses in terms of asthma management. A particular source of concern is that many students with asthma may lack physician-developed asthma action plans on file with their school.

New York City Health Department Is Managing A Large Scale Effort to Control Asthma

New York City's asthma management effort is built upon capacity building and community health. There are four major components to the overall effort:

- improving the capability of the city's health care sector to deal with asthma;
- working with the city housing authority to provide asthma education training for staff of community health centers;
- supporting intensive asthma management intervention activities in seven communities believed to be particularly high risk in terms of asthma prevalence; and
- implementing a clinical event response system designed to identify children who are observed to be poorly controlled asthmatics, and then refer them to a "medical home" so that their disease can be more effectively managed.

The city has appropriated considerable financial resources to this overall effort, and currently spends about $6 million annually on its various asthma management activities.

The New York City Department of Health acknowledges that it does not have a good, locally-derived estimate of city-wide asthma prevalence. However, in an effort to collect better data, the physical examination form required for school enrollment has been revised to collect data concerning asthma diagnosis and symptoms. The city is also examining the use of emergency room billing data in order to obtain more complete hospital-based asthma prevalence data.

In order to improve the capability of the city's health care sector to deal effectively with asthma, the health department has initiated a number of initiatives:

- each city elementary school has a full-time nurse who has received asthma education training from the health department;

- asthma education seminars and materials, including those that can be used in the development of individualized asthma management plans, have been sent to medical providers who care for children;

- "train-the-trainer" asthma education programs have been conducted for providers employed by the city's public hospitals; and

- managed care companies who have contracted with the Medicaid program working with the health department to develop standardized materials and information concerning asthma management for distribution to Medicaid recipients and providers.

Arizona Asthma Management Efforts Began with a Statewide Planning Meeting

Arizona's asthma management efforts originated a few years ago at the initiative of the state health department and the state public health association. A group of 120 potential asthma stakeholders (the Arizona Asthma Coalition) convened for a one-day planning session in an attempt to reach consensus on what steps could be taken to better manage asthma within the state. The coalition issued a number of recommendations in August 1997, including:

- work in conjunction with managed care organizations to implement NAEPP asthma management and diagnosis guidelines;

- establish certification for primary caregivers, especially in the area of pediatric asthma management;

- target asthma management improvement services to areas with disproportionately high rates of asthma hospitalization;

- ensure each school has a full-time certified asthma care provider;

- implement clean air laws around the state, including a ban on smoking in the workplace; and

- implement control measures to reduce airborne particulates in order to help achieve EPA health standard for particulate pollution.

Since that time, one of the major efforts of the Arizona health department has been to develop a state-level asthma surveillance capability. Early on, information collected and maintained by HMOs was seen as a vital component of any state-level asthma surveillance system. Because 80 percent of Arizona residents with health insurance receive medical care through an HMO, it was believed that HMOs provide the most effective route to implement "best practices" for asthma management. The health department spent nearly one year working with the state's managed care organizations to develop agreed-upon data elements for asthma surveillance system. Following this, a data exchange agreement was negotiated between the health departments and the managed care organizations. Pursuant to the draft agreement, which is still being finalized, HMO data pertaining to asthma prevalence and treatment will pass through a third party (the state's HMO per review organization) to strip off HMO identifier information, and then be sent to the state health department to support asthma surveillance activities.

According to the state health department, school-based asthma management programs are vital components of the overall effort. One of the things that the state is attempting to do is assess what school nurses need to effectively manage asthma. One barrier that has been identified at the school level concerns the use of prescribed asthma medication. Many school districts prohibit children from taking asthma medications by themselves, and instead require that the medications must be administered by school nurse. According to the health department, such a policy runs counter to effective self-management of asthma.

Arizona's state-level asthma management efforts are currently supported by a $300,000 annual budget. According to the state health department, the budget consists of funds from the Robert Wood Johnson foundation grant, pharmaceutical companies, and a CDC surveillance grant. In addition, the Arizona legislature recently appropriated $120,000 to support the state's asthma management program beginning in FY 2000.

Utah Department of Health is Planning to Work Cooperatively with The Managed Care Industry to Better Manage Asthma

In May 1998, the Utah Department of Health convened a group of asthma stakeholders to identify ways to reduce the burden of asthma. Many suggestions were made, including:

- improve identification of people with asthma through early, accurate diagnosis, and by improving the ability of school personnel to identify children with asthma by implementing a standardized assessment tool;

- improve provider practice by appropriately identifying people with asthma, teaching patients to manage their symptoms, and developing written care plans;

- increase the number of settings where patients and parents can receive instruction or have instruction reinforced by educating school personnel, and promoting more inclusion of pharmacists as educators;

- improve the health care system's management of asthma by linking patients to a medical home, and providing insurance reimbursement for asthma self-management training; and

- improve the ability of those with asthma to self-manage their disease by focusing on environmental factors, written care plans, medications, and use of peak-flow meters.

