

# West Virginia Asthma Prevention Strategic Plan 2004-2009





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# In Dedication of

#### Donna Evans, 1935-2003

The West Virginia state asthma plan is dedicated to the memory of Donna Evans. Donna was a health educator at West Virginia Health Right and was the original chair of the West Virginia Asthma Coalition's (WVAC) Community Outreach and Education subcommittee. Her sudden death from an asthma attack during a medical emergency upset each of us. She will be missed.

Donna inspired all who worked with her. Knowing Donna, as one colleague stated, was "seeing the real deal in action." Donna joined Health Right in 1999 and was a founding member of WVAC in 2001. She used both positions to help uninsured and underinsured West Virginians. As a person with asthma, Donna had first-hand experience with the issues surrounding asthma management and education. During the 2003 annual statewide asthma retreat in Morgantown, W.Va., Donna directed WVAC's efforts to educate and treat those West Virginians who can't always afford healthcare.

Though Donna was committed to furthering the efforts of WVAC, asthma wasn't the only health issue to which she devoted her work. She wanted all West Virginians to lead healthy and productive lives. Donna encouraged patients with cardiovascular disease to eat better, lose weight and exercise. Throughout her career at Health Right, Donna advocated for the benefits of a smoke-free West Virginia and started a weekly cessation program known as "PufferSnuffer." She also started an outreach program in Putnam County to bring medications, flu shots and diabetes and obesity education to Putnam County seniors. Best of all, Donna added the special elements of fun and humor as she worked to improve the health status of all West Virginians.

A native of Butler, Pa., Donna graduated from West Virginia University with a master's of science degree in community health education. She was a member of Southridge Church, South Charleston, where she was active in Sunday school classes and the TLC Group. She will be missed by her family, her friends, her colleagues, and most dearly, the patients she served.



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### **Executive Summary**

Asthma is a chronic inflammatory lung disease characterized by recurrent respiratory symptoms such as coughing, wheezing, chest tightness, breathlessness, and variable airflow obstruction. It is a potentially deadly illness that is increasingly being recognized as a public health problem. According to estimates from the American Lung Association, approximately 20.3 million Americans are affected by asthma, and this figure is on the rise. The economic cost of asthma is high, with an estimated \$14 billion being spent by the United States in 2002.

In West Virginia in 2001it was estimated that 175,835 adults (12.5%) had at some point been diagnosed with asthma, ranking sixth nationally in asthma prevalence. An estimated 32,757 West Virginia middle and high school students in 2002 reported that they have at some point been diagnosed with asthma. Among chronic diseases, asthma is considered the leading cause of school absence.

Because asthma is now recognized as a significant health issue in West Virginia, a broad public health approach to addressing this disease is in order. The West Virginia Strategic Plan to Address Asthma represents a framework within which various organizations and individuals can collaborate to improve the health of West Virginians with asthma. This plan is the product of a cooperative effort between the West Virginia Asthma Education and Prevention Program (WVAEPP), the American Lung Association of West Virginia (ALAWV), and the membership of the West Virginia Asthma Coalition (WVAC), and describes priority areas for intervention falling into one of several categories:

- Data and Surveillance
- Asthma Awareness through Education
- Clinical Asthma Management
- Environmental Action
- Schools and Pediatrics
- Policy



#### Introduction

#### The Nature of Asthma

Asthma is a chronic inflammatory disease of the airways resulting in narrowing of the bronchial tubes, swelling of the bronchial tube lining, and mucus secretion that can block airways, causing recurrent episodes of wheezing, breathlessness, chest tightness, and coughing (1). Asthma "attacks" typically occur in reaction from triggers or irritants present in the environment. Common triggers include dust, pet dander, molds, pollen, tobacco smoke, or chemicals found in household products. Cold weather, physical exercise, and strong emotions can also precipitate an asthma exacerbation.

Experts are not sure why some people develop asthma, although it is believed that there may be a variety of factors involved including heredity, early exposure to infection, and certain psychosocial, environmental, and socioeconomic conditions. Despite the fact that researchers do not know enough about the causes of asthma to prevent onset of the disease, we do know that asthma morbidity and mortality are largely controllable. Improved patient education, proper medical management, environmental management, and public policy advocating for people with asthma are key in any public health approach designed to improve the lives of people with asthma.

#### The Burden of Asthma

Asthma is one of the most common chronic diseases in the United States. Based on the 2001 Behavioral Risk Factor Surveillance System (BRFSS), approximately 11.2% of the U.S. population has at some time been diagnosed with asthma (2). The total cost of asthma to the U.S. was estimated to be \$14 billion in

Asthma is one of the most common chronic diseases in the United States. 2002 (3). According to the U.S. Environmental Protection Agency (EPA), asthma is the leading cause of school absenteeism due to chronic illness (4).

Both asthma morbidity and mortality have increased substantially since 1980. Between 1980 and 1996, the prevalence of asthma in the United States increased by almost 74%. In 1999, there were an estimated 10.8 million physician office and hospital

outpatient department visits, 1.9 million emergency room visits, and 478,000 hospitalizations due to asthma. The rates for such health care utilization have been disproportionately higher among blacks, women, and young children (5). Although asthma mortality in the United States is among the lowest in the world, in 2000 there were still approximately 4,500 asthma-related deaths in this country (3). Moreover, the asthma mortality rate has risen over the past 20 years or so, especially in African-Americans and individuals age 85 and older.

The total cost of asthma to the U.S. was estimated to be \$14 billion in 2002.

As indicated in the document, <u>The Burden of Asthma in West Virginia</u> (6), West Virginia appears to be particularly hard-hit by asthma. Findings from this document and other recent findings show that:

- In 2001, 12.5% of West Virginia adults (representing an estimated 173,500 individuals) indicated that they had at some point been diagnosed with asthma. This exceeded the national rate of 11.2% and the state ranked 6<sup>th</sup> highest nationwide (2).
- In 2001, 9.3% of West Virginia adults reported that they currently had asthma. This exceeded the national rate of 7.2% and the state ranked 5<sup>th</sup> highest nationwide (2, 7).
- In 2002, 23.2% of West Virginia middle school students and 21.1% of high school students (an estimated 32,757 total) indicated that they have at some point been diagnosed with asthma by a doctor (8).
- Among those students who indicated that they had an attack within the last year (14,099 students), over 20% reported that they missed 11 or more school days in the past year due to their asthma (8).
- In recent years, hospitalization rates in West Virginia for asthma have been lower than the national rates, but the average length of stay for asthma-related discharges has been higher than the U.S. average (9, 10).
- In 1999, the rate of West Virginia Medicaid recipients who had at least one medical claim for a primary diagnosis of asthma was 25% higher among blacks versus whites; in addition, the rate was also higher in females compared with males and in the 21-64 year age group compared with other age groups (11).
- From 1997-2001, West Virginia Workers' Compensation claims for work-related asthma were greatest in the services, manufacturing, and mining, oil, and natural gas industries. The associated medical and indemnity compensation costs for this period totaled to about \$7 million (12).



#### (Footnotes)

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<sup>&</sup>lt;sup>1</sup> Costs incurred as of June 2003. Indemnity costs include salary replacement for lost wages and compensation for temporary/permanent and partial/total disability. The above costs are an underestimate of the true costs because several claims were still medically active at the time the data were obtained; further, indemnity costs are slow to develop.

#### The History of Asthma Control in West Virginia

In the year 2001, the Federal Centers for Disease Control and Prevention (CDC) announced the funding opportunity for a three-year planning grant entitled, "Addressing Asthma from a Public Health Perspective." In response, the West Virginia Tobacco Prevention Program (WVTPP) organized a collaborative effort to submit a proposal and West Virginia was one of several states to subsequently receive funding. It was this grant award that directly resulted in the formation of the West Virginia Asthma Education and Prevention Program (WVAEPP).

WVAEPP has pursued three fundamental goals in its planning period: the drafting of a report on the burden of asthma in West Virginia, the formation of a statewide asthma coalition with diverse membership, and the development of a strategic plan to address asthma in the coming years. The first two goals have been achieved; this strategic plan constitutes the final essential achievement of our planning period.

Prior to 2001, the American Lung Association of West Virginia (ALAWV) was already busy incorporating asthma interventions into their activities. For example, ALAWV has supported several asthma intervention and education initiatives throughout the state, including "Camp Catch Your Breath" (CCYB), "Open Airways for Schools," and other programs. CCYB is a five-day residential camp for 7 to 13 year-old children

"Camp Catch Your Breath" is a five-day residential camp for 7 to 13 year-old children who suffer from asthma. who suffer from asthma. At CCYB, children are taught asthma management skills while enjoying the activities of a summer camp, including swimming, crafts and a special campfire. CCYB is supported by five hospitals from around the state, including United Hospital Center, Cabell Huntington Hospital, Camden-Clark Memorial, Jefferson Memorial, Ohio Valley Medical Center, Thomas Memorial Hospital and St. Joseph's Hospital. Camp is fully staffed with a full-time pediatrician, pharmacist, nurse and nutritionist. Camp counselors are respiratory therapists and nurses. The program is in its thirteenth year, and approxi-

mately 70 campers have been enrolled each year. Open Airways for Schools, an EPA program, teaches children, ages 8-11, how to manage their asthma, warning signs of asthma, and triggers. It is a school-based program. ALAWV trains school nurses, respiratory therapists, physical therapists, teachers and parents to run the program. "Indoor Air Quality Tools for Schools," also an EPA program, is designed to give schools the information and skills they need to manage air quality in a low-cost, practical manner. The goal is to decrease health problems associated with poor indoor air quality. ALAWV works with the West Virginia Department of Education to provide the program.

