

**STATE OF CONNECTICUT**

**DEPARTMENT OF PUBLIC HEALTH**



**A Collaborative Approach for Addressing  
Asthma in Connecticut  
2009 - 2014**

# STATE OF CONNECTICUT

## DEPARTMENT OF PUBLIC HEALTH

J. Robert Galvin, M.D., M.P.H., M.B.A.  
Commissioner



M. Jodi Rell  
Governor

February 28, 2009

Dear CDC Asthma Program Director:

The Connecticut Department of Public Health (DPH) is pleased to present the 2009 *Connecticut Statewide Asthma Plan: A Collaborative Effort for Addressing Asthma in Connecticut 2009-2014*. According to a recently released *Asthma in Connecticut 2008 Surveillance Report*, asthma is a disease that affects the lives of more than 380,000 individuals in Connecticut. No segment of society is unaffected; children are disproportionately impacted by the disease.

The Connecticut Statewide Asthma Plan is an important step in the mobilization of individuals, communities and organizations throughout Connecticut to improve the prevention, diagnosis, and management of asthma and its many burdens. Over fifty organizations and individuals have joined the DPH to form the Statewide Asthma Advisory Council. Due to the expansion of partnerships and the ever-changing needs of asthma, the State Plan was updated and revised to better reflect the needs of Connecticut's residents.

Connecticut's State Asthma Plan represents a coordinated call to action that challenges us to address the overarching goal to reduce the asthma morbidity and mortality in Connecticut through a public health approach. The Plan identifies six priority areas addressing areas of clinical management, professional education, patient education, the environment, surveillance, and public awareness. Moreover it targets those populations that bear the highest asthma burden. This Plan is designed to guide state agencies, community partners and healthcare providers on implementing interventions and initiatives recommended by the Asthma Advisory Council. The dissemination of the Plan to our key stakeholders throughout the state will combat asthma and will be utilized as a framework for action and collaboration.

The Connecticut Department of Public Health extends its appreciation to those who served on the Asthma Advisory Council and contributed their time and expertise to the development of this Plan. I also want to acknowledge those who will be involved in the future as we work to put the strategies in action. Together, we can reduce the asthma morbidity and mortality in Connecticut and ensure a better quality of life for all residents who live with asthma. As Commissioner of the Department of Public Health, I am proud to move forward asthma public health initiatives in our state.

Sincerely,

A handwritten signature in cursive script that reads "Robert Galvin".

J. Robert Galvin, M.D., M.P.H., M.B.A.  
Commissioner



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We gratefully acknowledge the members of the work groups and the Statewide Asthma Task Force for their time and effort spent revising the plan, as well as the following individuals for their detailed review and contributions.

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*Suggestion citation:* Connecticut Asthma Advisory Council Plan Revision Workgroups, *A Collaborative Effort for Addressing Asthma in CT: CT Statewide Asthma Plan 2009-2014*. State of CT Department of Public Health, Asthma Program, Hartford, CT 2009.

## STATEWIDE ASTHMA PLAN 2009 - 2014

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The members of the Statewide Asthma revision work groups are health experts representing a diverse group of individuals from the medical, pharmacy, public health, and consumer sectors involved in asthma care, prevention, and management.

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**We would also like to recognize all those individuals and coalitions, although not members of the task force, who contributed to the development of this Plan**

**Elizabeth C. Brown** –Legislative Director, CT Commission on Children,  
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**Hartford Asthma Call to Action (ACTA)**  
**New London County Asthma Action Partnership**  
**Northeast Health Districts Coalition**  
**Region Seven Coalition**  
**New Haven Asthma Coalition**

**Funding provided by the Federal U.S. Centers for Disease Control & Prevention,  
Grant Number 2U59EH124179-04**



John DeStefano, Jr.  
Mayor

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William P. Quinn, M.P.H.  
Director of Health

To Whom It May Concern,

The Asthma Advisory Council (AAC) of Connecticut is a collaborative group that involves multiple partners from public and private sectors. The AAC members and workgroup members that were brought together to revise the statewide asthma plan have knowledge, expertise, and an interest in decreasing the asthma burden and improving health outcomes for individuals with asthma in Connecticut.

The Plan revision workgroup members and the AAC have defined Plan priorities based on the new NAEPP Guidelines for asthma care, current data and proven interventions along with available resources in Connecticut.

The AAC members will again take a leadership role in conjunction with the Connecticut Department of Public Health's Asthma Program to support and guide Plan implementation.

The AAC and the Asthma Program staff extend a sincere thank you to all individuals who contributed their time and expertise to revise the Connecticut Statewide Asthma Plan. Together, our collaborative efforts defined in this new Plan can decrease hospitalization and emergency department visits and improve the daily lives of patients and their families in Connecticut.

Sincerely,

Stephen Updegrove, MD, MPH  
Revision Committee Co-chair  
Asthma Advisory Council

Eileen Boulay, RN  
Revision Committee Co-chair  
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"YOUR HEALTH IS OUR COMMUNITY'S WEALTH"

**NEW HAVEN** IT ALL HAPPENS HERE

Mayor John DeStefano, Jr.

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## Executive Summary

The mission of the Connecticut Department of Public Health's Asthma Program is to reduce asthma associated morbidity and mortality to improve the quality of life for Connecticut residents living with asthma.

Asthma is a chronic disease of the respiratory system that is characterized by reversible obstruction of the airways and airway hyper-responsiveness to a variety of stimuli. Nationally, asthma is one of the most common chronic diseases and a leading cause of disability in children. In 2006, 8.5% (19.2 million) of adults in the United States reported that they have asthma (Behavioral Risk Factor Surveillance System).<sup>16</sup> According to *Asthma in Connecticut 2008: A Surveillance Report*, the prevalence of asthma among adults is higher in Connecticut than in the U.S. as a whole, and appears to be increasing, 9.3% in 2006, up from 7.8% in 2000. Approximately 248,000 adults (9.3%) and 86,000 children (10.5%) in Connecticut reported that they currently have asthma.

Asthma affects people of both sexes and all ages, races and ethnicities; however, certain population subgroups are disproportionately affected. Based on asthma prevalence, hospitalization, ED visit, and mortality data, the following population subgroups have been identified as a priority for asthma intervention in Connecticut: 1) children, 2) adult women, 3) the elderly (65+ years of age), 4) Hispanics of any race, 5) non-Hispanic blacks, 6) residents of low socioeconomic status, and 7) residents of urban areas.

The revised Plan builds on successful 2003 Plan implementation efforts over the last five years. The Plan will be a guide for other state agencies, healthcare providers, community partners, and stakeholders in implementing strategies to achieve the mission of the Asthma Program. The 2003 Plan was an effective roadmap to

guide the Program to a mature, experienced level. The current Plan capitalizes on resources and knowledge not available when the earlier Plan was written. The Asthma Program now has statewide recognition, access to numerous data sources and an asthma surveillance system with evidenced-based interventions in place at the local, regional and statewide level. It identifies what populations bear the highest asthma burden and can focus interventions and resources on those populations at highest risk in a cost-effective manner.

The Revised Plan identifies six goals:

1. Assess Connecticut's asthma burden to identify disparities, high-risk populations, and trends
2. Implement the State Asthma Plan by incorporating plan goals into an organized work plan that monitors progress toward meeting State Asthma Plan goals
3. Increase the number of partners with expertise in advocacy and systems change that can identify and act on opportunities for systems or policy changes that improve asthma outcomes
4. Conduct interventions to promote patient self-management, adherence to NAEPP guidelines, a decrease in hospitalizations, especially for disparate populations
5. Evaluate programmatic activities, such as those defined under program management, interventions, partnership, and surveillance objectives
6. To create an environment that supports effective and comprehensive care through the engagement of consumers, providers and partners

## Background

### Introduction

Asthma is a chronic respiratory disease characterized by intermittent airway narrowing and airflow obstruction that causes repeated episodes of wheezing, coughing, and shortness of breath. The exact cause of asthma is not known, but both genetic and environmental factors are thought to play a role in its development and expression. These factors include:<sup>1</sup>

- Atopy (an inherited tendency to develop allergies)
- Parents who have asthma
- Certain respiratory infections during childhood
- Contact with certain airborne allergens or exposure to certain viral infections in infancy or in early childhood when the immune system is developing

If asthma or atopy runs in a family, exposure to airborne allergens (e.g., dust mites, cockroaches, and animal dander) and irritants (e.g., tobacco smoke) may make an individual's airways more reactive. Still in its infancy, the identification of genes associated with asthma and understanding of their interaction with environmental triggers involved in disease pathogenesis may lead to the development of effective strategies that promote awareness for those at increased risk of developing asthma.