During 1998, the Utah health department surveyed all managed care organizations in the state to ask them to identify issues on which they would like to work closely in partnership with the public health sector. Asthma management was the number one issue. Subsequently, the state health department convened a group of managed care organizations to determine how to work cooperatively with the public health sector to improve provider practices and patient self-management. An early focus of effort is to evaluate ways in which asthma management-related data collection can be standardized by the managed care organizations.

No state funds have been appropriated to support Utah's asthma management efforts. However, the state health department has established an internal working group to guide the effort. Staff have been drawn from the environmental, epidemiology, chronic disease, children with special health care needs units of the department.

The California State Legislature is Considering Legislation That Would Require the Department of Health To Establish A Comprehensive State Asthma Control Program

California is considering legislation to establish a separate public health program intended to reduce the incidence of asthma, and the negative health consequences associated with the disease. The bill currently under review has five primary components:

- declares as a matter of public policy that asthma has great public health significance, and recommends a community and environmental-based policy response;

- directs the state department of health to provide public and professional education on asthma management and clinical practice, and to provide grant funding for interventions designed to improve asthma management;

- directs the department of health to conduct asthma surveillance activities, assess medical interventions, and determine patient barriers to asthma care;

- directs the department of health to monitor clinical and public asthma management interventions, expand public and private partnerships, inform the state department of education and child care providers on pediatric asthma management, and convene an advisory panel of stakeholders; and

- appropriates $11 million from the state general fund to the department of health for purposes of administering the program.

According to officials with the California department of health, this legislation represents an effort by the state to develop a comprehensive, as opposed to piecemeal, asthma management structure. A similar bill was passed by the California legislature during the 1998 session, but was vetoed by the governor.

The Virginia Department of Health Plans to Work with the Virginia Asthma Coalition to Develop a State Asthma Management Plan

The asthma management efforts of the Virginia Department of Health (VDH) began in 1997. During that year, VDH convened an internal asthma workgroup consisting of representatives of school health, children with special health care needs, nutrition, chronic disease, epidemiology, and a local health department. In addition, VDH contracted with the Center for Pediatric Research for *An Assessment of Child and Adolescent Hospitalization in Virginia.* This report, as previously described, helped improve understanding of asthma prevalence within Virginia. In 1998, in close collaboration with the Virginia chapter of the American Lung Association, VDH organized the Virginia Asthma Coalition.

The Virginia Asthma Coalition is fairly broad-based and contains representatives from academic medical centers, private hospitals, physician specialists (allergists and pulmonologists), non-profit health care

providers, public school nurses, parent-teacher associations, the Virginia Department of Education, health plans, and pharmaceutical companies. At the present time, the coalition does not include representatives from the family practice/general practitioner segment of the medical profession, nor does it include a pharmacist. In addition, the coalition members are drawn almost exclusively from the Richmond and Norfolk areas. Rural areas of the state are not well-represented. There is a separate Asthma Coalition of Northern Virginia, which contains representatives of the same types of interest groups as are represented on the Virginia Asthma Coalition.

Currently, the VDH has not devoted any full-time staff resources, or any significant financial resources, to asthma management. Dedicated staffing is limited to 20 percent of the time of one FTE within the Office of Family Health Services' Division of Child and Adolescent Health. In addition, however, the VDH Minority Health Task Force is currently considering asthma for possible inclusion in its next series of recommendations to the Commissioner of Health concerning minority health care priorities. VDH has also collaborated with the Virginia Department of Social Services to fund a day care health consultant who, among other responsibilities, will provide asthma education for parents of young children and day care providers. A total of $205,000 from a federal child care development block grant will be used to fund this program. In addition, the VDH Office of Emergency Services has developed an asthma management training video in collaboration with the Medical College of Virginia.

During interviews with JCHC staff, VDH staff expressed interest in exploration of an integrated "healthy homes" approach to support asthma management efforts. Under such an approach home visitors currently utilized in the childhood lead poisoning program and other home-based programs could be employed to provide an initial asthma management and intervention capability for VDH. This type of an approach appears eminently sensible. If VDH staff are already in a home it is logical to provide some type of assesment and intervention for a highly prevalent chronic illness such as asthma.

A similar type of approach is currently being used in Richmond, by CHIP of Richmond and the Instructive Visiting Nurse Association (IVNA) under a grant provided by the Virginia Health Care Foundation. This program provides health, education, and support services in family homes to help parents learn ways of managing their young child's asthma. An IVNA nurse provides assessment of and education about the young child's condition, the parents' understanding of the disease and medical management of asthma, with special focus on the areas of difficulty the

parents are having. A CHIP family intervention specialist helps the family learn to work more closely with the child's doctor, make changes in the home environment or family routines that will improve the child's asthma, help provide transportation to medical appointments, and support the parents' efforts to problem solve. A key component of this approach is the establishment of trust between the family and the service provider, and recognition of the fact that non-medical issues within the home may need to be resolved as a pre-requisite to effective asthma management.