ALAWV also recently started holding asthma awareness walks throughout the state. The first walk, held in Charleston, was attended by 300 people and raised \$15,000. The program has been expanded to several of West Virginia's larger cities, including Huntington, Wheeling, and Parkersburg. In Huntington, 250 people attended and raised \$11,000. In Parkersburg, 150 people attended and raised \$10,000. In Wheeling, 92 participants raised \$7,044 for asthma programs and research last year.



In addition to these activities, ALAWV facilitates the functioning of the West Virginia Asthma Coalition (WVAC) through sub-contract with WVAEPP. Currently, WVAC has nearly 150 individual members who represent over 60 organizations from diverse backgrounds such as state government, the clinical realm, the education system, and other health-oriented agencies. The Goals of WVAC are to:

- Educate patients with asthma, health care professionals, and the general public about the seriousness of asthma
- Promote/Ensure the appropriate diagnosis and management of asthma by health care professionals.
- Encourage patients with asthma to enter into the continuum of care by facilitating access to care.
- Encourage partnerships between patients with asthma and health care providers through modern treatment and education, in the interest of improving the quality of life for patients with asthma.
- Provide the latest information on asthma health, medication and medical treatment through educational activities, printed materials, and an internet website.

WVAC is now highly organized, and functions according to a set of well-defined by-laws. The group is co-headed by an elected chair and vice-chair, and has five sub-committees by topical area:

- Data Sharing
- Community Education and Outreach
- Asthma Management
- Environment
- Schools and Pediatrics

The WVAC subcommittees have been integral to the development of this document. Further, WVAC at large has taken a leading role in advocating student "access to inhaler" policy changes at the state board of education level, and recently was successful in pursuing commensurate legislation.

#### Process for the Development of the Strategic Plan

WVAEPP and its partners began work on West Virginia's strategic plan to address asthma at our state's second annual asthma retreat, which took place on October 2-3, 2003 in Morgantown. At this retreat, much of the agenda was devoted to break-out subcommittee meetings with the express mission of identifying important goals and objectives for inclusion in this plan. All participants were previously furnished with a copy of the document, *The Burden of Asthma in West Virginia*, and were instructed to use the data gleaned from that report to drive their thinking and priorities. Sub-committee members were asked to respond to a number of questions including:

- What are the most striking findings contained in the document, *The Burden of Asthma in West Virginia?*
- What further data is needed?
- What existing asthma-related activities/infrastructure do we have in West Virginia?
- What asthma-related activities/infrastructure are needed?
- What should the outline of West Virginia's strategic plan to address asthma look like?
- What West Virginia-specific issues and cultural considerations should be kept in mind during the development of this strategic plan?
- What recruitment priorities should WVAC have?



Members were instructed to consider the following Healthy People 2010 goals while formulating their recommendations:

Objective 24.1.	Maintain the asthma death rate at no more than 0.6 per 100,000 population 0-64 years of age.
Objective 24.2.	Reduce overall asthma morbidity as measured by a reduction in asthma hospitalization rate (primary or secondary diagnosis) to no more than 10.1 per 100,000 (excluding newborns).
Objective 24.3.	(Developmental) Reduce asthma morbidity as measured by a reduction in the annual rate of emergency department (ED) visits by 10%.
Objective 24.4.	Reduce the chronic lower respiratory disease (CLRD) death rate to no more than 67 per 100,000 population.
Objective 24.5.	Reduce the prevalence of current asthma among adults aged 18 years and older to 7.7% or lower.
Objective 24.6.	Reduce the prevalence of current asthma among adults with an annual income of less than \$15,000 to 12% or lower.
Objective 24.7.	(Developmental) Reduce by 10% the prevalence of lifetime asthma among African-American adults.
Objective 24.8a.	Reduce the proportion of youth in grades 6-8 who report asthma attacks in the past year to 9.3% or lower.
Objective 24.8b.	Reduce the proportion of youth in grades 9-12 who report asthma attacks in the past year to 7.9% or lower.
Objective 24.9.	Reduce the proportion of African-American youth in grades 6-8 who report asthma attacks in the past year to 12.4% or lower.
Objective 24.10a.	Reduce the proportion of youth in grades 6-8 with previous-year asthma attacks who report one or more school days missed due to asthma in the past year to 51% or lower.
Objective 24.10b.	Reduce the proportion of youth in grades 9-12 with previous-year asthma attacks who report one or more school days missed due to asthma in the past year to 51% or lower.

Immediately following the retreat, the workgroups' recommendations were compiled by WVAEPP into a single document and returned to workgroup members for review and further recommendations. This initial cycle of activity established the planning protocol and the roles and responsibilities of participants for the plan-building process: West Virginia Asthma Coalition (WVAC) membership as advisor, and WVAEPP and ALAWV as organizers and facilitators.

At a statewide asthma meeting on December 19, 2003 the advisory group was presented with the first draft of the strategic plan and asked to make suggestions to refine both the text and the goals and objectives contained in the "action plan" section. Again, the recommendations of the advisory group were incorporated into a subsequent draft, which in turn was sent back to the advisory group for review. At the conclusion of this meeting, a schedule of executive committee conference calls was made for the first six weeks of 2004, with the goal of further refining the plan by adding new objectives, structuring the document, and adding more specific strategies to be subsumed under each objective. In addition, it was decided that a section devoted to policy was necessary. By mid-February 2004, a comprehensive framework came into focus, with elements including:

- Maintaining and expanding current asthma surveillance efforts,
- Increasing public awareness of asthma,
- Ensuring provider compliance with NHLBI standards of asthma care,
- Improving the asthma-management skills of patients and their families,
- Reducing asthma patients' exposure to environmental asthma triggers, and
- Enacting policies that serve the best interest of those with asthma

Final recommendations and approval for the plan were obtained at another statewide meeting on March 19, 2004.

This document will be updated periodically. WVAEPP's many partners will continue to be vital to the evolution and further development of the strategic plan, and agenda space at meetings will continue to be devoted to planning activities. Communication among participants and between leadership and members will take place through regularly scheduled statewide meetings (four per year, including one annual asthma planning retreat), frequent executive committee meetings, and electronic correspondence, e.g. group e-mailing lists and conference calls. Participation of members will be sustained through these processes. As surveillance efforts bring in more data, participants will revise planning goals, objectives, and strategies accordingly.





#### **Action Plan**

#### Data and Surveillance

The overall data goal for WVAEPP and its partners is to maintain and improve the measurement of the burden of asthma in West Virginia. This surveillance information will be used for program planning, education, and to measure or document the impact of WVAEPP's efforts.

#### GOAL 1: Maintain existing surveillance activities.

Objective 1: Continue utilizing all data sources used to develop the document <u>The Burden of Asthma in West Virginia</u>, including the Behavioral Risk Factor Surveillance System (BRFSS), the Youth Tobacco Survey (YTS), hospital discharge data from the West Virginia Health Care Authority, asthma mortality data from West Virginia Vital Statistics, and Medicaid and Workers' Compensation claims data.

#### Strategies:

- Continue to partner with the West Virginia Health Statistics Center for data gathering.
- Contract with West Virginia University to continue collection and analysis of Medicaid utilization data.

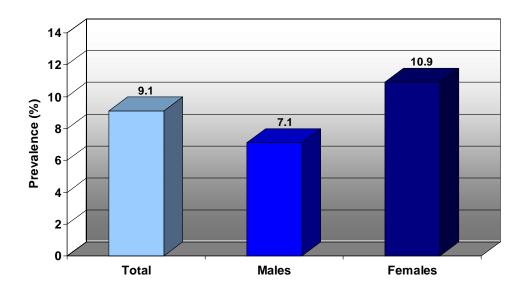
**Process Evaluation:** Progress in locating appropriate data sources and compiling appropriate data to enhance and develop <u>The Burden of Asthma in West Virginia</u> will be demonstrated by building a central repository to house the updated data.

Outcome Evaluation: An update to <u>The Burden of Asthma in West Virginia</u> will be published biannually.

**Impact Evaluation:** A data repository will be created that will accurately reflect the burden of asthma in West Virginia.



Figure 1: Current Asthma Prevalence by Gender: WV Adults 18+, BRFSS 2002



Objective 2: Disseminate data in appropriate formats for appropriate audiences.