### Demographics

Connecticut is characterized by high social and economic contrast and racial and ethnic diversity. It is the third smallest state in the U.S. in terms of area, but it has the 29th highest population and is the fourth most densely populated.<sup>2</sup> Approximately 88% of

Connecticut's population lives in urban areas.

Whether in terms of health status, income, poverty, racial composition, or almost any other factor, statewide averages for Connecticut often are misleading. Striking disparities exist across town lines, among racial and ethnic groups, and between urban and rural populations. These differences have engendered the concept of "two Connecticut,"<sup>3</sup> one comprising people who live in the wealthiest state in the nation, and the other consisting of those who live in some of the most severe and concentrated pockets of poverty in the U.S. The notion of "five Connecticut" has even been proposed, based on disparate social and economic factors. The overall health of Connecticut's people varies dramatically between its wealthiest and poorest communities.

Connecticut's population is changing, and the demographic changes are reflected in both numbers and patterns of inpatient hospitalization and ED visits. Disparities in asthma control in relation to incidence, mortality, and treatment were fundamental considerations in the revision of Connecticut's Statewide Asthma Plan.

#### ***Shift in Racial and Ethnic Composition***

Asthma rates and patterns vary across demographic groups, including racial and ethnic groups. From 1990 to 2000, the number and proportion of persons of white race in Connecticut decreased, whereas minority populations increased, in some cases by 50% or more. Connecticut's population is predominately white (81.6%) and non-Hispanic (90.6%); however, the racial and ethnic composition is dramatically different in the state's largest towns. Non-whites account for 72% of the population in Hartford, 57% in New Haven, and 55% in

Bridgeport, and Hispanics (of any race) represent 41%, 21%, and 32%, respectively, of the population in these three cities.<sup>4</sup> Hispanics are the largest minority group in Connecticut.

## Social and Economic Characteristics

### Language Spoken at Home

The percentages of Connecticut residents who speak a language other than English and who do not speak English well have been increasing. In 2000, nearly one in five Connecticut residents over 5 years of age spoke a language other than English, and more than 7% did not speak English “very well”. In Hartford and Bridgeport, more than 40% of the population spoke a language other than English, and more than one in five spoke English less than “very well.”

People with a poor ability to read, write and speak English often have a poor understanding of medical information and advice. As a result, they are less likely to access preventive health services, and they end up with poor health outcomes, compared to people with high English literacy.<sup>5</sup>

### Income and Poverty

Connecticut is the wealthiest state in the nation, but a great and growing gap exists between its rich and its poor. Between 1990 and 2000 the per capita income<sup>6</sup> of Connecticut residents rose by 42.5% to \$28,766. This figure was more than double the income defined by the federal government as “poverty level” for a family of three (\$3,740).<sup>7</sup> During the same period, the poverty rate declined nationally, while the number of people living below the poverty level in Connecticut rose from 217,347 to 259,514--an increase of nearly

20%-representing 7.6% of the state’s population.

No disparities among Connecticut’s 169 towns are more glaring than those for income and poverty. In 2000, *per capita* income ranged from \$15,000 in Hartford to nearly \$94,000 in New Canaan, and poverty rates ranged from 0.7% in Killingworth to 30.6% in Hartford. Hartford, the capital of the wealthiest state in the nation, had the second highest poverty rate of all U.S. cities.<sup>8</sup>

Connecticut residents of white race had the highest *per capita* income of any racial or ethnic group (\$31,505). *Per capita* income was 58% lower for Hispanics and 47% lower for African Americans.<sup>9</sup> Connecticut’s poverty rates were 7% for whites, 28% for African Americans, and 32% for Hispanics in 2002-2003.<sup>10</sup>

The U.S. Census Bureau may be undercounting actual poverty in Connecticut. The cost of living in Connecticut is higher than the national average. Accordingly, although an individual’s or family’s income may be above the national threshold for poverty, they might still be living in stressed financial conditions by Connecticut standards.<sup>11</sup>

### Health Insurance

Connecticut has one of the lowest percentages in the U.S. of people lacking health insurance.<sup>12</sup> In 2004, 5.8% of the state’s population had no health insurance at the time they were surveyed, and 9.4% said they had been uninsured at some time during the prior year. Among racial and ethnic groups, 21% of Hispanics, 7% of African Americans, and 3% of whites were uninsured; these disparities were found to be related to low income and lack of permanent, full-time employment. Young

adults are least likely to have insurance. By age group, 2% of persons less than 19 years, 16.8% of persons 19-29 years, 9.6% of persons 30-44 years, 4.8% of persons 45-64 years and 0.4% of persons age 65 and over were uninsured.<sup>13</sup>

Compared to people with health insurance coverage, those without health insurance

have more difficulty accessing personal health services, use less medical services, receive less outpatient and inpatient care, and, as a result, tend to have worse health.<sup>14</sup> Individuals without health insurance often seek care at a later or more advanced stage of disease, leading to higher death rates.<sup>15</sup>

## Framework for Planning

### Historical Perspective

The first *Statewide Asthma Plan* was published in 2003. The DPH Commissioner appointed the Statewide Asthma Task Force as an appropriate vehicle to develop the first Plan, and in October 2003, the DPH Deputy Commissioner supported the establishment of the 15-member Asthma Advisory Council (AAC) to guide implementation of the Statewide Asthma Plan.

Members of the AAC Plan revision work groups were selected based on the following criteria: a former member of the Asthma Task Force; a representative with expertise on asthma issues from each of the Asthma Workgroups (clinical management, public education, professional education, and the environment); individuals that bring statewide geographic representation and diversity to the Council.

The roles and responsibilities of the AAC are to advise and make recommendations on asthma-related matters, assist DPH in working with local communities in implementing the recommendations of the *Statewide Asthma Plan*, review and evaluate the implementation of the Plan, and serve on the council for at least one 1-year term, with potential for reappointment

The current AAC includes partners from several DPH programs, other State agencies, community-based organizations, local health departments, health care providers, schools, insurance providers, local asthma coalitions, academic and health care institutions, consumers, and others with environmental expertise.

This current Plan was developed using data from DPH (deaths, hospitalizations, school-

based asthma surveillance, and work-related disease), Connecticut Hospital Association - CHIME (hospitalization and emergency department data), the Behavioral Risk Factor Surveillance System, Medicaid managed care data from the Connecticut Voices for Children, expertise of the Asthma Program, the AAC members, Plan revision work group members, and others. The revised goals, objectives and strategies were established using data, trends, and the best available information through the Program, the AAC, plan revision work group members and other partners.

The Department of Public Health's Asthma Program has been working collaboratively with state, regional and local partners on asthma control issues for many years. The Centers for Disease Control and Prevention (CDC) Cooperative Agreement, *Addressing Asthma from a Public Health Perspective*, enabled the Program to strengthen relationships with existing partners and work with new partners toward the common goal of decreasing the number of hospitalizations and ED visits for asthma. The current Plan builds on components of the 2003 plan by refining objectives to focus on populations at highest risk for asthma exacerbations and/or death, and to incorporate current initiatives, data, and methods of education and outreach that were not available when the 2003 Plan was written. The Plan's priority focus will be disparate populations in urban settings. Our goals to increase awareness, to plan, implement and evaluate evidenced-based interventions in this population will address the needs of this high-risk population first. In addition, and the Program will continue analysis of surveillance data to develop fact sheets for special populations, to assist our partners/advocates.

## The Planning Process

To build on the important work accomplished through the 2003 Asthma Plan, the DPH Asthma Program invited former partners and work group members to assist in the revision process. New members were recruited to ensure diverse representation and expertise. Leaders and decision makers from a variety of DPH programs and other organizations were asked to participate; many sent a designee if they could not regularly participate. The Program vigorously sought involvement of key stakeholders from the areas of clinical management, the environment, policy, education, evaluation, and local health. The Program was not always successful, despite numerous attempts to seek representatives from the business community and the Connecticut Occupational Safety and Health Administration (CONNOSHA).