In order for an integrated home-based approach to asthma management to be implemented throughout the health department, local health departments will have to be supportive of the effort. In all likelihood, successful implementation of such an approach would require effective asthma management training for local health department staff. Additional staff resources might also be required. Finally, it will be important for any such program to be appropriately structured to recognize that asthma is a complex illness, and that successful management requires that a wide variety of medical, environmental and even social issues be addressed. Furthermore, in order to provide an effective intervention, reflected through positive outcomes, a trusting relationship between the home visitor and the client will need to be developed over time. Multiple visits may be required.

A VDH task force on children with special health care needs has been evaluating the total system of care for such children during the past year. Particular attention is being paid to chronic physical conditions such as asthma. According to VDH staff, the task force is examining the feasibility of using available federal funds to support system-wide projects that can benefit all children with special health care needs, instead of focusing on any one specific disease.

The VDH and the Virginia Asthma Coalition want to hold a Virginia asthma summit. The purpose of the summit would be to prepare a plan for a statewide asthma control and prevention program. The goal is to have a statewide plan ready in advance of what is hoped will be an infusion of new federal money into the state to support asthma control efforts. In the absence, either permanent or temporary, of any new federal funds, a policy consideration for Virginia will be the extent to which asthma management can, or should, compete successfully within VDH for available funding from the Preventive Health and Health Services (PHHS) federal block grant. Recently, $16,000 from this source was re-allocated to support asthma management efforts. This was the first PHHS funding that had been received. According to VDH staff, these funds will be used to purchase asthma education kits for schools, day care centers and local health departments.

Virginia Department of Health Has Developed Asthma Management Guidelines for Schools In Response to Concerns That Asthma Is A Major Illness Within Virginia's Schools

A major recurrent theme that emerged during JCHC staff interviews was a serious concern among public health and school nurse personnel that asthma is a major illness, and potentially disruptive condition, affecting the state's schools. Studies from across the country suggest a consistent pattern of problems that children with asthma encounter in school, particularly in dealing with school staff about issues of medical management and participation in physical activity. According to one study, "historically, most school systems have viewed their responsibility for student health as providing first aid and screening to identify health problems that are then referred to other sources of remedial care. The challenge of asthma falls in between – a chronic illness that requires management in the school." Other research studies have documented a prevalence of behavioral problems in children with asthma. Virginia's regulations governing special education programs for children with disabilities include asthma within the definition of children with disabilities.

The Virginia Department of Health, in collaboration with the Virginia Department of Education and Virginia Commonwealth University, issued Guidelines for Specialized Health Care Procedures in 1996. The document is intended to enhance the educational process by providing guidance to school administrators, nurses, teachers, and other staff members on the care of students with special health care needs, including asthma. Compliance with the guidelines is not mandatory. Federal and state laws and regulations, as well as local needs and resources, influence how the guidelines can be adapted for local use.

Asthma, according to the guidelines, "is a major illness within our schools." Effective management of asthma at school is critical because it can:

- promote an effective learning environment,
- promote optimal school performance,
- provide the necessary support in the event of an emergency, and
- enable students to achieve full participation in physical activities.

The guidelines state that a complete asthma management plan should be written for each student by the primary care provider in collaboration with the family and the school health case manager. The plan should include provisions concerning:

- environmental control measures to eliminate or minimize asthma triggers;

- administering medication by providing asthmatic students with safe and ready access to medications, and allowing qualified students to carry and self-administer prescribed inhaled medications as needed;

- monitoring of asthma;

- emergency care; and

- physical education and sports adjustments.

VDH Guidelines Address the Issue of Administration of Medication in Schools

The VDH asthma management guidelines state that "Schools should provide safe and ready access to medications for the student with asthma. Qualified students should be able to carry and self-administer prescribed inhaled medications as needed." However, the VDH general guidelines for administering medication in school state that in schools where school nurses are available on a daily basis, school nurses should assume responsibility for arranging the administration of medication to students. In the absence of a school nurse, it is recommended that the principal assume responsibility. The guidelines also recognize that parents often want to or have to administer medication to their children. According to the general guidelines for administering medication in school, prior to administering any prescriptive medication in a school setting:

- use of the medication should be authorized by a licensed prescriber;
- parental consent must be obtained; and
- the medication must be in its original container.