#### Strategies:

- Determine priority policy audiences.
- Develop statistical briefs and educational "at-a-glance" documents tailored to appropriate audiences.
- Produce periodic newsletter highlighting newest data.
- Publicize newest data on web-based resource page.

Process Evaluation: Appropriately tailored documents will be produced.

Outcome Evaluation: Documents will be disseminated and explained to targeted audiences.

**Impact Evaluation:** Targeted audiences will have increased awareness/understanding of Asthma -related issues.



#### GOAL 2: Develop new surveillance system components.

Objective 1: Include optional asthma modules in future BRFSS surveys, beginning with the first year of enhanced funding.

#### Strategy:

 Collaborate with the West Virginia Health Statistics Center to include two optional asthma modules in the BRFSS.

**Process Evaluation:** Appropriate BRFSS personnel will agree to include the optional asthma modules in future BRFSS surveys.

**Outcome Evaluation:** Data will be collected using the optional asthma modules in future BRFSS surveys.

**Impact Evaluation:** Optional asthma modules in BRFSS surveys will provide more accurate understanding of the burden of asthma in West Virginia.

Objective 2: Utilize payer claims data and provider data (i.e., PEIA, CHIP, ER data, etc.)

#### Strategies:

- Use payer claims data to measure the burden of asthma in West Virginia.
- Analyze provider data to measure compliance with guidelines and other quality assurance indicators.
- Use payer claims data to measure healthcare costs associated with asthma.
- Use payer claims data to measure the asthma health services provided and not provided.

**Process Evaluation:** Measurement of compliance with guidelines and quality assurance indicators for providers will be undertaken.

Outcome Evaluation: Targeted intervention strategies to improve quality assurance indicators will be developed.

Impact Evaluation: The clinical management of asthma will be improved.

Objective 3: Acquire data on the uninsured/underinsured.

#### Strategies:

- Identify new data sources that collect data on the uninsured/ underinsured.
- Utilize existing data sources that provide data on this population (such as BRFSS, hospital discharge data)
- Analyze data obtained on this population.
- Identify disparities in health services for the uninsured/underinsured.

**Process Evaluation:** Various available data sources will be reviewed and cataloged, and new data sources will be identified. Agreement will be developed to ensure access to the data.

Outcome Evaluation: Health disparities of the uninsured/ underinsured will be measured and interventions for these targeted populations will be developed.

**Impact Evaluation:** Disparities in health services for the uninsured/ underinsured will be reduced.

Objective 4: Create county-level data reports.

#### Strategies:

- Identify data sources (i.e., Medicaid, BRFSS, PEIA, CHIP) that contain county identifiers.
- Compile data to enable county to county comparisons.

**Process Evaluation:** Summary report of the data sources will be provided.

Outcome Evaluation: Counties or regions with high asthma prevalence will be identified. Interventions that target counties or regions with high asthma prevalence will be developed or adopted.

Impact Evaluation: The burden of asthma in West Virginia will be reduced.



West Virginia Total – 9.0%
Highest: McDowell – 16.9%
Lowest: Barbour, Taylor – 4.7%

Wetzel Marion Taylor — 4.7%

Wetzel Marion Taylor — 4.7%

Wetzel Marion Taylor — 4.7%

Berkeley Taylor Harry Hampshire Resson Indgel Rackson Roane Braxton Pendleton

Wayne Lincoln Purnan Clay Webster 9.0%-10.9%

Raleight Randolph Pendleton 9.0%-10.9%

7.5%-8.9%

McDowell Mercer 4.7%-7.4%

Figure 2: Prevalence of Current Asthma by County: WV Adults 18+, BRFSS 2000-2002

Objective 5: Improve data on work-related asthma in order to better understand its impact on West Virginia and to identify high-risk populations within the workforce.

#### Strategies:

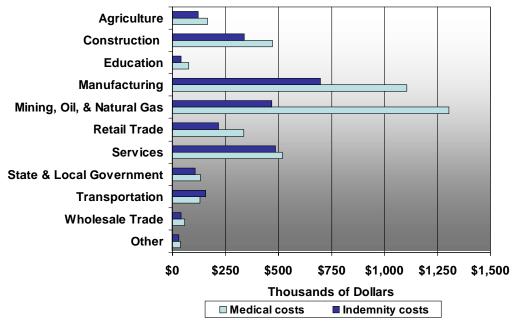
- Identify appropriate stakeholders for invitation to participate in the WVAC.
- Identify data sources for work-related asthma.
- Compile data on work-related asthma.
- Analyze work-related asthma data.
- Identify workers at high risk for development of work-related asthma.

**Process Evaluation:** Appropriate stakeholders on work-related asthma will become members of the WVAC. Cooperative agreements will be developed with entities that have relevant work-related data. Data will be compiled, analyzed, and reported in written format.

Outcome Evaluation: Report will be distributed on the burden of work-related asthma in West Virginia. Targeted interventions for work-related asthma will be developed.

**Impact Evaluation:** The burden of work-related asthma in West Virginia will be reduced.

Figure 3: Compensation Costs for Work-Related Asthma By Industry: WV Workers' Compensation Data, 1997-2001\*



<sup>\*</sup>Costs as of June 2003. Indemnity costs include salary replacement for lost wages and compensation for disability (temporary or permanent, partial or total).

Objective 6: Develop periodic summary reports of newest data.

#### Strategies:

- Identify critical elements for inclusion in summary reports.
- Produce statistical briefs on work-related asthma, youth asthma, and insurance utilization (PEIA, CHIP, Medicaid).

**Process Evaluation:** Data sources will be identified, obtained, analyzed, and reported in written format.

Outcome Evaluation: Reports will be published and will aid in strategy building for targeted interventions.

Impact Evaluation: The burden of asthma in West Virginia will be decreased.

# GOAL 3: Use newest data to determine priority areas to drive strategic planning.

Objective 1: WVAC will conduct an annual review of the current data reports to refine target populations and to identify gaps in care and needed interventions.

#### Strategies:

- Identify specific populations to prioritize.
- Identify areas for improving health services and quality assurance indicators.
- Analyze health services and quality of assurance indicators.
- Identify specific gaps in care for people with asthma.

**Process Evaluation:** Existing targeted populations and interventions will be compared with new findings. New implementation strategies and components will be reported on.

Objective 2: WVAC will review existing action plan yearly, to identify needed changes.

#### Strategies:

- Review reports from surveillance system.
- Determine if changes are needed in the action plan, as reflected by new surveillance data (i.e., Burden Report, etc.).
- Include action plan review as an agenda item at each annual WVAC retreat.

**Process Evaluation:** Changes in the action plan will be made as a result of current data.



#### Asthma Awareness Through Education

The overall asthma education goals of WVAEPP and its partners are to increase public awareness of asthma and to maintain broad partnerships to address the burden of asthma in West Virginia.

GOAL 1: Increase public awareness of asthma, including its symptoms, prevention of exacerbations, and treatment.

Objective 1: Identify all current awareness-raising activities in West Virginia.

#### Strategies:

- Convene workgroup to research current activities.
- Determine the feasibility of developing a survey to be given to licensed providers, hospitals, and statewide medical associations and academy chapters.
- Produce resource guide listing all current asthma related awarenessraising activities.

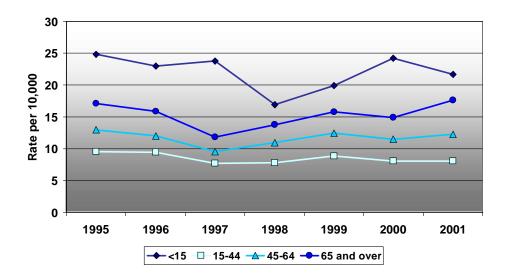
**Process Evaluation:** Appropriate people/resources needed to research current awareness-raising activities will be identified. All resources will be complied into a resource guide.

Outcome Evaluation: Resource guide will be promoted to select audiences.

Impact Evaluation: Increased awareness of asthma in West Virginia.



Figure 4: Asthma Hospitalization Rates, Primary Diagnosis, by Age Group (excludes newborns): WV Residents, 1995-2001



Objective 2: Maintain and expand existing activities that raise public awareness of asthma, and develop new activities to raise awareness of asthma.

#### Strategies:

- Promote existing activities such as WVAC's observation of World Asthma Day, ALAWV's Camp Catch Your Breath, local Asthma Walks, etc.
- Create a web-based West Virginia Resource Guide for the public and patients; include information on how to access services and programs related to asthma diagnosis and management, public education, and other reliable asthma information.
- Attempt to add resources to expand existing activities such as ALAWV's asthma camp.
- Establish WVAC work-group to develop creative new methods designed to increase the awareness about asthma in West Virginia.

**Process Evaluation:** WVAC workgroup will promote existing asthma-awareness raising activities, and develop web-based resource guide. Additional resources for the expansion of existing activities will be identified and secured.

Outcome Evaluation: New strategies for increased public asthma awareness will be developed. Existing asthma-awareness raising activities will be expanded.

Impact Evaluation: Increased public knowledge of asthma in West Virginia.