The major key stakeholders actively participated throughout the planning process and drafting of the revised Plan. The Asthma Program identified the need to revise the 2003 *Statewide Asthma Plan* to better serve those who still use hospitals and emergency departments to treat their asthma exacerbations, because they are not in control. Several years of data from multiple sources, evidenced-based interventions, and State-supported financial resources that did not exist to the extent they do today were not in place when the 2003 plan was written. The Asthma Program began discussing revising the 2003 Plan and received support to proceed during an AAC quarterly meeting in January 2006.

The current Plan is ambitious, but the work group members believed that the Program's current initiatives and interventions must be continued. To this end, many of the short-term objectives are already in process and

will serve as the foundation to build on over the next 5 years.

## Current Asthma Initiatives in Connecticut

Several interventions already in progress are included in the present Plan because they meet one or more key criteria:

- there is scientific evidence of their effectiveness,
- they follow NAEPP Guidelines, and/or
- they show potentially effective results that need further study.

These interventions, summarized below, are funded by various sources, are being implemented both regionally and statewide, and reach the target populations in a variety of settings.

The interventions will be promoted for inclusion into standard policies and practices within local health departments. They will be sustained through curricula and training provided by the Asthma Program, a train-the-trainer program, and collaboration with environmental health, local health and healthcare providers.

### Programs for Clinicians and Professionals:

***Pediatric Easy Breathing*** – A statewide program that trains pediatric providers in asthma diagnosis and management; “Best Practices” based on the NAEPP guidelines. (Partner: Connecticut Children’s Medical Center)

***Adult Easy Breathing*** – Provides training for medical residents in asthma diagnosis and management; “Best Practices” based on the NAEPP guidelines. (Partners: Norwalk Hospital, Bridgeport Hospital, and the Hospital of St. Raphael in New Haven)

***Asthma and Allergy Essentials for Day Care Providers*** – An asthma and allergy education program for childcare workers, daycare providers, “Head Start” and after school programs. The Program, taught by a certified nurse instructor from the Asthma and Allergy Foundation of America trains daycare providers to identify asthma triggers and feel more comfortable caring for children with asthma in their facility. (Partners: Naugatuck Valley Health District, Stratford Health Department)

### **Programs for Patients and Families:**

***Putting on Airs*** – An in-home asthma education and environmental assessment program provided by an asthma educator/nurse and a sanitarian. (Partners: Northeast District Department of Health, Naugatuck Valley Health District, Milford Health Department, Ledge Light Health District, Bridgeport Health Department, Meriden Health Department, and the Waterbury Health Department)

***Asthma Awareness and Education Program*** - Educates the public on the signs and symptoms of asthma and environmental factors that may contribute to the disease. The program targets disparate populations in large urban areas with high rates of hospitalization and emergency department visits. The program trains individuals from urban communities to conduct outreach and offer presentations through an asthma speakers’ bureau and three urban asthma

coalitions. (Partner: Connecticut Coalition for Environmental Justice – Bridgeport, Hartford, and New Haven)

### **Programs in School Settings:**

***Open Airways for Schools*** – A statewide asthma education program on self-management during school hours for children aged 8-11 who have asthma. The program is taught by the American Lung Association’s certified school nurses to train school nurses. (Partners: Connecticut schools, Central Connecticut Health District)

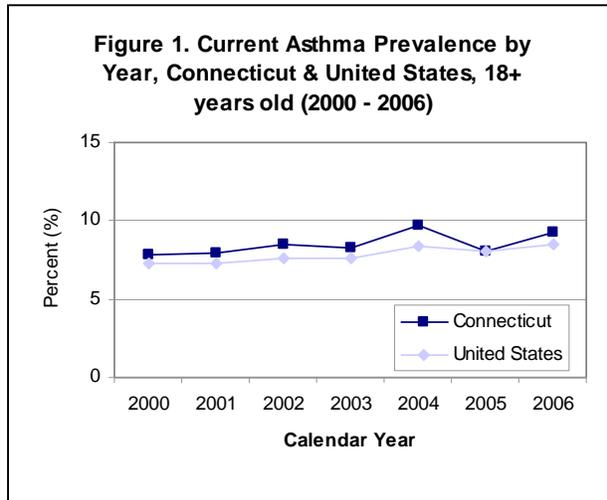
***Tools for Schools (TfS)*** – The TfS program was designed by the Environmental Protection Agency (EPA) to improve the indoor environment in school settings. The Program educates school teaching, custodial, and maintenance staff to identify indoor air quality (IAQ) problems in their schools and to take correction action to address the problems and improve IAQ. This program has been successfully implemented statewide.

***Tools for Office Buildings (TfO)*** – The program educates employees, custodial and maintenance staff to identify and address IAQ problems in office buildings as in the *Tools for Schools program*.

***Tools for Technical Schools (TfT)*** – Employs the TfS concept to technical schools and addresses secondary exposures associated with emissions from the trades.

# The Burden of Asthma in CT

## Prevalence

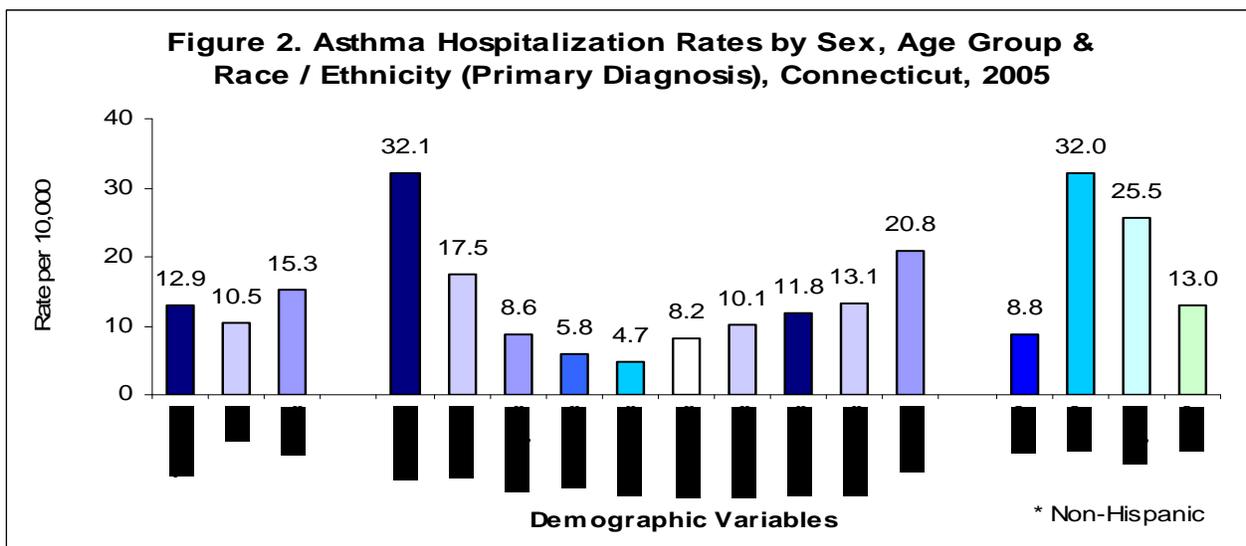


The prevalence of asthma among adults is higher in Connecticut than in the U.S. as a whole and appears to be on the rise (9.3% in 2006 from 7.8% in 2000) (Figure 1).<sup>16</sup> Approximately 248,000 (9.3%) Connecticut adults and 86,000 (10.5%) children reported that they currently have asthma.<sup>16</sup> Asthma prevalence is higher in adult females and male children. Hispanics of all races and non-Hispanic blacks tend to experience higher rates of asthma than do non-Hispanic whites, and the prevalence decreases with age.

## Hospitalizations

Although there is no known cure for asthma, it can be managed through proper medical treatment and the avoidance of triggers (A trigger is a substance or event that sets off asthma symptoms). With proper management, patients should not have to seek emergency care or be admitted to the hospital because of their asthma. Still, each year thousands of patients seek hospital care. In Connecticut in 2005, there were a total of 4,500 hospitalizations (12.9 per 10,000) among CT residents with a primary diagnosis of asthma (Figure 2)<sup>16</sup>. The rate for women was 38% higher than that for men. Children 0-9 years of age and adults 65+ years of age and older had the highest rates of asthma hospitalization (37.3 and 19.6 per 10,000 population, respectively), and compared to non-Hispanic whites, the rates among non-Hispanic blacks and Hispanics were about 3 times higher (8.5, 33.8, and 35.2 per 10,000, respectively).