Determining who should administer asthma medication in a school setting is a particularly difficult issue. Perhaps the most difficult aspect of asthma medication policy is whether students should be able to carry and self-administer their own medicine. One of the major, underlying public policy decisions is whether the medical and quality of life benefits that a student with asthma would derive from quick, ready access to medication outweigh concerns and possible negative consequences associated with allowing students to carry medication on their person and possibly share it with other students.

According to the VDH guidelines, "many school divisions do not allow self-administration of medication except under special circumstances with a physician's order and under the supervision of a school nurse, principal, or principal's designee." The guidelines also state that school divisions should consider issues such as the student's maturity and responsibility level, medical need, and medication storage requirements when developing a policy for self-administration. According to the guidelines, some school divisions that allow self-administration use a "medication pass" system, which must be carried by the student at all times.

School districts have complete discretion in developing medication administration policies. Individuals interviewed by JCHC staff, including staff at the Department of Education, could not provide a good estimate of the percentage of school systems that permit self-administration. One individual thought that perhaps 50 to 60 percent of school divisions required administration in a school-based clinic. The American Academy of Allergy and Immunology has recommended that children whose parents and physicians judge have sufficient maturity be allowed to keep asthma medication on their person and self-administer. The American Academy of Allergy and Immunology believes that keeping medications in a nurse's office often means delayed treatment, and interferes with a student's proper use of medications. Several members of the Virginia Asthma Coalition interviewed by JCHC staff stated that self-administration by children with asthma is important for effective school-based asthma management. The states of Florida, Massachusetts, Missouri, and New Jersey have all enacted laws that permit students to self-administer medications under specified circumstances.

Amount of Asthma Education Provided in Schools Appears to Be Sporadic

One of the most popular means of educating school children about asthma is use of the Open Airways for Schools (OAS) program offered by the American Lung Association. The program was initially developed by Columbia University in the late 1980's, and received a Health Education Research award from the National Heart, Lung, and Blood Institute in 1992. The OAS program is designed for children in grades three through five, and is intended to be delivered in small groups of eight to ten children. The program, which is designed to be interactive and culturally-sensitive, covers topics such as warning signs for asthma, locating triggers, solving problems with medicine, ways to stay active, and deciding when to go to school. Each OAS lesson is 40 minutes long and is designed to be

easy for trained volunteers or school staff to present. The program does not have to be presented by a school nurse.

The OAS program kit costs $50.00. Only one kit is needed per school, as the materials are completely reproducible. However, the American Lung Association recommends that schools purchase additional support services to complement the kits, such as a 1 or 2-day training program for instructors, and additional educational materials. The American Lung Association states that the full-range of additional services bring the total cost of the OAS program to $500 to $600 per school. According to the American Lung Association, however, the basic cost of the OAS program is low compared to other asthma education programs that are available. For example, a program offered by the Asthma and Allergy Foundation of America costs $16 per child for two workbooks.

OAS has been implemented in 39 Virginia school districts (Figure 7). Conversely, 70 percent of Virginia's local school divisions have not implemented the program. The American Lung Association's goal is for the program to be implemented statewide. While OAS is not the only asthma education program available, a wide range of individuals interviewed by JCHC staff indicated that it is by far the most popular and widely used. Therefore, the lack of the program in most Virginia school districts raises questions about the extent of asthma education of any nature that is being provided in those schools.

WELLIGENT System Can Provide Asthma Surveillance Infrastructure Capability for Virginia Schools

In 1995, the Virginia Department of Health initiated development of a computerized school health information system. The initiative was prompted by inquiries from school nurses about the availability of school health services computer systems. VDH entered into a contract with the Center for Pediatric Research for system development.

A test version of the system, referred to as WELLIGENT, was completed in 1998. The system is a computer database designed to document student health statistics and school health services, bill and track reimbursable health services, and provide information resources to assist school administrators in making sound policy decisions. The system is currently being tested in nine school divisions. The test period is scheduled to end in June 1999, whereupon the system will be made available for use by all school divisions.

Figure 7

Virginia School Divisions That Have Implemented the Open Airways for Schools Program

Alleghany	Charles City
Arlington	Charlottesville
Charlotte	Chesapeake
Chesterfield	Fauquier
Danville	Gloucester
Giles	Hampton
Halifax	James City
Henrico	Loudon
Henry	Newport News
Hopewell	Norfolk
King George	Northampton
King William	Poquoson
Lynchburg	Portsmouth
New Kent	Roanoke County
Patrick	Smyth
Petersburg	Suffolk
Pulaski	Virginia Beach
Richmond City	Washington
Roanoke City	Williamsburg
	York

Source: American Lung Association, Virginia Chapter.

WELLIGENT contains five modules:

- school clinic,
- special education,
- billing,
- administration, and
- reports.