Objective 3: Disseminate findings from asthma tracking activities and efforts to the general public.

#### Strategies:

- Determine priority audiences, such as new parents, health-related organizations, etc.
- Incorporate data tracking findings into a web-based resource guide.
- Develop press releases for print and television outlets.
- Incorporate data tracking findings into periodic newsletters.
- Develop public service announcements utilizing a variety of outlets such as billboards, radio, etc.
- Make routine presentations at health-related functions, such as state health conferences.

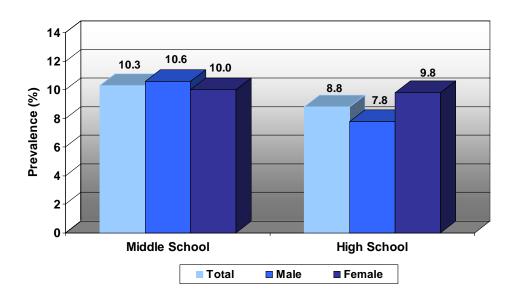
**Process Evaluation:** Priority audiences for data dissemination will be identified. Plans will be developed for a successful asthma information media campaign.

Outcome Evaluation: Priority audiences will receive findings from asthma tracking activities via various media channels.

Impact Evaluation: Increased knowledge of asthma in West Virginia.



Figure 5: Asthma Attack Prevalence by School and Gender: WV Youth Tobacco Survey, 2002



Objective 4: Develop or adopt existing asthma education interventions specifically aimed at day-care providers and school personnel such as teachers, coaches, maintenance workers, and school bus drivers.

#### Strategies:

- Identify existing asthma toolkits targeting school personnel and assess their effectiveness as well as any specific barriers to their effectiveness.
- Involve key partners in the development of improved asthma toolkits tailored to target audiences.
- Develop systems for on-site presentations/trainings to support the asthma toolkits.

**Process Evaluation:** Specific toolkits for day-care providers and school personnel will be identified. Appropriate means for dissemination of educational materials/instruction to these individuals will be developed.

Outcome Evaluation: Day-care/school personnel will receive the appropriate educational materials/instruction needed to better manage childhood asthma.

Impact Evaluation: Decreased childhood burden of asthma in West Virginia.

# GOAL 2: Maintain broad partnerships to address the burden of asthma in West Virginia.

Objective 1: Increase participation in the West Virginia Asthma Coalition.

#### Strategies:

- As new asthma control priorities are identified, ensure that experts in activities related to the priority areas are members of WVAC.
- Use partners and the media to communicate to civic organizations (such as within the church community, minority groups, etc.) and schools how WVAC efforts will reduce the burden of asthma in West Virginia.
- Develop press releases to highlight members of WVAC.
- Enlist partners outside the asthma community (coaches, business leaders, etc.) who can contribute to asthma control efforts.
- Promote WVAC at health-related events, e.g. SHEC, local health fairs, etc.
- Design, publish, and distribute brochures about WVAC to doctors, hospitals, and other targeted groups.
- Form WVAC workgroup to address work-related asthma.
- Form WVAC workgroup dedicated to policy development.

**Process Evaluation:** Current participation in the WVAC will be assessed. Targeted recruitment among underrepresented groups will occur. Current participation will be maintained. Media drives to promote the mission of the WVAC will be developed.

Outcome Evaluation: Enrollment numbers of the WVAC will increase from initial assessment. Any underrepresented population will be better represented. Media efforts will be implemented.

Impact Evaluation: Increased knowledge of asthma in West Virginia.





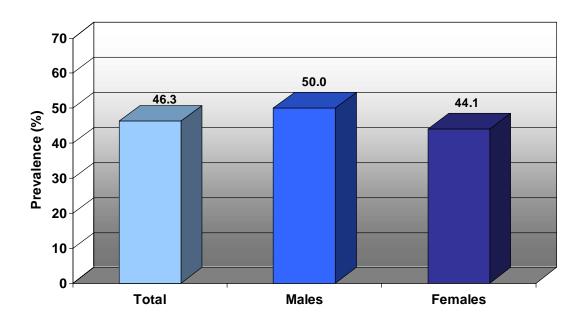
#### Clinical Asthma Management

The overall clinical asthma management goal of WVAEPP and its partners is to ensure that all West Virginians with asthma receive appropriate medical care from the healthcare system.

Although guidelines for the effective diagnosis and management of asthma have been developed by the National Heart, Lung, and Blood Institute (NHLBI), current data suggest that uniform implementation of recommended practices is not occurring in West Virginia.

The most pressing treatment-oriented problems to be addressed in West Virginia involve the lack of a consistent asthma curriculum for health-care professionals, inconsistent adherence to recommended treatment practices, and failure to incorporate asthma action plans in the treatment plan of those with asthma.

Figure 6: Percentage of Adults (18+) with Current Asthma Who Use A Daily Anti-Inflammatory Medicine Inhaler By Gender: WVBRFSS 2000





# GOAL 1: Promote standards for consistent and appropriate asthma care in West Virginia.

Objective 1: Determine the extent to which healthcare providers adhere to NHLBI treatment guidelines and identify perceived barriers to their use.

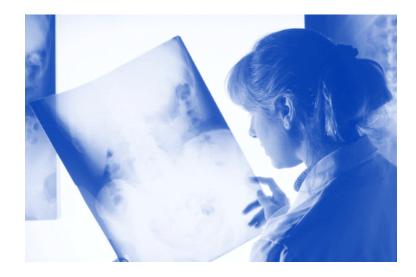
#### Strategies:

- Employ a survey or utilize focus groups to assess adherence to and perceived barriers to the use of treatment guidelines.
- Utilize survey or focus groups at prominent statewide practitioner meetings such as those held by the American Academy of Pediatrics and other groups.

**Process Evaluation:** Appropriate persons will be identified to develop survey tool or focus group questionnaires. Valid assessment tool will be developed.

**Outcome Evaluation:** Results from survey will be presented to appropriate parties. Strategies to address identified gaps in knowledge and barriers to implementation will be developed.

**Impact Evaluation:** Clinical management of asthma will improve leading to decreased burden of asthma in West Virginia.



Objective 2: Adopt and promote a consistent asthma curriculum for health professionals, stressing adherence to NHLBI treatment guidelines for asthma.

#### Strategies:

- Review existing curricula.
- Identify preferred curricula.
- Distribute key information to proper recipients, e.g., medical associations, academic institutions, hospital associations, and individual practitioners.
- Develop or adopt trainings for healthcare providers, stressing proper diagnosis and chronic care. This will include demonstrating spirometry measurement, written asthma action planning, and assessment of expo sure to allergens and irritants.
- Form a group of certified asthma educators throughout West Virginia, either by identifying and securing the services of existing educators, or by establishing ALAWV as an Educator Institute for training of certified asthma educators.
- Work with practitioner boards to offer continuing education credits to healthcare personnel for undergoing asthma training.
- Adopt the Health Disparities Collaborative for Asthma and implement it in select community health centers.

**Process Evaluation:** Scientifically valid trainings will be developed or adopted. Asthma educator group will be formed. Collaborative intervention will begin providing summary reports of clinical indicators.

Outcome Evaluation: Providers will develop increased awareness of standards of care for asthma management.

**Impact Evaluation:** Better clinical management will lead to decreased burden of asthma in West Virginia.



# GOAL 2: Provide to all those diagnosed with asthma the knowledge and skills necessary to manage the disease.

Objective 1: Develop or adopt existing trainings aimed at teaching asthma patients effective asthma management skills. This will include education on basic facts about asthma, the roles and proper usage of medications, environmental control measures, and peak flow monitoring.

#### Strategies:

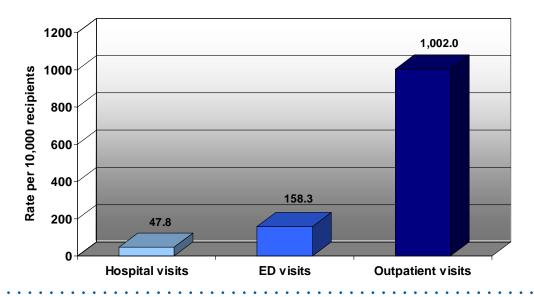
- Identify curriculum, including format and components.
- Develop systems for delivering trainings.

**Process Evaluation:** A panel of experts will be established to develop a scientific curriculum for asthma self-management.

Outcome Evaluation: Valid curriculum will be developed or adopted. Strategies for delivering trainings will be developed.

**Impact Evaluation:** Improved asthma self-management will lead to decreased burden of asthma in West Virginia.

Figure 7: Utilization of Medical Services with a Primary or Secondary Diagnosis of Asthma: WV Medicaid, 2002



Objective 2: Select and deliver NIH-consistent written materials designed to improve asthma patients' skills in self-management.

#### Strategies:

- Review existing materials.
- Create mailing list of targeted physician offices.
- Develop informational newsletter for distribution to patients with asthma or adopt existing materials and disseminate.