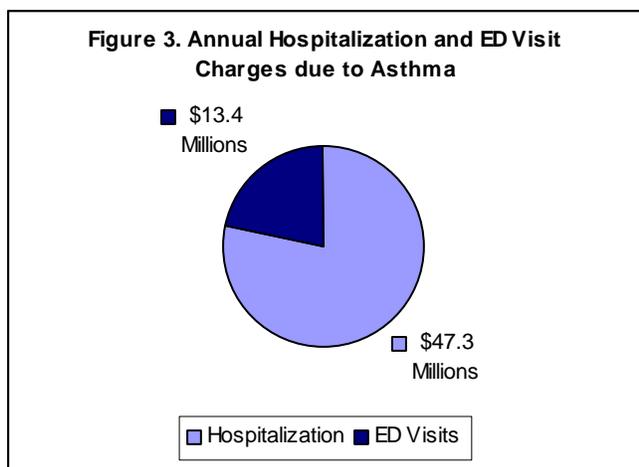
Similar disparities by sex, age group, and race/ethnicity were observed for asthma ED visits and deaths. Asthma morbidity and mortality also were higher among residents



of urban areas. Compared to residents of smaller towns, residents of the five largest Connecticut towns (Bridgeport, Hartford, New Haven, Stamford, and Waterbury) were nearly 3 times more likely to be hospitalized (27.0 per 10,000 population vs. 9.9 per 10,000 population) or to visit an ED (136.6 per 10,000 population vs. 48.7 per 10,000 population) for their asthma and twice as likely to die (24.3 per 1,000,000 population vs. 12.3 per 1,000,000 population) due to asthma when compared to residents from the rest of CT.<sup>17</sup>

### Economic Burden

Each year in Connecticut, \$47.3 million in hospitalization charges and \$13.4 million in emergency department (ED) charges are attributable to a primary diagnosis of asthma (Figure 3).<sup>16</sup> Over half of these charges were covered by public funds, such as Medicaid and Medicare. While the rates of hospitalizations and ED visits with a primary diagnosis of asthma, and asthma deaths have not increased during the most recent 5-year period, Connecticut still falls short of its targets in reducing asthma burden based on the *Healthy People 2010* objectives. Hospitalizations and ED visits with asthma as a *secondary* diagnosis, however, have steadily increased during the past decade, and research is needed to



explain the significance of asthma comorbidity with other conditions.

### Management and Control

In 2005, of adults who reported currently having asthma, more than 60% reported had some asthma symptoms in the past 30 days, 47.7% experienced an asthma attack in the past 12 months, and 21.7% reported difficulty sleeping due to asthma on at least one of the past 30 days.<sup>16</sup> In addition, 29.1% reported activity limitation in the past 12 months because of their asthma. Although this represents a decrease from 35% in 2003, it is still well above the *Healthy People 2010* target of 6%.

In 2005, 21.7% of adults with current asthma reported difficulty sleeping due to asthma on at least one of the past 30 days.<sup>16</sup>

### Barriers to Care

#### *Nature of the Disease*

Asthma is a difficult disease to manage in that its causes are not clear and it has symptoms that recur unpredictably and are of irregular duration and severity..

#### *Patient Education*

Barriers related to patient education range from self-efficacy to lack of provider understanding of the level of the patient's comprehension. The lack of education may hinder the ability of the person with asthma to understand and successfully adhere to the prescribed asthma treatment regimen.

#### *Low Provider Adherence to National*

*Asthma Education and Prevention Program (NAEPP) Guidelines*

Low provider adherence to the NAEPP Guidelines may be due to a lack of knowledge of the guidelines or reluctance to change practice patterns. The Guidelines

are a best-practice standard established and updated in 2008 by the NAEPP.

### ***Systems Issues and Disparities in Care***

The lack of coordination of health care across providers impedes the effective delivery of appropriate services to persons with asthma. In addition, because asthma care varies by health plans, individuals with asthma do not have access to the same quality of care.

### ***Lack of Insurance***

Rising medical costs make care prohibitive for some of Connecticut's most vulnerable populations. Many workers do not have employer-provided insurance, do not qualify for Medicaid, or cannot afford to purchase their own insurance. Many more residents are underinsured or have coverage that does not include the full cost of effective asthma treatments.

### ***Low-Income***

One of the barriers to receiving diagnostic care and appropriate treatment is low socioeconomic status and its attendants such as homelessness and level of educational development.

## **Priority Populations for Intervention**

Asthma affects people of both sexes and all ages, races and ethnicities; however, certain population subgroups are disproportionately affected. Based on asthma prevalence, hospitalizations, ED visits, and mortality, the following population subgroups have been identified as priority populations for asthma interventions in Connecticut: 1) children, 2) adult women, 3) the elderly (65+ years of age), 4) Hispanics of all races, 5) non-Hispanic blacks, 6) residents of low income, and 7) residents of urban areas.<sup>15</sup>

1. Children: Compared to adults, children under 18 years of age, and

especially those under 5 years of age, are more likely to be hospitalized or to have gone to the ED because of their asthma.

2. Adult Females: Women are more likely than men to have asthma and are also more likely to be hospitalized, to have visited an ED, and to die because of their asthma.
3. Elderly: Adults 65 years of age and older have the highest asthma hospitalization and mortality rates among adults.
4. Hispanics: When compared to non-Hispanic whites, Hispanics are over 3 times more likely to be hospitalized, over 4 times more likely to have gone to the ED, and more than 1.5 times more likely to die because of their asthma.
5. Non-Hispanic Blacks: Compared to non-Hispanic whites, non-Hispanic blacks are over 3 times more likely to be hospitalized or to have gone to the ED, and are more than twice as likely to die because of their asthma.
6. Low Income: Adults and children in lower-income households are more likely to have asthma. About half of all asthma hospitalization and ED visits were covered by public funds, such as Medicaid or Medicare.
7. Residents of Urban Areas: Residents of some of Connecticut's largest cities are more likely to experience asthma and have higher rates of asthma hospitalizations and ED visits, compared to residents of smaller towns.

## **Program Response**

Surveillance of asthma prevalence, hospitalizations, and ED visits has identified the need for the Program to focus education and intervention efforts on the largest towns where the highest rates of hospitalization

and ED visits are documented for minority populations with lower income levels.

The effect of the current economic climate on implementation of the present Asthma Plan cannot be predicted with certainty. The Plan's objectives and strategies will be prioritized such that those that do not require additional funding will be implemented first. If necessary, the Program will also focus on the planning phase of strategies that require funding, seeking alternative funding sources, and preparing to act rapidly when funds become available. Currently, \$1.5 million in State funds are dedicated annually to asthma interventions. Because of the economic downturn, State funds for existing contracts may be reduced or eliminated. Although no one can predict if support will continue, key interventions such as the *Easy Breathing* initiative are strongly supported by State legislators. The Asthma Advisory Council (AAC) plans to work with insurance payers

towards systems change to support quality improvement initiatives and reimbursement that can sustain comprehensive best practice standards for asthma care.

The AAC will be reconvened, comprising the original 15 members and new members. With support from the DPH Asthma Program, it will guide implementation of the Plan. The AAC will meet quarterly to review time lines for work plan implementation and evaluation.

### **Next Steps**

Plan implementation will begin using the current interventions and surveillance data the Program has underway and the logic model that follows will outline the short term, intermediate, and long-term steps the program will take to reach the Plan's goal to reduce the asthma burden in Connecticut, especially to desperate populations.