The clinic module allows school personnel to maintain a daily log of scheduled and unscheduled health care events, create individualized health plans from a stored template, and schedule and track administration of medications for an entire school year. The report module supports the production of a wide-variety of health care service reports at the individual school level, or aggregated to the school division or statewide level.

The WELLIGENT system has significant potential application for the ability of Virginia schools to more effectively manage asthma. This is because the system will support the identification and tracking of children diagnosed with asthma, and the automation of asthma management plans and medication schedules. Just as importantly, the report building capabilities of the system will support the development of system-wide, or statewide, asthma prevalence data among Virginia's school age population. The system will not provide a completely accurate assessment of asthma prevalence among the school age population, since it would not reflect individuals who either did not report their condition to the school, or who did not receive any care in the school.

Nevertheless, availability of the WELLIGENT system presents an opportunity to make a significant advance in development of the state's asthma surveillance infrastructure. According to the Center for Pediatric Research, it will provide the system free of charge to any school district that allows the Center for Pediatric Research to administer its Medicaid billing for certain reimbursable student health services provided in the school. The Center for Pediatric Research charges school divisions a service fee equal to 15 percent of the billed amount.

Most Virginia Public School Divisions Have At Least Some School Nurse Coverage, But Many Fall Far Short of Recommended Nurse/Student Ratios

According to Section 22.1-274 of the Code of Virginia, each school board may "strive to employ, or contract with local health departments for, nursing services...." The statute sets out the following recommended, but not mandated, nurse (RN or LPN) to student ratios:

- 1:2,500 by July 1, 1996,
- 1:2,000 by July 1, 1997,
- 1:1,500 by July 1, 1998, and
- 1:1,000 by July 1, 1999.

In 1996, VDH initiated the School Nursing Services Project to update its data on personnel providing nursing services in the public schools. In the Fall of 1996, VDH surveyed each of Virginia's school divisions. The VDH report, issued in April 1997, contained the following findings concerning Virginia's school divisions:

- 76 percent met or exceeded the 1:2,500 ratio;
- 66 percent met or exceeded the 1:2,000 ratio;
- 51 percent met or exceeded the 1:1,500 ratio; and
- 35 percent met or exceeded the 1:1,000 ratio.

The study also found that 16 school divisions did not have any full or part-time licensed nurses (Figure 8).

The Virginia Department of Health is currently re-surveying local school divisions concerning their school nursing services. The survey results will be available later in 1999. According to Virginia Department of Education staff interviewed by JCHC staff, some school districts, including Alleghany, Covington, Charlottesville, and Fauquier, have hired school nurses since 1997. It is not yet clear what progress has been made with regard to the recommended nurse to student ratios.

The 1998 General Assembly appropriated $1.6 million for FY 1999, and an additional $1.6 million for FY2000, as incentive payments for the provision of additional nursing services in the public schools. However, the funds could not be used for a school division to hire its first nurse, only to hire additional nurses. That is because the existing Standards of Quality school funding mechanism already provides funds for a certain level of school nursing services.

Figure 8

Virginia School Divisions Without Any Licensed Nurses, Fall 1996

Albemarle	Fauquier
Alleghany	Halifax/South Boston
Augusta	King and Queen
Bath	Lee
Buena Vista	Lexington
Colonial Beach	Mecklenburg
Covington	Rockbridge
Essex	Russel

Source: Virginia Department of Health (April 1997).

As far as asthma management is concerned, a nurse in every school, or at least in accordance with the recommended ratios, could not hurt and could only help. A greater level of trained, licensed medical professionals in the schools would certainly aid in all aspects of school-based asthma management. However, without a larger, comprehensive strategy for

more effectively managing asthma on a statewide basis, additional nursing coverage alone would not be a panacea.

Virginia Clean Indoor Air Act Contains An Exception That Allows Smoking During After-Hours Activities in Schools

The Virginia Clean Indoor Air Act, section 15.2-2800 et seq. of the *Code of Virginia.* prohibits smoking in a variety of locations.. Section 15.2-2801 prohibits smoking in "the interior of any public elementary, intermediate, or secondary school..." However, that section of the statute also contains the following exception: "Smoking may be allowed by a local school division in a designated area which is not a common area, including but not limited to, a classroom, library, hallway, restroom, cafeteria, gymnasium or auditorium after regular school hours so long as all student activities in the building have been concluded." According to staff in the VDH Tobacco Use Control Program, this section of the Code of Virginia is subject to varying interpretations by localities. For example, some consider a classroom a designated area in which smoking may be allowed. Other localities consider classrooms a common area in which smoking may be prohibited.