**Process Evaluation:** Newsletter with scientifically valid information on asthma self-management will be developed or adopted.

**Outcome Evaluation:** Asthma patients of targeted physicians will receive newsletter on self-management. People with asthma will develop improved self-management skills and better understanding of asthma.

**Impact Evaluation:** Improved asthma self-management will lead to decreased burden of asthma in West Virginia.

Objective 3: Increase the proportion of patients with asthma who possess equipment necessary for self-management, e.g., spacers, peak-flow meters, etc.

#### Strategies:

- Assess the degree to which lack of medical equipment is an issue for patients with asthma.
- Identify patients who do not have needed equipment.
- Identify resources and revenue sources for providing needed equipment items to those asthma patients who do not have them (e.g. pharmacological companies and insurance-providers).

**Process Evaluation:** Needs assessment related to asthma equipment issues will be performed. Revenue sources will be identified.

Outcome Evaluation: Strategies will be developed to make asthma devices uniformly available to all patients who need them.

**Impact Evaluation:** Increased availability of these devices will lead to better asthma management and decreased burden of asthma in West Virginia.

#### **Environmental Action**

The overall environment-related goal of WVAEPP and its partners is to ensure that West Virginians with asthma work, attend school, and live in environments with good air quality.

GOAL 1: Increase awareness of environmental asthma triggers among key community groups.

Objective 1: Adopt and deliver educational materials to key groups.

#### Strategies:

- Form workgroups to research and adopt educational materials, such as those produced by the Environmental Protection Agency.
- Identify and form collaborative relationships with key groups to be targeted.
- Develop and utilize targeted dissemination systems.

**Process Evaluation:** Scientific educational materials will be produced or adopted. Collaborative relationships will be formed to target educational materials.

**Outcome Evaluation:** Educational material distributed will increase awareness of environmental triggers. Strategies will be developed to decrease exposure to these triggers.

**Impact Evaluation:** Decreased exposure to triggers will lead to effective prevention of frequent asthma exacerbations and decreased burden of asthma in West Virginia.



#### GOAL 2: Decrease exposure to environmental triggers for people with asthma.

Objective 1: Increase implementation of environmental control measures in the home.

#### Strategies:

- Identify targeted families for home assessment and education.
- Develop a program involving environmental assessment of homes, such as through collaboration with the West Virginia Office of Environmental Health Services' Lead Program, or through a volunteer program sponsored by ALAWV.
- Develop/adopt and deliver educational materials on management of common household asthma triggers.

**Process Evaluation:** Educational materials on common household asthma triggers will be distributed to target audiences. Home assessments will be performed.

Outcome Evaluation: Educational material will increase awareness of household triggers. Strategies will be developed to decrease exposure to these triggers.

**Impact Evaluation:** Decreased exposure to triggers will lead to prevention of frequent asthma exacerbations among patients in West Virginia.

Objective 2: Increase implementation of environmental control measures in schools.

#### Strategy:

• Promote the use of the Environmental Protection Agency's Indoor Air Quality Tools for Schools (EPA IAQ-TFS).

**Process Evaluation:** Schools currently implementing the IAQ-TFS will be identified. Efforts will be made to determine barriers to the use of the IAQ-TFS.

Outcome Evaluation: School officials will better understand and more readily implement the IAQ-TFS toolkit.

**Impact Evaluation:** Improvement in the implementation of the IAQ-TFS toolkit will lead to decreased asthma exacerbations among school students in West Virginia.

Objective 3: Reduce exposure to outdoor air pollutants that contribute to asthma.

#### Strategy:

Create system to broadcast air quality alerts.

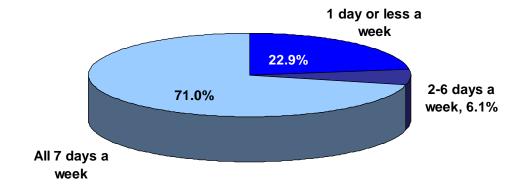
**Process Evaluation:** Workgroup will examine past efforts in West Virginia and other states in developing such alerts. Coordination efforts will begin will appropriate persons or agencies.

Outcome Evaluation: An asthma air quality alert broadcast system will be implemented. This will increase awareness of and reduce exposure to this trigger.

**Impact Evaluation:** Prevention of frequent asthma exacerbations will lead to reduced burden of asthma in West Virginia.

Figure 8: Frequency of Smoking inside Households with Adult Smokers and Children under Age 17:

WV Adult Tobacco Survey, 2002



GOAL 3: Increase the proportion of West Virginians with asthma who do not smoke tobacco and who are not exposed to environmental tobacco smoke.

Objective 1: Develop and implement strategies specifically aimed at reducing the exposure of children with asthma to tobacco smoke in their homes, and promote establishedinterventions that address tobacco.

#### Strategies:

- Facilitate referrals to smoking cessation programs.
- Promote ALA interventions such as Not on Tobacco (N-O-T) and Teens Against Tobacco Use (TATU).
- Collaborate with Tobacco Prevention Programs on clean indoor air and secondhand smoke issues.

**Process Evaluation:** Appropriate collaboration will be formed to facilitate cessation, referrals, and other interventions.

Outcome Evaluation: Prevalence of smoke-free homes will increase.

**Impact Evaluation:** Elimination of secondhand smoke as a trigger will lead to fewer asthma exacerbations and decreased burden of asthma in West Virginia.



#### Schools and Pediatrics

The overall Schools and Pediatrics goals of WVAEPP and its partners are to address asthma-related issues unique to youth and to ensure access to appropriate health care for the pediatric population.

GOAL 1: Reduce asthma-related school absences in the student population.

Objective 1: Implement an asthma education and management program, such as the American Lung Association's "Open Airways for Schools," in as many schools as is feasible.

#### Strategies:

- Identify schools for implementation
- Form necessary partnerships, e.g. with school nurses, at identified schools.
- Implement intervention.
- Develop system to track effectiveness via pre- and post- program school absences and asthma-related nurse encounters.

**Process Evaluation:** Appropriate schools for interventions will be identified. Student registry will be developed. Number and duration of training sessions will be documented.

**Outcome Evaluation:** Changes in pre- and post-test scores, school absences, and in clinical contacts for asthma will be determined. Increased student awareness on asthma and its management will occur.

**Impact Evaluation:** Improved asthma awareness and self-management will lead to decreased asthma exacerbations among school children in West Virginia.



**Objective 2:** Develop a pilot project in which asthma-related absences are tracked, and students who miss school due to asthma exacerbations are targeted for education and treatment plan evaluation.

#### Strategies:

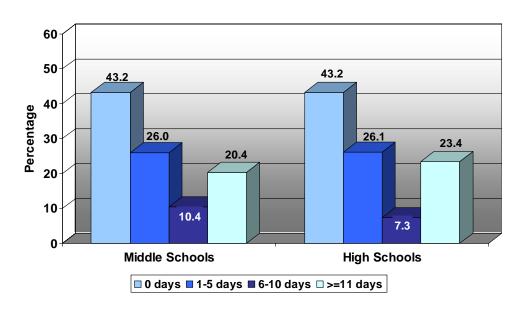
- Establish means of obtaining student volunteers to participate in the project.
- Determine parties responsible for tracking absences, and for contacting students for education and treatment plan evaluation.
- Develop questionnaire and key education/evaluation points.

**Process Evaluation:** Appropriate schools for interventions will be identified. Coordination will begin with officials from these schools. Questionnaire and key education/evaluation point development will be developed.

**Outcome Evaluation:** Tracking will identify problem areas such as unidentified triggers, poor understanding of asthma, or incomplete clinical management of asthma. Strategies will be developed to address identified problem areas.

**Impact Evaluation:** Addressing problem areas will lead to better asthma control and decreased burden of asthma in West Virginia.

Figure 9: Percentage of Students with Past-Year Asthma Attacks
Who Missed the Specified Number of School Days
Due to Asthma: WVYTS, 2002



# GOAL 2: Improve schools' resources for dealing with chronic disease in the classroom.

Objective 1: Form collaborative to work on strategies for enhancing school nurses' capacity to serve students with asthma.

# Strategies:

- Work with the legislative committee of the West Virginia Association of School Nurses and with the West Virginia Nurse Association to develop means of improving services to students with asthma.
- Collaborate with the West Virginia Department of Education, West Virginia
  Association of School Nurses, and other key partners to develop policies
  designed to increase the number of school nurses in West Virginia.
- Develop a WVAC position statement promoting policies aimed at increasing the number of school nurses serving in West Virginia.
- Partner with the West Virginia Department of Education in researching DASH School Health Project materials.
- Review national SNA materials to identify proven strategies for improving services to students with asthma.

**Process Evaluation:** Appropriate agencies will be contacted and their assistance sought in developing policy to increase the number of school nurses in West Virginia, and improved student asthma services. Appropriate WVAC members will collaborate in the development of a position statement supporting increased numbers of nurses in West Virginia.

**Outcome Evaluation:** Plan for improving student asthma services will be developed and implemented. Policy designed to increase the number of nurses in West Virginia will be drafted. WVAC support statement will be drafted.