**NEXT STEPS: FRAMEWORK FOR PLANNING**

**Activities**

**Improve Clinical Systems of Care**

- CT DEH: staff, expertise, educational materials, community asthma interventions, surveillance & community funding
- Local Health Departments: staff, community interventions & expertise
- Asthma Advisory Council: guidance, expertise, plan implementation oversight
- Community Asthma Coalitions: staff, expertise, community funds
- CDC: funds, technical guidance program tools, & educational materials
- Asthma and Allergy Foundation of America & American Lung Assoc. of CT: Asthma curriculum, educational materials, training
- Schools: asthma surveillance, environmental interventions, asthma educator and expense
- Health Care Providers: clinical management, education, & expertise
- Other State Agencies: DEP, EPA, DSS: funds, regulations, education, environmental monitoring
- Community Agencies: Hospital-based curriculums and trainings for health care providers, staff expertise, & guidance
- Data: BRFS, Medicaid, hospitalization, emergency department, and mortality
- Health Care Payers: reimbursement for asthma care, quality improvement programs to evaluate appropriate care, & case management
- Pharmaceutical companies: funds, educational tools and materials

- Provide most current "best practice" NAEPP clinical guidelines to health care providers.
  - Promote professional education and integration of care among providers, physicians, AE-Cs, nurses, pharmacists
  - Identify need for uniform reimbursement for asthma comprehensive care.
  - Provide curricula and tools to assist and document appropriate care.
- Self-management in Schools, Day Cares and the Community**
- Develop asthma-friendly guidelines and policies for asthma management in these settings
  - Develop asthma training curriculum for all personnel
  - Assess the electronic needs and capabilities of schools to report, get training and access resources

- NAEPP Guidelines disseminated and provided for use to all health care providers.
- Easy Breathing Programs offered to train health care providers to deliver comprehensive care based on NAEPP guidelines.
- All necessary asthma services identified for reimbursement to provide comprehensive care
- Curriculums and tools available and disseminated
- Model guidelines and policies developed
- Curriculum developed for all personnel
- Identify a school that has existing capabilities for electronic reporting, training and accessing resources
- Establish partnerships with local, state and federal agencies with identified programs/initiatives that address environmental issues that impact asthma.
- Develop interventions that address indoor and outdoor environments to reduce asthma triggers and support environmental regulations that limit exposure to environmental triggers.
- Programs to reduce exposure to environmental tobacco smoke are identified

- Health care providers participate in Easy Breathing and Programs increase statewide
- Increase the number and quality of continuing education opportunities for all persons providing asthma care, e.g. certified asthma educators.
- Promote patient education for self-management and reducing environmental triggers as priorities for reimbursement to ensure comprehensive care
- Promote the continuity and coordination of care for persons with asthma through the use of A-APs
- Train ancillary and non-medical professionals who encounter patients with asthma on the disease process, the use of Asthma Action Plans, and the reinforcement of self-management in various settings
- Guidelines, policies, and curricula disseminated statewide
- Provide educational opportunities that increase personnel and patient awareness of the signs, symptoms and seriousness of asthma and that asthma can be effectively controlled and self-managed
- Pilot: electronic reporting, training and provide support in a selected school setting
- Increase the number of programs that address environmental risk factors in the home, school, and work settings
- Template for workplace indoor air quality management programs developed and disseminated
- Promote programs to reduce exposure to environmental tobacco smoke

- Increase provider adherence to NAEPP Guidelines through the appropriate diagnosis and management of asthma by health professionals
- Increase the number of health care providers educated in the treatment and self-management of asthma in accordance with NAEPP Guidelines.
- Increase the number of trained ancillary and non-medical healthcare personnel providing appropriate patient education
- Personnel in school and community settings understand their role to safely respond to the person with asthma
- Increase each patient's knowledge of his/her disease and its management
- Reduce exposure to asthma risk factors through the improvement and management of outdoor and indoor environments including homes, schools and workplaces
- Increase the awareness among the general public of asthma, its risk factors and symptoms and that it can be controlled.
- Increase the awareness of the seriousness of asthma among key institutions, businesses and community organizations.
- Policy changes are submitted through appropriate agencies and approved
- Policies are implemented to support improved asthma care and management efforts and ongoing continuous quality improvement.
- Funds to implement the Plan are received, components of plan are sustained into practice
- Inform implementation of the Plan by collecting and analyzing currently available data as well as identifying data gaps that need to be filled

**Outcomes**

**Short-term**

**Intermediate**

**Long-term**

- Improve** the quality of life for persons with asthma
- Reduce:**
  - asthma-related:
    - morbidity
    - mortality
    - ED visits/hospitalizations
    - lengths of stay
    - direct and indirect costs
    - socio-economic and racial disparities in the above health indicators
  - Reduce or modify environmental triggers that contribute to asthma symptoms
- Decrease:**
  - Number of school and work days lost
  - Prevalence of asthma in CT
- Increase** patient self-management knowledge and provider adherence to NAEPP Guidelines
- Institutionalize and sustain** the changes made as a result of the Plan
- Impact**
  - Reduce the burden of asthma in CT, especially for disparate populations

## The Plan

### Goal 1: Improve Connecticut's surveillance system to identify asthma burden for disparities, high-risk populations, and trends

Connecticut's asthma surveillance system has been used successfully to describe the burden of asthma with respect to estimated prevalence, certain aspects of disease management, and incidence of the most severe events, such as deaths, hospitalizations, and emergency department visits. However, gaps persist in our understanding of how asthma affects Connecticut's population. Although certain racial, socioeconomic, and geographic disparities in asthma burden have been identified, the underlying causes of these disparities are not understood. These deficits challenge our ability to effectively develop, target, and evaluate program activities.

Connecticut's goal is to further develop our surveillance to include data on quality of life, ED utilization, disease management, insurance benefits and policies related to asthma care, and other chronic lung disease. In addition, the reasons behind disparities in asthma will be explored. Conduct further regional and city level data analysis to establish a baseline of comparison for surveillance differences in urban areas. With a comprehensive asthma surveillance program, we expect to more fully characterize asthma in CT, direct program activities so that disparities in its burden are reduced, and measure the impact of our efforts.

#### Objective 1.1: Assess the prevalence and incidence of asthma in Connecticut and identify additional data sources to improve surveillance

**Current and Potential Partners:** CT DPH Office of Planning, CT DPH Environmental and Occupational Health Assessment Program, CT DPH Asthma Program, CT State Department of Education, Local Board of Education, School Nurse Supervisors, School Nurses

**The abbreviations "Short-term" (ST) – Years 1 & 2, "Intermediate-term" (IT) - Years 3 & 4, and "Long-term" (LT) - Year 5 and beyond will be used to denote timing of implementation:**

#### Strategies:

- 1.1.1 Conduct surveillance of asthma prevalence for all persons in CT **ST**  
Performance Indicator:
  - Asthma prevalence estimated, interpreted, and disseminated
- 1.1.2 Continue analysis and surveillance of the prevalence and incidence of work-related asthma for all persons in CT **ST**  
Performance Indicator:
  - Trends and risk areas identified of work-related asthma estimated, interpreted, and disseminated
- 1.1.3 Conduct surveillance of school-based asthma prevalence for all CT public school students in grades that require Health Assessment Records **ST**  
Performance Indicators:
  - School-based asthma prevalence estimated, interpreted, and disseminated

- CT School Health Survey results
- 1.1.4 Improve the accuracy and validity of data collected for school-based asthma **ST**  
Performance Indicators:
- Accuracy and validity of data collected for school-based asthma estimated, interpreted, and disseminated
  - Program guided by or action taken from data
  - Improved accuracy and validity of data collected for school-based asthma
- 1.1.5 Conduct surveillance of asthma prevalence among high and middle school children using data from the CT School Health Survey **ST**  
Performance Indicator:
- Asthma prevalence estimated, interpreted, and disseminated

**Objective 1.2: Assess the health outcomes and impact of asthma, especially to high-risk, disparate populations and improve asthma surveillance in CT at the statewide and local levels**

**Current and Potential Partners:** CT DPH Office of Vital Records, CT DPH Office of Planning, CT DPH Family Health Section, CT DPH Office of Planning, CT DPH Asthma Program, Office of Health Care Access, CT Hospital Association, CT Voices for Children, Asthma Advisory Council (AAC)

**Strategies:**

- 1.2.1 Conduct surveillance of asthma mortality for all persons in CT **ST**  
Performance Indicators:
- Rate of asthma mortality estimated, interpreted, and disseminated
  - Program guided by or action taken from data
- 1.2.2 Conduct surveillance of asthma hospitalizations for all persons in CT **ST**  
Performance Indicators:
- Rate of asthma hospitalization estimated, interpreted, and disseminated
  - Program guided by or action taken from data
- 1.2.3 Conduct surveillance of asthma ED visits for all persons in CT **ST**  
Performance Indicators:
- Rate of asthma ED visit estimated, interpreted, and disseminated
  - Program guided by or action taken from data
- 1.2.4 Conduct surveillance of asthma hospitalizations and ED visits in the Medicaid population, and other populations as identified **ST**  
Performance Indicators:
- Incidence of asthma ED visits and hospitalizations for the Medicaid population estimated, interpreted, and disseminated
  - Program guided by or action taken from data
- 1.2.5 Improve the timeliness and completeness of data collected for available data sets. **ST**  
Performance Indicator:
- Improved timeliness and completeness of data for available data sets
- 1.2.6 Explore reasons for disparities in the health outcomes, differences in asthma control, and impact of asthma in CT to identify effective strategies to reduce disparities **ST**  
Performance Indicators:

- An understanding among AAC members of potential reasons for disparities in CT's asthma burden
  - Program guided or action taken based on this activity
- 1.2.7 Explore methods that will allow the CT Department of Public Health (CT DPH) to receive hospitalization and ED visit data directly from the CHA and also allow the sharing of data with Local Health Departments (LHDs) **IT**  
Performance Indicator:
- CHA submitted hospitalization and ED visit data directly to CT DPH
- 1.2.8 Conduct and expand surveillance of the quality of life of persons in CT with asthma **IT**  
Performance Indicators:
- Quality of life indicators for persons with asthma in CT estimated, interpreted, and disseminated
  - Program guided by or action taken from data
- 1.2.9 Design and initiate a pilot surveillance project of chronic obstructive pulmonary disease (COPD) co-morbidity for all persons in CT **LT**  
Performance Indicators:
- Feasible surveillance protocol for COPD devised
  - Available outcomes related to COPD estimated, interpreted, and disseminated

### **Objective 1.3: Assess asthma management in CT**

**Current and Potential Partners:** CT DPH Office of Planning, CT DPH Asthma Program, Insurance Industry, CT Voices for Children, AAC, University of CT Health Center (UCHC), CT Health Information Network (CHIN), CT Department of Education, LHDs

#### **Strategies:**

- 1.3.1 Conduct surveillance of self-management of persons in CT with asthma **ST**  
Performance Indicators:
- Self-management indicators for persons with asthma in CT estimated, interpreted, and disseminated
  - Program guided by or action taken from data
- Identify existing asthma-related policies and insurance benefit coverage in CT and design and initiate a surveillance protocol to guide systems change for access to insurance payer data **IT**  
Performance Indicators:
- Feasible surveillance protocol for asthma-related policies developed and implemented with results estimated, interpreted and disseminated
  - Feasible surveillance protocol for asthma-related health insurance benefits developed and implemented with results estimated, interpreted and disseminated
  - Program guided by or action taken from data available and data gaps identified
  - Mechanisms and steps identified and followed to mandate insurance provider data to DPH
- 1.3.3 Design consistent language and initiate surveillance of quality of care received by persons with asthma through Program interventions in addition to Medicaid **LT**  
Performance Indicators:
- Quality of care for Medicaid population with asthma in CT estimated, interpreted, and disseminated

- Program guided by or action taken from data

### **Objective 1.4: Explore feasibility of epidemiological review of asthma deaths case by case**

**Current and Potential Partners:** CT DPH Office of Vital Records, CT DPH Asthma Program, CT DPH Infectious Disease Unit (reports), CT Medical Association, CT Office of Chief Medical Examiner, Insurance Industry, CT Hospital Association, Hospitals and EDs, Department of Social Services

#### **Strategies:**

1.4.1 Investigate and evaluate characteristics of asthma cases for all persons in Connecticut that die due to asthma **LT**

##### Performance Indicators:

- Report of the Review Panel's findings written and disseminated
- Action taken based on recommendations of Review Panel

## **Goal 2: Increase awareness and knowledge in the general public and among key asthma stakeholders in the professional community of the signs, symptoms and seriousness of asthma and that asthma can be managed**

Patient education barriers are numerous, including the social stigma of being diagnosed with asthma, inadequate provider efforts, and lack of adherence to treatment. Factors that exacerbate the problem are poverty and lack of resources, homelessness, medical illiteracy, low educational achievement and cultural issues. These factors become barriers to receiving a diagnosis and appropriate care, thus leading to inadequate asthma management and increased asthma exacerbations and healthcare utilization.

The Asthma Program plans to take a comprehensive approach to educating the public on proper asthma management. Existing asthma resources and tools go under-utilized because of the public's unawareness of these assets. The creation and maintenance of a statewide asthma resource inventory on the Program website will provide a central location for the public to learn what resources and tools are available to them. Certified asthma educators are a key resource not being utilized by the community and/or health care providers. Finding a mechanism to adequately compensate these educators for their services will also serve to establish them as a key educational resource.

The Program will continue to provide funding as available to community partners in local health departments to implement evidence-based educational programs and public awareness programs. These programs educate school staff, day care provider staff and health educators regarding proper diagnoses and management of asthma, as well as identification and avoidance of environmental asthma triggers.

Asthma is a complex genetic disorder with a heterogeneous manifestation, largely attributed to the interactions among many genes and between these genes and the environment. As a result of the Human Genome Project and subsequent genetic discoveries, gene variants are being found that increase susceptibility to asthma, but which require an environmental stimulus to activate. In addition, asthma has been found to run in families.<sup>18</sup> This raises the possibility of targeting disease prevention and health promotion efforts to individuals at high risk because of their genetic makeup and family health history.

Family health history efforts have already begun. Following outreach efforts at the end of 2007 by the Connecticut DPH Genomics Office regarding the importance of family health history as a risk factor for chronic diseases, the Asthma Program and other DPH chronic disease programs along with the DPH Genomics Office developed a set of family health history materials to incorporate into community outreach efforts. Inserts were developed for each participating chronic disease program so that the materials could be tailored to their specific programs. Recently completed in 2008, these outreach materials have been disseminated by the Asthma Program at health fairs, meetings, trainings, and other venues and have been very well received.

## **Objective 2.1: Increase multiple outreach avenues to make asthma information widely available**

**Current and Potential Partners:** Asthma Planning Region Coordinators, American Lung Association (ALA), CT Coalition for Environmental Justice, State Department of Education, School Nurses, CT Association of Directors of Health, LHDs

### **Strategies:**

2.1.1 Enhance and maintain the Asthma Program's website **ST**

Performance Indicators:

- Website evaluation consisting of assessment of site usefulness and number of hits
- Site effectiveness can be evaluated via survey

2.1.2 Identify all current asthma patient education/public awareness resources and asthma management programs available in the state of Connecticut and make information available to the public **ST**

Performance Indicators:

- Survey Results
- Resources/ program clearinghouse on website

2.1.3 Promote asthma awareness via public awareness campaigns to support early diagnoses, symptoms, and treatment of asthma **ST**

Performance Indicators:

- Number of public awareness campaigns implemented
- Number of speaker's bureaus created
- Numbers of community presentations made

2.1.4 Publicize asthma help-lines available to the public **ST**

Performance Indicators:

- Creation of help-line
- Number of Calls to the helpline
- Evaluation of helpline effectiveness derived from caller satisfaction inquiries

## **Objective 2.2: Increase the number and types of asthma education opportunities offered to the public that promotes proper asthma management in the home, clinical, daycare, and school settings**

**Current and Potential Partners:** Asthma Planning Region Coordinators, Easy Breathing and Adult Easy Breathing Coordinators, ALA, Asthma and Allergy Foundation of America (AAFA)

### **Strategies:**

2.2.1 Implement, promote and expand asthma initiatives that support patient education **ST**

Performance Indicators:

- Number of and evaluation results of all regional asthma initiatives
- Number of sites implementing Easy Breathing; program outcome data
- Number of sites implementing programs geared towards adults; program outcome data

2.2.2 Assess patient education programs/opportunities that provide asthma education in the clinical settings to standardize and align with best practice guidelines **IT**

Performance Indicator:

- Number of and evaluation results of patient education programs/opportunities in clinical settings

**Objective 2.3: Increase the number of certified asthma educators developed by professional education efforts and connect them to settings without asthma education programs**

**Current and Potential Partners:** ALA, Certified Asthma Educators, Asthma Planning Region Coordinators

**Strategies:**

- 2.3.1 Promote the existence and activities of the certified asthma educators to key stakeholders  
**ST**

Performance Indicators:

- Placement of the contact list on the Asthma Program website; promotion of certified asthma educator engagements on the Asthma Program website
- Increase in the number of certified asthma educator engagements using the number of engagements at the creation of the contact list as the baseline

- 2.3.2 Identify and maintain communication and current contact information with certified asthma educators throughout the state **IT**