Many members of the Virginia Asthma Coalition interviewed by JCHC staff questioned the appropriateness of this statutory exemption, and cited its negative affect on asthma management in the schools. The view commonly expressed to JCHC staff was that this exemption runs counter to the accumulated body of scientific evidence concerning the residual affects of environmental tobacco smoke. According to VDH staff who work closely with tobacco control issues, traces of cigarette smoke remain present in the air for 20 to 28 hours. Tobacco smoke, as previously discussed, is one of the primary asthma triggers. A 1998 study by the National Institutes of Health found that second hand smoke increases the prevalence of asthma in children. The United States Environmental Protection Agency has estimated that between 200,000 and 1 million asthmatic children have their condition made worse by exposure to environmental tobacco smoke.

An Effective Asthma Management Strategy For Virginia Needs to Be Broadly-Structured, Based on Sound Surveillance Techniques, and Utilize Well-Designed Interventions.

Since asthma is a chronic illness, and given the numerous and complex ways in which asthma attacks can be triggered in individuals, it needs to be recognized that there is no one single factor that alone will enable Virginia to deal more effectively with this issue. Simple, piecemeal approaches will not produce widespread success. For example, while there is clearly a need for greater public awareness of asthma, and an

asthma public awareness campaign supported by VDH would be helpful, it would not be sufficient in the absence of other broad-based interventions linking the home, child care providers, schools, and medical providers (including pharmacists) of individuals with asthma.

Asthma is not a reportable illness under the provisions of state law and VDH regulations. As such, unlike for 72 other diseases, medical providers do not inform VDH of new asthma cases. Therefore, other means of surveillance need to be developed to obtain an accurate, comprehensive view of asthma prevalence and incidence in Virginia in order to more effectively manage the disease. As part of its unsuccessful CDC surveillance grant application in 1998, VDH elaborated on the importance of asthma surveillance. According to the grant application, "Although surveillance for communicable diseases has been a prominent feature of the public health infrastructure for almost a century, chronic disease surveillance is a relatively new and formidable challenge. Traditionally, disease surveillance depends upon reporting of individual cases by physicians, hospitals, and laboratories, but these methods do not lend themselves to the assessment of chronic disease morbidity and mortality." According to the grant proposal, an alternative system is being developed for chronic disease surveillance in Virginia. The alternative system relies on analysis of mortality, hospital discharge, and school-based health data that is already being collected.

An effective state-level asthma management strategy for Virginia would likely incorporate a number of key components, including:

- utilization of currently available systems infrastructure to improve asthma surveillance capabilities, and investigation of additional surveillance tools that are being developed by public health agencies in other states and at the national level;

- partnerships among medical providers, third-party payers, public health agencies, and schools designed to increase and improve asthma education opportunities and expand asthma management through well-targeted and well-designed intervention programs; and

- addressing related public policy issues that potentially affect the ability of individuals with asthma to self-manage their disease.

In order for any statewide asthma management strategy to be effectively implemented, a greater amount of state financial support than currently exists will be needed. Based on interviews conducted by JCHC staff, it appears that an initial maximum appropriation of $300,000 in state funds

could provide VDH with the ability to begin establishing a meaningful asthma management program for Virginia.

V.
Policy Options

The following policy options are offered for consideration by the Joint Commission on Health Care. However, these policy options do not represent the entire universe of options that the Joint Commission on Health Care may wish to pursue with regard to asthma management. Options II through VI are not mutually exclusive; the Joint Commission on Health Care could choose to implement any or all of these policy options.

Option I: **Take No Action.**

Option II: **Introduce legislation, with an accompanying budget amendment, giving the Virginia Department of Health the responsibility to develop a comprehensive statewide asthma management strategy which addresses, but is not limited to (1) surveillance, (2) public and professional education, and (3) monitoring clinical and public health interventions to identify best practices which can be replicated through partnerships with health care providers, third-party payers, and school personnel.**

Option III: **Introduce legislation requiring the Virginia Department of Health to incorporate an asthma management component into home visits currently performed by department staff under other departmental programs including early childhood lead poisoning prevention.**

Option IV: **Introduce legislation to provide children who are diagnosed with asthma greater access to medications in school, including the ability to carry prescribed asthma medications on their person and self-administer according to the order of a licensed physician, consistent with guidelines issued by the Virginia Department of Health for specialized health care procedures.**

Option V: **Introduce a resolution requesting the Virginia Department of Health, with assistance from the Virginia Department of Education, local school divisions, the Center for Pediatric Research, and the Department of Medical Assistance Services, to explore the feasibility, advantages and**

disadvantages of implementing the WELLIGENT school health information system, with a particular emphasis on the capabilities the system can provide for school-based asthma management.

Option VI: Introduce legislation to amend Section 15.2-2801 of the *Code of Virginia* by prohibiting smoking in the interior of any public elementary, intermediate, or secondary school after regular school hours.

APPENDIX A

HOUSE JOINT RESOLUTION NO. 729

Directing the Joint Commission on Health Care to study the incidence, prevalence, and impact of asthma on the Commonwealth's citizens.