**Impact Evaluation:** Improved student asthma management and increased nursing capacity within schools will lead to decreased asthma exacerbations among school children in West Virginia.

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Objective 2: Develop and implement a comprehensive school asthma management program in as many schools as possible.

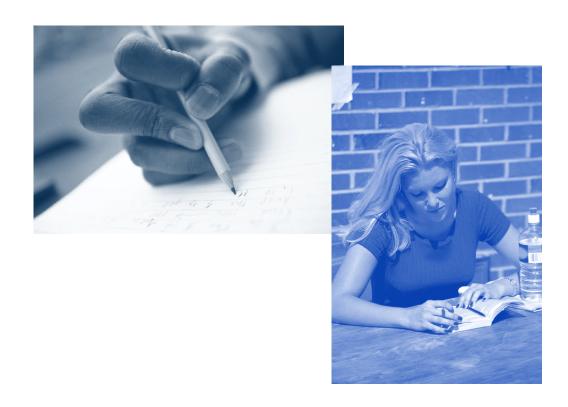
# Strategies:

- Identify key components for program.
- Obtain commitment from targeted schools.
- Partner with key personnel from each school.
- Assess and if necessary alter asthma-relevant school policies.

**Process Evaluation:** Commitments from interested schools will be obtained. ALAWV help will be sought in establishing the program using the Asthma-Friendly Schools Toolkit.

Outcome Evaluation: Program components will lead to fewer triggers, prompt action, and increased awareness about asthma. Changes in student absences and clinical contacts for asthma will occur.

**Impact Evaluation:** The program will lead to decreased asthma exacerbations among school children in West Virginia.



GOAL 3: Review, improve, and provide education regarding school-based policies and laws affecting the health of students with asthma.

Objective 1: Promote and provide education regarding policies that allow students to carry asthma inhalers in school.

## Strategies:

- Convene WVAC workgroup to review existing policies related to carrying inhalers and make recommendations for changes and or new policies/ legislation.
- Collaborate with the West Virginia Department of Education, the West Virginia Association of School Nurses, and other key groups to work on policy and rules development.
- Collaborate with the West Virginia Department of Education, the West Virginia Association of School Nurses, and other key groups to provide education about inhaler policies.

**Process Evaluation:** Policies will be reviewed and adjusted as necessary by collaborating with key policy-making agencies. Existing educational materials on students carrying asthma inhalers within schools will be adopted or developed. Strategies will be developed to provide education on the new policies.

**Outcome Evaluation:** New policies will lead to prompt administration of medication when required, decreased duration of episodes, and decreased disease severity. Educational materials will be distributed.

**Impact Evaluation:** Improved disease control will lead to decreased burden of asthma among school children in West Virginia. Specifically, frequency of asthma attacks resulting in emergency episodes will result from new policy.





Objective 2: Enact and promote policies that limit the unnecessary idling of school bus engines.

# Strategies:

- Convene WVAC workgroup to review existing policies related to schoolbus idling and make recommendations for changes and/or new policies aimed at reducing students' exposure to bus exhaust.
- Collaborate with the West Virginia Department of Education, the West Virginia Office of Environmental Health Services, and other key groups to work on policy development.
- Provide education on anti-idling policies.

**Process Evaluation:** Policies will be reviewed and adjusted as necessary by collaborating with key policy-making agencies.

Outcome Evaluation: New policies will lead to decreased idling and hence better air quality, thus eliminating an important environmental trigger. Strategies will be developed to educate people about the new policies.

**Impact Evaluation:** Improved air quality will lead to fewer exacerbations and decreased burden of asthma among school children in West Virginia.

Objective 3: Provide education regarding and encourage the use of established school-based asthma interventions.

# Strategies:

 Collaborate with WVDOE and the West Virginia Association of School Nurses to develop policy requiring implementation of the American Lung Association's Open Airways for Schools program.

**Process Evaluation:** American Lung Association will develop an implementation plan for working with schools to teach the Open Airways programs.

Outcome Evaluation: American Lung Association will reach the targeted number of students and schools.

**Impact Evaluation:** American Lung Association will evaluate participants to measure increase in knowledge.

Objective 4: Enact policies that promote good indoor air quality in schools.

# Strategies:

- Form workgroup to identify the key school-based IAQ issues to be ad dressed, e.g., cleaning chemicals, pest control treatments, etc.
- Form collaborative relationships with key partners to develop policies that promote good IAQ.
- Provide education on IAQ policies.
- Collaborate with WVDOE and the West Virginia Association of School Nurses to develop policy requiring implementation of EPA's IAQ Tools for Schools.

**Process Evaluation:** School policies will be reviewed and adjusted as necessary by collaborating with key school officials and forming an IAQ workgroup. Appropriate agencies will be contacted and their assistance solicited for developing policies.

**Outcome Evaluation:** New policies promoting clean indoor air within schools will be developed and implemented, emphasizing the elimination of environmental asthma triggers. Strategies will be developed to educate students and staff about the new policies.

**Impact Evaluation:** Improved indoor air quality will lead to fewer exacerbations and decreased burden of asthma among school children in West Virginia.



## **Policy**

The overall policy goal of WVAEPP and its partners is to support, develop, and advocate policies that promote the health of people with asthma.

GOAL 1: Promote reimbursement for nationally recognized components of asthma care, including patient education and durable medical equipment.

Objective 1: Promote reimbursement for providers' patient education activities.

# Strategies:

- Identify current practices and barriers regarding reimbursement and make these more widely known.
- Establish a billable code for patient education.
- Convene representatives from West Virginia's major insurers to discuss reimbursement strategies for patient education.

**Process Evaluation:** Reimbursement policies will be researched in order to better understand available options for reimbursement. Key agencies involved in policy will be contacted and solicited for their assistance. Collaboration will start with representatives from West Virginia's major insurers.

#### Outcome Evaluation:

A billable code for asthma patient education will be developed. Strategies for reimbursement of patient education will be outlined. Strategies will be developed for public and provider education on the same.

**Impact Evaluation:** Time spent by providers on patient asthma education will lead to improved management of the disease and decreased burden of asthma in West Virginia.

Objective 2: Promote reimbursement for durable medical equipment, including spacer devices and peak-flow meters.

## Strategies:

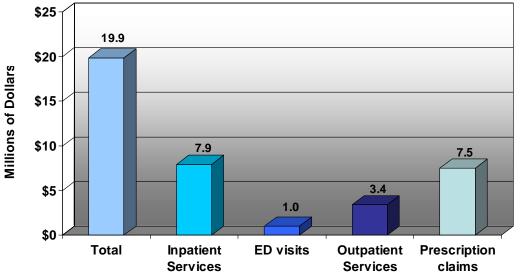
- Identify current practices and barriers regarding reimbursement and make these more widely known.
- Work with major insurers to secure coverage for equipment.

**Process Evaluation:** Reimbursement policies for durable medical equipment will be researched. Key agencies involved in policy will be contacted and solicited for their assistance. Collaboration will start with representatives from West Virginia's major insurers.

**Outcome Evaluation:** A billable code for durable asthma medical equipment will be developed. Strategies will be developed for public and provider education on the same.

**Impact Evaluation:** Medical asthma equipment will improve the management of the disease and decrease the burden of asthma in West Virginia.

Figure 10: Amounts Reimbursed by WV Medicaid for Medical Services with a Primary or Secondary Diagnosis of Asthma: 2002<sup>a</sup>



a. Total = Amount reimbursed by West Virginia Medicaid for recipients who had medical services with a primary or secondary diagnosis of asthma, including all asthma-related prescription claims for these recipients.



GOAL 2: Develop and promulgate policies to reduce asthma patients' exposure to allergens and irritants.

Objective 1: Develop standards and guidelines for control of indoor and outdoor environmental triggers for asthma.

## Strategies:

- Assess asthma-relevant policies and practices in schools and child-care centers, the housing industry, and in occupational settings.
- Work with appropriate overseeing/licensing bodies to develop asthmafriendly policies.

**Process Evaluation:** Current policies and practices will be assessed. Key representatives from schools, child-care centers, the housing-industry, occupational settings, and licensing bodies will be contacted and solicited for their assistance as needed.

**Outcome Evaluation:** Asthma-friendly policies will be produced and implemented. Strategies will be developed for the education of people on the same.

**Impact Evaluation:** Elimination of triggers will lead to fewer asthma exacerbations and decreased burden of asthma in West Virginia.

Objective 2: Eliminate public exposure to secondhand smoke and promote policies that address this.

# Strategies:

- Collaborate with elements of the West Virginia Division of Tobacco Prevention that deal with clean indoor air issues.
- Provide education about existing smoke-free policies and promote their enforcement.
- Work with tobacco-control groups to develop common objectives and complementary plans.

**Process Evaluation:** Members of the Division of Tobacco Prevention and other tobacco-control groups working on clean indoor air policies will be solicited for their assistance.