Performance Indicator:

- Contact List

**Objective 2.4: Increase asthma education opportunities to the professional non-clinical community**

**Current and Potential Partners:** Asthma Planning Region Coordinators, Easy Breathing and Adult Easy Breathing Coordinators, school staff, LHDs, day care providers, insurers, coaches associations, academic units, e.g. Yale, UCHC, CT Children's Medical Center (CCMC)

**Strategies:**

- 2.4.1 Conduct asthma education/public awareness presentations to professionals. Professionals include but are not limited to school staff, LHDs staff, HMOs, pharmacists, legislators, childcare providers, coaches, and professionals responsible for the indoor air quality of workplaces **ST**

Performance Indicators:

- Presentation curriculums
- Number of presentations held
- Number of funded asthma patient education initiatives
- Outcome data of asthma patient education initiatives

## **Objective 2.5: Increase the availability of and disseminate educational materials for patients with asthma in the school, day care and community settings to enable patients and their families to better understand their asthma, its triggers and its optimal self- management**

**Current and Potential Partners:** DPH Day Care Provider Licensing Unit, State Department of Education, CT Association of Public School Superintendents, CT Association of Boards of Education, Coaches Associations, School Nurses

### **Strategies:**

2.5.1 Identify, develop and utilize asthma patient information that is user-friendly, in appropriate languages and reading levels that are culturally relevant **ST**

#### Performance Indicator:

- By 2009 DPH will have identified and made available printed and electronic resources for patients and their families including improvements in their web site

2.5.2 Promote self-management strategies that empower patients and their families to better manage their asthma with special emphasis on populations at greatest risk in day care, schools, and community settings **ST**

#### Performance Indicator:

- Patients have an individualized written treatment plan called an Asthma Action Plan (AAP) based on NAEPP Guidelines that is shared with others members of the asthma management team as appropriate, i.e.: other health care providers, school nurse, coach, family, and day care staff

## **Objective 2.6: Increase awareness of genetics and family health history as predictors of asthma risk**

**Current and Potential Partners:** Healthcare Provider Professional Organizations, School Nurses, DPH Genomics Team, Local Health Departments, Easy Breathing Contractors

### **Strategies:**

2.6.1 Continue use and widen distribution of new family health history tools and resources. Maintain and provide annual statistical update of the asthma portion of the family health history brochure  
Incorporate the importance of family health history into all asthma educational activities and link asthma initiatives with other chronic disease, genomics, and environmental initiatives and build on existing projects

#### Performance Indicators:

- Current information is maintained on Connecticut DPH Asthma website.
- Asthma statistics are updated annually for inclusion in the CT family health history brochure
- Further strengthen linkages with the Connecticut DPH Genomics Office via work with the internal Gene Team and participation in the Genomics Office's collaborative efforts with chronic disease and family health history promotion

### **Goal 3: Improve systems of asthma care**

Asthma management requires the expertise and input from a variety of individuals including primary care clinicians, patients, parents, employers, asthma specialists and government. The current system, however, is based upon treatment of acute disease symptoms and is not focused on disease prevention or chronic disease management. Improving current systems of asthma care begins with the primary care clinician who must create a partnership and be an active advocate with the patient and family. Clinicians need to educate the patient and family on self-management of their asthma to promote medication compliance and trigger avoidance.

Approaches to asthma management can be streamlined for clinicians to guide NAEPP adherence in a user-friendly form with clear steps to diagnose severity, provide stepwise treatment and management asthma. One program that has been successfully implemented in Connecticut and is currently being used by more than 300 pediatric clinicians in the state is the Easy Breathing<sup>®</sup>.

Successful asthma management should integrate quality care between all health care providers such as ED physicians, school nurses, school-based health centers, employers and primary care clinicians.

Currently, insurance payers do not provide coverage for patient self management education with the exception of some school-based health centers. Patient self-management education is a key component of comprehensive care. The Program will address reimbursement for self-management patient education as a cornerstone of comprehensive asthma care.

#### **Objective 3.1: Decrease the inpatient hospitalizations and emergency department visits with a primary diagnosis of asthma, especially among racial and ethnic minorities.**

**Current and Potential Partners:** Community Health Centers, School Based Health Centers, CT American Academy of Pediatrics (CT AAP), CT College of Emergency Physicians, CT State Medical Society, CT Academy of Family Physicians, and the CT Nurses Association, CT Pharmacists' Association, CT Children's Medical Center, Norwalk Hospital, St Raphael's Hospital, Bridgeport Hospital, National Asthma Education Prevention Program (NAEPP), CT Managed Care Council, DPH Tobacco Cessation Program, American College of Allergy, Asthma, and Immunology, American Academy of Physicians Assistants, CT Thoracic Society, American Association of Physicians Assistants, CT Primary Care Association, American Association of Respiratory Care, National Asthma Educator Certification Board, DPH Licensing Unit, AHEC, UCHC, Yale

#### **Strategies:**

3.1.1 Provide up-to-date asthma information on diagnosis, medications, environmental risk factors, best practices and patient management plans to providers and asthma management partners

#### **ST**

#### Performance Indicator:

- Current knowledge and adherence to NAEPP Guidelines is disseminated and surveys identify level of provider knowledge, adherence to guidelines and best ways to reach providers

- 3.1.2 Promote and encourage the early and appropriate diagnosis and treatment of asthma **ST**  
Performance Indicators:
- The number of clinicians using an asthma management program that promotes adherence to NAEPP Guidelines such as Easy Breathing shows an annual increase, especially in urban areas where hospitalization and ED visits are highest to meet the needs of disparate populations
  - The number of health care clinicians using written asthma treatment (action) plans increases
  - The number of clinicians who assess environmental asthma triggers routinely and implement environmental allergen reduction strategies including smoking prevention and cessation will increase
  - Insurance Payers assist and support patient education reimbursement and pay-for-performance integration
- 3.1.3 Promote use of certified asthma educators in Connecticut **IT**  
Performance Indicators:
- Number of certified asthma educators in the state increases
  - Asthma education by certified asthma educators becomes reimbursable
  - Cost effectiveness of Certified Asthma Educators in various settings such as urban clinics and private practice evaluated
  - Database to track AE-C educator activity in Connecticut is created
- 3.1.4 Link individuals with poorly controlled asthma despite appropriate asthma therapy to a medical home with an emphasis on low-income populations and individuals at greatest risk for death from asthma **IT**  
Performance Indicators:
- Barriers to care are identified and targeted interventions and service providers link high-risk populations to a medical home
  - The number of individuals who have primary care providers and appropriate ongoing medical care increases

**Objective 3.2: Establish a baseline and then increase the number of persons treated for asthma in acute care settings who receive appropriate medications and comprehensive discharge instructions.**

**Current and Potential Partners:** CT College of Emergency Physicians, American Association of Physicians Assistants, CT Children’s Medical center, Norwalk Hospital, St Raphael’s Hospital, Bridgeport Hospital, CT Primary Care Association

**Strategies:**

- 3.2.1 Identify resources to provide access to appropriate asthma medications for those patients who are uninsured or under-insured **ST**  
Performance Indicator:
- Medication access options identified, disseminated and publicized
- 3.2.2 Provide and promote comprehensive discharge instructions to assist Emergency Departments (ED) in adhering to NAEPP Asthma Guidelines for acute asthma management **IT**  
Performance Indicators:
- Current ED discharge instructions identified statewide

- Additional discharge instructions identified that have been evaluated for effectiveness from other sources
- Effective discharge instructions are identified, disseminated and promoted statewide

**3.2.3** Promote an ED/Provider notification system that provides communication with primary care providers within 24 hours of a patient's ED visit **LT**

Performance Indicators:

- Number of EDs using acute asthma management care pathways
- Number of EDs adhering to acute asthma management care pathways for: Template-driven, consistent and complete discharge instructions; Oral steroid use; Follow up with the primary care clinician

**Objective 3.3: Develop a comprehensive, integrated system of asthma care across all healthcare settings.**

**Current and Potential Partners:** Community Health Centers, School Based Health Centers, CT AAP, CT College of Emergency Physicians, CT State Medical Society, CT Academy of Family Physicians, CT Nurses Association, CT Pharmacists Association, CT Children's Medical Center, Norwalk Hospital, St Raphael's Hospital, Bridgeport Hospital, CT Managed Care Council, American College of Allergy, Asthma, and Immunology, American Academy of Physicians Assistants, CT Thoracic Society, American Association of Physicians Assistants, CT Primary Care Association, American Association of Respiratory Care, National Asthma Educator Certification Board, CT Medicaid HUSKY Health Insurance, Private Insurers: Aetna, Anthem, United Health Care, Connecticutcare, Cigna, Pharmacy Management Plans