Agreed to by the House of Delegates, February 7, 1999
Agreed to by the Senate, February 18, 1999

WHEREAS, asthma, a chronic respiratory disease which affects more than 14.6 million Americans, results in inflammation of the airways and can be triggered by various stimuli; and

WHEREAS, asthma affects an estimated 214,000 adults and 113,000 children in Virginia; and

WHEREAS, national statistics indicate that the prevalence of asthma has increased from 34.8 per thousand persons to 56.1 per thousand persons, which is a dramatic 61.2 percent increase in the incidence rate in the United States; and

WHEREAS, among children, asthma is the most common chronic illness and is responsible for 10 million days of school absenteeism annually; and

WHEREAS, asthma accounts for one in six of all pediatric emergency visits in the United States, with the estimated rate for emergency room visits among children under age five at 120.7 per 100,000, which is the highest rate of all age groups; and

WHEREAS, an estimated three million work days of people over 18 years of age are lost annually as a result of asthma; and

WHEREAS, asthma deaths have increased nationally in the last 17 years by 117 percent, from 2,598 in 1979 to 5,637 in 1995; and

WHEREAS, among African Americans, the asthma age-adjusted death rate was 3.8 per 100,000 in 1995, three times higher than the 1.3 per 100,000 rate for the Caucasian population; and

WHEREAS, the annual direct health care costs of asthma are approximately $7.5 billion and indirect costs, such as lost productivity resulting from asthma, are $3.8 billion, for a total of $11.3 billion per year in costs attributed to asthma; and

WHEREAS, 511,000 Americans were hospitalized for asthma treatment in 1995, representing an increase of 284 percent in hospitalizations for asthma treatment since 1979; and

WHEREAS, studies suggest that asthma can be controlled and managed with the proper patient education and prescribed medications; and

WHEREAS, asthma is a chronic respiratory illness which has enormous public health significance to the people of the Commonwealth; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the Joint Commission on Health Care be directed to study the incidence, prevalence, and impact of asthma on the Commonwealth's citizens. The Joint Commission shall evaluate, in the course of its study, the growing incidence and prevalence of asthma; the disease's adverse impact on African Americans and other minority populations; the health costs associated with the treatment and management of asthma; the need for comprehensive asthma education programs for individuals, parents, and the medical and health care community; barriers to patient access to asthma medical care, including any recently developed medications; factors that may cause increases in asthma incidence, symptoms, and episodes in Virginia and the relative importance of such factors; and the need for an asthma public awareness campaign supported by the State Department of Health. Particular attention shall be paid to the impact of asthma on Virginia's children and ways to educate parents, teachers, physicians, and children in the management of childhood asthma.

All agencies of the Commonwealth shall provide assistance to the Joint Commission, upon request. In addition, the Joint Commission may seek input from experts, private organizations, and the citizens of the Commonwealth as it deems appropriate.

The Joint Commission shall complete its work in time to submit its findings and recommendations to the Governor and the 2000 Session of the General Assembly as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents.

APPENDIX B

JOINT COMMISSION ON HEALTH CARE

SUMMARY OF PUBLIC COMMENTS: ASTHMA STUDY (HJR 729)

Organizations Submitting Comments

A total of five organizations submitted comments in response to the HJR 729 report on Asthma.

- Virginia Department of Health
- American Lung Association of Virginia
- Northern Virginia Asthma Coalition
- Virginia Pharmacists Association
- Virginia Association of School Nurses

Policy Options Included in the HJR 729 Issue Brief

Option I: **Take No Action.**

Option II: **Introduce legislation, with an accompanying budget amendment, giving the Virginia Department of Health the responsibility to develop a comprehensive statewide asthma management strategy which addresses, but is not limited to (1) surveillance, (2) public and professional education, and (3) monitoring clinical and public health interventions to identify best practices which can be replicated through partnerships with health care providers, third-party payers, and school personnel.**

Option III: **Introduce legislation requiring the Virginia Department of Health to incorporate an asthma management component into home visits currently**

performed by department staff under other departmental programs including early childhood lead poisoning prevention.

Option IV: **Introduce legislation to provide children who are diagnosed with asthma greater access to medications in school, including the ability to carry prescribed asthma medications on their person and self-administer according to the order of a licensed physician, consistent with guidelines issued by the Virginia Department of Health for specialized health care procedures.**

Option V: **Introduce a resolution requesting the Virginia Department of Health, with assistance from the Virginia Department of Education, local school divisions, the Center for Pediatric Research, and the Department of Medical Assistance Services, to explore the feasibility, advantages and disadvantages of implementing the WELLIGENT school health information system, with a particular emphasis on the capabilities the system can provide for school-based asthma management**

Option VI: **Introduce legislation to amend Section 15.2-2801 of the *Code of Virginia* by prohibiting smoking in the interior of any public elementary, intermediate, or secondary school after regular school hours.**

Overall Summary of Comments

The comments from each of the four organizations were generally favorable. Options II and IV received the greatest amount of support, with the American Lung Association of Virginia, the Northern Virginia Asthma Coalition, and the Virginia Pharmacists Association all expressing clear support. The Virginia Association of School Nurses requested that Policy Option IV be subjected to further evaluation. None of the commenters expressed support for Option I. Options III, V, and VI received varying levels of support from the four organizations.