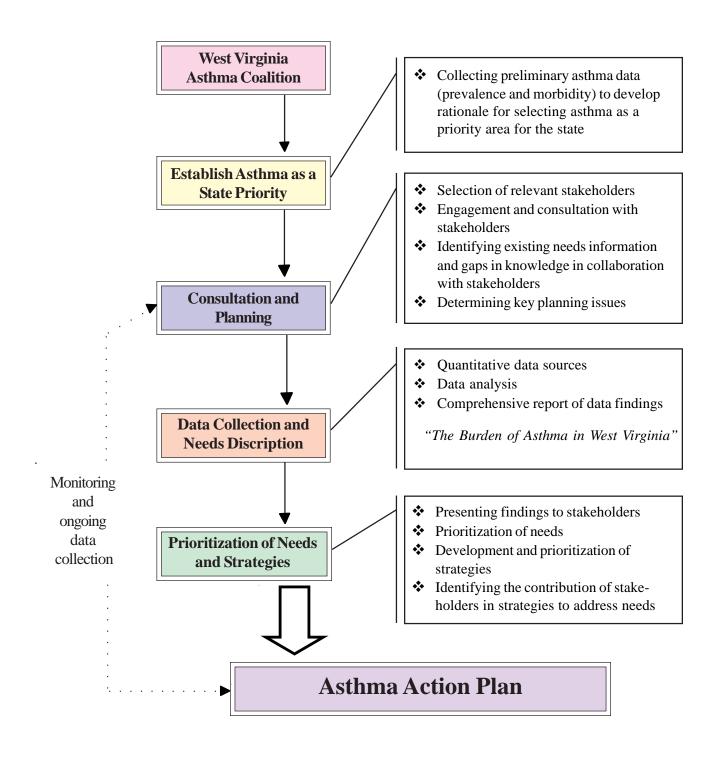
Outcome Evaluation: Educational materials on existing smoke-free policies will be made available to all appropriate parties. Plans for eliminating secondhand smoke exposure and promoting related policies will be developed.

**Impact Evaluation:** Elimination of exposure to secondhand smoke will lead to fewer asthma exacerbations and decreased burden of asthma in West Virginia.

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#### APPENDIX A: SUMMARY OF 'CRITICAL STEPS' IN THE PLANNING PROCESS



#### Appendix B: Summary of Guidelines for the Diagnosis and Management of Asthma

### **Component 1:**

# Measures of Assessment and Monitoring

#### Initial Assessment and Diagnosis of Asthma

Making the correct diagnosis of asthma is extremely important. Clinical judgment is required because signs and symptoms vary widely from patient to patient as well as within each patient over time. To establish the diagnosis of asthma, the clinician must determine that:

- Episodic symptoms of airflow obstruction are present.
- Airflow obstruction is at least partially reversible
- Alternative diagnoses are excluded.

Asthma severity classifications reflect the clinical manifestations of asthma. They are: mild intermittent, mild persistent, moderate persistent, and severe persistent. The Panel emphasizes that patients at any level of severity can have mild, moderate, or severe exacerbations.

#### Periodic Assessment and Monitoring

To establish whether the goals of asthma therapy have been achieved, ongoing monitoring and periodic assessment are needed. The goals of asthma therapy are to:

- Prevent chronic and troublesome symptoms
- Maintain (near) normal pulmonary function
- Maintain normal activity levels (including exercise and other physical activity)
- Prevent recurrent exacerbations of asthma and minimize the need for emergency department visits of hospitalizations
- Provide optimal pharmacotherapy (i.e., medication) with minimal or no adverse effects
- Meet patients' and families' expectations of and satisfaction with asthma care

Several types of monitoring are recommended: signs and symptoms, pulmonary function, quality of life/functional status, history of asthma exacerbations, medication, and patient-provider communication and patient satisfaction.

The Panel recommends that patients, especially those with moderate-to-severe persistent asthma or a history of severe exacerbations, be given a written action plan based on signs and symptoms and/or peak expiratory flow. Daily peak flow monitoring is recommended for patients with moderate-to-severe persistent asthma. In addition, the Panel states that any patient who develops severe exacerbations may benefit from peak flow monitoring.



## **Component 2:**

# **Control of Factors Contributing to Asthma Severity**

Exposure of sensitive patients to inhalant allergens has been shown to increase airway inflammation, airway hyper responsiveness, asthma symptoms, need for medication, and death due to asthma. Substantially reducing exposures significantly reduces these outcomes. Environmental tobacco smoke is a major precipitant of asthma symptoms in children, increases symptoms and the need for medications, and reduces lung function in adults. Increased air pollution levels of respirable particulates, ozone, sulfur dioxide and nitrogen dioxide have been reported to precipitate asthma symptoms and increase emergency department visits and hospitalizations for asthma. In addition to irritants (e.g., tobacco smoke and pollutants) and occupational exposures, reducing exposure to allergens may be required for successful long-term management of asthma. Examples of inhalant allergens include: animal allergens, house-dust mites, cockroach allergens, indoor fungi (molds) and outdoor allergens. Other factors that can contribute to asthma severity include rhinitis and sinusitis, gastro esophageal reflux, some medications, and viral respiratory infections.

# Component 3: Pharmacologic Therapy

The updated Guidelines offer an extensive discussion of the pharamcologic management of patients at all levels of asthma severity. It is noted that asthma pharmacotherapy should be instituted in conjunction with environmental control measures to factors known to increase the patient's asthma symptoms.

A stepwise approach to pharmacologic therapy is recommended, with the type and amount of medication dictated by asthma severity. The updated Guidelines continue to emphasize that persistent asthma requires daily long-term therapy in addition to appropriate medications to manage the asthma exacerbations. Medications are classified into two general classes: *long-term-control medications* to achieve and maintain control of persistent asthma and *quick-relief medications* to treat symptoms and exacerbations.

Observations into the basic mechanisms of asthma have had a tremendous influence on therapy. Because inflammation is considered an early and persistent component of asthma, therapy for persistent asthma must be directed toward long-term suppression of inflammation. Thus the most effective medications for long-term control are those shown to have anti-inflammatory effects. For example, early intervention with inhaled corticosteroids can improve asthma control and normalize lung function, and preliminary studies suggest that it may prevent irreversible airway injury. The updated guidelines also include discussion of the management of asthma in infants and young children that incorporates recent studies on wheezing in early childhood. Another addition is discussions of long-term-control medications that have become available since 1991.

# Component 4:

## **Education for a Partnership in Asthma Care**

Education for an active partnership with patients remains the cornerstone of asthma management and should be carried out by health care providers delivering asthma care. Education should start at the time of asthma diagnosis and be integrated into every step of clinical asthma care. Asthma self-management education should be tailored to the needs of each patient, maintaining sensitivity to cultural beliefs and practices, and involving family members, particularly for pediatric and elderly patients. New emphasis is placed on evaluating outcomes in terms of patient perceptions of improvement, especially quality of life and the ability to engage in usual activities. Health care providers need to 5/9/02systematically teach and frequently review with patients how to manage and control their asthma. Patients also should be provided with and taught to use a written daily self-management plan and an action plan for exacerbations. It is especially important to give a written action plan to patients with moderate-to-severe persistent asthma or a history of severe exacerbations. Appropriate patients should also receive a daily asthma diary. Adherence should be encouraged by promoting open communication; individualizing, reviewing, and adjusting plans as needed; emphasizing goals and outcomes; and encouraging family involvement.

**Source:** U.S. Department of Health and Human Services. *Action Against Asthma: A Strategic Plan for the Department of Health and Human Services.* Washington, DC: U.S. Dept. of Health and Human Services, May 2000.

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# Appendix C: Example of Written Asthma Action Plan

Name:	Date:
It is important in managing asthi	ma to keep track of your symptoms, medications, and peak expiratory flow (PEF).
You can use the colors of a traff	ic light to help learn your asthma medications:
A. GREEN means GO B. YELLOW means CAUTION	Use preventive (anti-inflammatory) medicine Use quick-relief (short-acting bronchodilator) medicine in addition to the preventive medicine.
C. RED means STOP!	Get help from a doctor.
A Your GREEN ZONE is	80 to 100% of your personal best. GO!
Breathing is good with no cough	, wheeze, or chest tightness during work, school, exercise, or play.
ACTION:  Continue with medical	ations listed in your daily treatment plan.
	50 to less than 80% of your personal best. CAUTION! (cough, wheeze, chest tightness). Your peak flow number drops e:
	aled quick-relief medicine ptoms upon awakening n asthma symptoms
Take puffs of Begin/increase trea	of your quick-relief (bronchodilator) medicine:
	50% or less of your best. DANGER!! elow, or you continue to get worse after increasing treatment according to the
Begin/increase treatn Call your doctor now emergency room (ph	your quick-relief (bronchodilator) medicine:  nent with oral steroids. Take mg now.  (phone ). If you cannot contact your doctor, go directly to the numbers for transportation
<ul> <li>Inhaled bronchodilator</li> </ul>	FOR IF: sen while you are taking oral steroids, or treatments are not lasting 4 hours, or remains or falls below in spite of following the plan.
Physician Signature	Patient's/Family Member's Signature
	h (1997). Expert Panel Report 2: Guidelines for the Diagnosis and Management of Asthma.