Summary of Individual Comments

American Lung Association of Virginia

Jonathon Truwit, MD, Government Relations Chair of the American Lung Association of Virginia (ALA) commented in support of Options II, IV, and VI. In expressing support for Option II, Dr. Truwit noted that pre-school and adult asthma also poses serious public health challenges. According to Dr. Truwit, educational programs and intervention strategies for these populations should be a component of any comprehensive statewide asthma management strategy. In terms of Option III, the ALA took no position. Dr. Truwit noted that an accompanying budget amendment had not been offered as part of the option. However, "With adequate funding support, the Association would seriously reconsider this option." The ALA also took no position on Option V.

Asthma Coalition of Northern Virginia

Kebby Schweinsberg, Chair of the Asthma Coalition of Northern Virginia, commented in support of Options II – VI. According to Ms. Schweinsberg, the Asthma Coalition of Northern Virginia believes most emphasis should be placed on Option II. Ms. Schweinsberg noted that the issue brief "caught the essence of the problem of asthma in Virginia."

Virginia Pharmacists Association

Rebecca Snead, Executive Director of the Virginia Pharmacists Association, commented in support of Options II and IV. The Virginia Pharmacists Association "would urge the involvement of pharmacists in these efforts." Ms. Snead noted that while Option III is an ideal goal to aid in the management of asthma, it would only benefit those individuals receiving home visits. Ms. Snead also stated that Option VI, while concerning a desired goal, "is limited in scope and administratively would be difficult to coordinate the implementation."

Virginia Department of Health

E. Anne Peterson, M.D., M.P.H., Acting State Health Commissioner commented at considerable length concerning the report. Among her

comments were that, in addition to focusing asthma prevention and control efforts on the school-age population, attention must also be paid to pre-school children. According to Dr. Peterson, "it is critical to address intervention opportunities among pre-school children, even though they are more difficult to assess in disparate home and out-of-home care settings.

Dr. Peterson noted that if the General Assembly chooses to fund asthma management efforts within the Virginia Department of Health, as envisioned by Option II, the health department would select the most effective and efficient strategies. This would include incorporation of asthma interventions into other home-based visits where feasible. However, if Option III alone is preferred, "its lack of an accompanying budget amendment makes such streamlining of programs infeasible; without at least some funding, VDH would find it all but impossible to conduct statewide train the trainer sessions on asthma for home visitors and for those individuals to leave education materials in the home."

Finally, Dr. Peterson stated that the health department supports the use of WELLIGENT as part of an asthma surveillance and management system (Option V). However, according to Dr. Peterson, the feasibility of using WELLIGENT for asthma is already known. "What school systems need to consider is whether they are willing to allow data to be aggregated at the local, regional, and state levels while individual student confidentiality is protected." Dr. Peterson stated only through the use of such epidemiological data, thus gathered, can the efficacy of intervention programs be assessed and successful programs replicated. According to Dr. Peterson, "Local and regional data also allow available funds to be allocated according to demonstrated need."

Virginia Association of School Nurses

Phyllis F. Bricker, RN, BSN, Legislative Chair, stated that "options II, III, V, and VI are interrelated and well-researched." With regard to Option IV, Ms. Bricker noted "that the objective of assisting students in becoming competent participants in their own chronic illness management is valid". However, she also stated that there are many variables to be considered. Therefore, Ms. Bricker recommended that Policy Option IV "be fully evaluated by the Department of Education as well as the Department of Health and final

implementation should be up to the local School Board. Their decision should be predicated on the availability of school nurses, access to emergency transportation and treatment facilities, size of buildings and individual students and parents capabilities and needs. The policies approved by School Boards should be looked upon as a privilege granted to families. If the privilege is abused it would be subject to revocation."

JOINT COMMISSION ON HEALTH CARE

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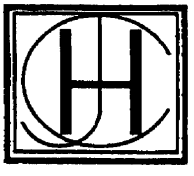

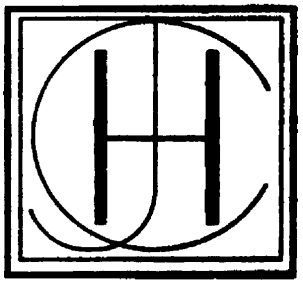

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