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FOCUS MEASURE DEFINITION SOURCE POTENTIAL DATA ELEMENTS	"Have you ever been told by a doctor, nurse, or other health professional that you had asthma?" AND "Do you still ave asthma?"  "Have you ever been told by a doctor, nurse, or other health adoctor, nurse, or other health and professional that you had asthma?" AND "Do you still ave asthma?"  "Have you ever been told by a doctor, nurse, or other health and professional that you had asthma?"  "Have you ever been told by a doctor, nurse, or other health and professional that you had asthma?"  "Have you ever been told by a doctor, nurse, or other health are asthma?"  "Have you ever been told by a doctor."  Tobacco Survey Grade: 6 - 12  Race: White, Black, Hispanic	thma Attack doctor that you had asthma?"  AND "Have you ever been told by a doctor that you had an asthma?"  Past 1 year attack or episode of asthma in the past 12 months?"  Cender: Male, Female  School: Middle S., High S.  School days lost: 0, 1-5 days, 6-10 days. >=11 days  Geographic Region  One or More Days of School Missed  Secondhand Smoke: Yes, No	Thave you ever been told by a doctor that you had asthma?"  WV Youth AND "Are you currently taking prescription Medicines asthma?"  WV Youth AND "Are you currently taking prescription medicine for asthma?"  WV Youth School: Male, Female Gender: Male, Female School: Middle S., High S.  Grade: 6 - 12  Race: White, Black, Hispanic	Smoked on one or more days in the past 30 days  Smoking the past 30 days  Smoking Status: Current Smoker, High S.  Gender: Male, Female School: Middle S., High S.  Grade: 6 - 12  Race: White, Black, Hispanic Smoker	nd Smoke
	"Have you doctor, mu doctor, mu Prevalence asthma?" have asthm	Asthrna Attack doctor that Prevalence - During AND ''Har the Past 1 year attack or e	Current Use of AND "Are Prescription Medicines prescription asthma?"		Students who were in the same room or same car with someone who was smoking cigarettes on at least one occasion in the past
CATEGORY	Health System Measure (Structural)	Health Status Measure (Process)	Health Status Measure (Process)	Health Status Measure (Process)	Health System Measure (Structural)

POTENTIAL DATA ELEMENTS	Gender: Male, Female Grade: 12-17	Gender: Male, Female Age: <15, 15-44, 45-64, 65+ Average Length of Stay (ALOS) Charges: Total Hospital, Mean per Discharge Payer: Medicare, Medicaid, Non-Government, Self-pay/Charity, PEIA, Other Government, Other, Unknown	Race: White, Black, Other Age: <1, 1-4, 5-14, 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, 85+	Gender: Male, Female Age: 0-14, 15-20, 21-64 Race: White, Black, Other, Unknown Medical Services Utilized: Inpatient Hospitalizations, Outpatient Visits, or Emergency Room Visits Incurred Cost: Mean Cost per visit or per hospitalization	Temporary Total Disability (TTD)Claims Permanent Partial Disability (PPD) Claims Medical Only Claims Industry Group Costs: Total Medical and Indemnity Compensation	Grade: Elementary (PreK-4), Middle (5-8), Secondary (9-12)
SOURCE	National Health Interview Survey	WV Health Care Authority (WVHCA) UB92 data, WV Hospital Discharge Data 1995 - 2001, National Hospital Discharge Survey (NHDS), Census	WV Vital Statistics 1991-2000, Census	WV Medicaid Claims 1999	WV Worker's Compensation Claims Data, Institute of Occupational and Environmental Health (IOEH), Occupational Safety and Health Administration (OSHA)	Council of School Nurses Data 1989- 1999, WV School Nurse Needs Assessment
MEASURE DEFINITION		WV Residents discharged with an ICD-9-CM primary diagnosis code of 493	Asthma as primary cause of death: ICD-9 code of 493; ICD-10 code of J45	ICD-9 primary diagnosis code of asthma (493.00 to 493.99) with at least one medical claim (Continuous eligibility during 1999)	ICD-9 codes for work related asthma: 491.20, 491.21, 493.0, 493.9, 495.8, 506.4, 506.9, 507.8	County level needs assessment
FOCUS	Asthma Prevalence	Asthma Hospitalization Rates	Asthna Mortality	Medicaid Asthma Rates/Proportions	Occupational Asthma Cases	Asthma Cases
CATEGORY	Health System Measure (Structural)	Health Status Measure (Process)	Health Outcome Measure	Health Status Measure (Process)	Health Status Measure (Process)	Health System Measure (Structural)

#### **Appendix E: Website Resources**

- American Academy of Allergy Asthma and Immunology Committee Paper Summary: Asthma Adherence: http://www.aaaai.org/members/asthma\_adherence.stm
- American Lung Association of West Virginia: <a href="http://www.alawv.org/">http://www.alawv.org/</a>
- American Lung Association: <a href="http://www.lungusa.org/site/pp.asp?c=dvLUK900E&b=22542">http://www.lungusa.org/site/pp.asp?c=dvLUK900E&b=22542</a>
- Asthma Education: Interactive Guidelines: <a href="http://www.vh.org/adult/provider/internalmedicine/">http://www.vh.org/adult/provider/internalmedicine/</a> AsthmaIM/Default.html
- **Best Practices for Asthma**: <a href="http://www.cdphe.state.co.us/ps/bestpractices/topicsubpages/asthma.html">http://www.cdphe.state.co.us/ps/bestpractices/topicsubpages/asthma.html</a>
- CDC Asthma Homepage: http://www.cdc.gov/asthma/default.htm
- CDC: Potentially Effective Interventions for Asthma: <a href="http://www.cdc.gov/asthma/interventions/default.htm">http://www.cdc.gov/asthma/interventions/default.htm</a>
- Health Disparities Collaboratives: Asthma Changing Practice, Changing Lives: <a href="http://www.healthdisparities.net/Asthma">http://www.healthdisparities.net/Asthma</a> Apr2002.pdf
- Health Disparities Collaboratives: <a href="http://www.healthdisparities.net/voffice.asp">http://www.healthdisparities.net/voffice.asp</a>
- **Journal of Allergy and Clinical Immunology**: <a href="http://www2.us.elsevierhealth.com/scripts/om.dll/serve?action=searchDB&searchDBfor=iss&id=jai021105b">http://www2.us.elsevierhealth.com/scripts/om.dll/serve?action=searchDB&searchDBfor=iss&id=jai021105b</a>
- National Asthma Education and Prevention Program: Guidelines for Diagnosis and Management of Asthma: <a href="http://www.nhlbi.nih.gov/guidelines/asthma/execsumm.pdf">http://www.nhlbi.nih.gov/guidelines/asthma/execsumm.pdf</a>
- National Center for Health Statistics: <a href="http://www.cdc.gov/nchs/nhis.htm">http://www.cdc.gov/nchs/nhis.htm</a>
- National Guideline Clearinghouse: Key Clinical Activities for Quality Asthma Care: <a href="http://www.guideline.gov/summary/summary.aspx?doc">http://www.guideline.gov/summary/summary.aspx?doc</a> id=3734
- National Jewish Medical and Research Center: <a href="http://asthma.nationaljewish.org/index.php">http://asthma.nationaljewish.org/index.php</a>
- National Jewish Medical and Research Center: Peak Flow Learning Center: <a href="http://asthma.nationaljewish.org/living/tools/peakflow.php">http://asthma.nationaljewish.org/living/tools/peakflow.php</a>
- National Jewish Medical and Research Center: Using an Asthma Action Plan to Manage Asthma: <a href="http://asthma.nationaljewish.org/living/tools/actionplan.php">http://asthma.nationaljewish.org/living/tools/actionplan.php</a>
- NHLBI: Lung Disease Information—Asthma: <a href="http://www.nhlbi.nih.gov/health/public/lung/index.htm">http://www.nhlbi.nih.gov/health/public/lung/index.htm</a>
- Practical Guide for the Diagnosis and Management of Asthma: <a href="http://www.asthmainamerica.com/asthmaguide/pdfs/practgde">http://www.asthmainamerica.com/asthmaguide/pdfs/practgde</a> all.pdf
- The Burden of Asthma in West Virginia: <a href="http://www.wvdhhr.org/bph/oehp/asthma/burden/default.htm">http://www.wvdhhr.org/bph/oehp/asthma/burden/default.htm</a>
- US EPA: Managing Asthma in the School Environment: <a href="http://www.epa.gov/iaq/schools/asthma/ame-ame.htm">http://www.epa.gov/iaq/schools/asthma/ame-ame.htm</a>
- WV Healthy People 2010: Asthma: <a href="http://www.wvdhhr.org/bph/hp2010/objective/24.htm#object">http://www.wvdhhr.org/bph/hp2010/objective/24.htm#object</a>