**Strategies:**

3.3.1 Link physician/payer/pharmacy utilization/patient and patient into care information **LT**

Performance Indicators:

- The number of appropriate medication prescription/dispensing events for those with persistent asthma based on HEDIS standards
- High-risk individuals with persistent asthma are identified and receive appropriate care/referrals

3.3.2 Improve patient tracking and education information dissemination throughout the health care system **LT**

Performance Indicators:

- The number of children who have written asthma treatment plans in the schools is increased
- Electronic records systems are identified and expanded to other venues

**Objective 3.4: Increase the number of medical students, nursing students, and health care students who are trained in asthma management consistent with national asthma guidelines**

**Current and Potential Partners:** LHDs, DPH, State Coalitions, AAC, EPA, DEP

**Strategies:**

- 3.4.1 Support local asthma coalitions with whom DPH can effectively partner to achieve the State Asthma Plan’s objectives better manage asthma in communities and in the home **ST**  
Performance Indicator:
- DPH will promote regular communication between the regional coalitions for the sharing of best practices, the coordination of educational and other activities, and the partnering of coalitions for grant funding opportunities
- 3.4.2 Identify gaps and needed resources to provide support to individuals and families to identify and manage asthma to reach all geographic and demographic sectors of the state **IT**  
Performance Indicators:
- Municipalities in the state will be taking an active part in a regional asthma coalition
  - Regional asthma coalitions will be composed of a diverse group of members who represent the populations and the stakeholders in their region
- 3.4.3 Develop and commit key resources to support regional asthma coalitions **IT**  
Performance Indicators:
- Regional asthma coalitions are integrated with regional contractors to conduct evidence-based asthma activities
  - DPH will take the lead in developing and providing additional resources that support regional coalition

**Objective 3.5: Advocate for uniform reimbursement of comprehensive asthma care in Connecticut**

**Current and Potential Partners:** CT AAP, CT State Medical Society, CT Academy of Family Physicians, and the CT Nurses Association, CT Pharmacists Association, CT Children’s Medical Center, Norwalk Hospital, St Raphael’s Hospital, Bridgeport Hospital, CT Managed Care Council, American College of Allergy, Asthma, and Immunology, American Academy of Physicians Assistants, CT Thoracic Society, CT Primary Care Association, American Association of Respiratory Care, National Asthma Educator Certification Board, CT Medicaid (HUSKY) Health Insurance, Private Insurers: Aetna, Anthem, United Health Care, Connecticut, Cigna, Ledge Light Health District, Environmental Protection Association (EPA) Asthma Unit, Asthma Regional Council, CT Hospital Association

**Strategies:**

- 3.5.1 Facilitate insurance reimbursement for patient education by certified asthma educators in all settings **IT**  
Performance Indicator:
- Reimbursement sources are identified and utilized for patient education by certified asthma educators in all settings and environmental home assessment as part of effective asthma control and management
- 3.5.2 Facilitate reimbursement for appropriate asthma case management for at-risk patients including in-home environmental assessment and asthma case management services for high-risk patients **LT**  
Performance Indicator:

- Increase the number of public/private third party payers that reimburse for appropriate asthma case management for at risk patients, including in home asthma case management services for high-risk patients

### **Objective 3.6: Train future health care providers in establishing and implementing a system of asthma management consistent with national asthma guidelines**

**Current and Potential Partners:** CT Children's Medical Center, Norwalk Hospital, St Raphael's Hospital, Bridgeport Hospital, Academic Institutions for Medical and Health Care  
**Provider Education:** Nursing, Physician Assistants, Respiratory Therapists, Pharmacists, APRNs

#### **Strategies:**

3.6.1 Introduce NAEPP Guidelines as the standard for asthma management in medical schools; nursing schools; schools of pharmacy, respiratory therapy programs, and physician's assistant's school curricula **ST**

#### Performance Indicator:

- Professional education curricula adhere to NAEPP Guidelines

## **Goal 4: Reduce exposure to environmental conditions that cause and/or exacerbate asthma**

Environmental factors play a significant role in the health of people with asthma. Biological and chemical exposures found in indoor home, school and work environments can affect those with existing asthma; knowledge of and avoidance of individual environmental asthma triggers is an accepted part of asthma prevention and treatment.

The importance of addressing the environment is underscored by research reported since Connecticut's Statewide Asthma Plan was issued in 2003. Early reports from the Children's Health Study in California strongly correlated lower respiratory symptoms with increasing exposure to outdoor pollutants in children with asthma.<sup>20</sup> Continuing information from this study note that outdoor pollutants affect lung development in children 10- 18 years old<sup>21</sup> and further reports suggest that this reduced respiratory function is a factor in new onset of asthma.<sup>22</sup> Attention to outdoor sources-especially from diesel emissions associated with traffic is an important aspect of this plan.

The plan aggressively addresses indoor environmental exposures. Respiratory and asthma related outcomes are strongly associated with building dampness.<sup>23</sup> A home intervention study notes that building renovation directed at moisture problems combined with medical and behavioral intervention reduced symptom days significantly for some children with asthma.<sup>24</sup> The American Academy of Pediatrics Committee on Environmental Health issued a policy statement in December 2006 recommending that the presence of mold should be part of a "healthy-home inventory". Chemical emissions in non-industrial environments are also of concern and may be an important respiratory symptom risk factor.<sup>25</sup> Additionally, chemical exposure is especially important in certain occupational settings where there is potential for exposure to specific asthmagens such as isocyanates in automotive body shops. Recently published reviews identify that exposures in work environments commonly promote asthma exacerbations<sup>26</sup> and that occupational exposures are indicated in incidence of new onset asthma in adults.<sup>27</sup> In Connecticut, the most frequently reported cause of occupational asthma is indoor air exposures.

It is clear that attention to environment has a role in asthma management. This plan recognizes the significant challenges to environmental intervention, especially in addressing the indoor environment. There are minimal resources and accountability to remediate indoor environments. Healthcare providers in clinical settings have limited time to fully explore home, work, and school environments with patients. Healthcare Providers are not always knowledgeable about the relationship of building conditions to asthma. Collaboration among Managed Care Organizations (MCOs), providers, municipalities and the state have been limited to individual programs to address environmental issues.

The strategies put forth in this section address these challenges and resource limitations. Building on environmental and public health initiatives and programs currently in place in Connecticut the plan can focus attention on home environmental exposures.

## **Objective 4.1: Reduce the number of children who are exposed to diesel and particulate matter pollution in schools, consistent with the Connecticut Clean Diesel Plan.**

**Current and Potential Partners:** CT Department of Environmental Protection, CT Department of Transportation, Local Boards of Education, State Department of Education, Private Bus Companies, CT Resource Recovery Authority, Private Trash Hauling Industry, CT Department of Motor Vehicles

### **Strategies:**

4.1.1 Promote diesel and particulate matter reduction technologies for school buses by use of environmental technologies **IT**

Performance Indicator:

- Completion of school bus retrofits in identified communities

4.1.2 Promote diesel and particulate matter reduction technologies for off-road equipment, trucks and solid waste collection vehicles by use of environmental technologies **IT**

Performance Indicators:

- Completion of retrofitting of off-road diesel equipment used at the Hartford Solid Waste facility and solid waste collection vehicles used in Hartford
- Completion of retrofitting and use of ultra low sulfur diesel fuel for off-road diesel equipment in volume reduction solid waste facility permits
- Implementation of retrofitting of off-road construction equipment and vehicles used in Connecticut Department of Transportation projects requiring an Indirect Source Permit, pursuant to Regulation of Connecticut State Agencies Section 22a-174-100
- Truck stop electrification project established

4.1.3 Promote enforcement of emissions reduction from motor vehicle use by state residents **LT**

Performance Indicator:

- Effective enforcement of the California Low Emission Vehicle Program

## **Objective 4.2: Reduce by 5% of current DEP baseline the ozone precursor and particulate matter emissions from stationary sources including electric generators, boilers, turbines and industrial processes**

**Current and Potential Partners:** CT Department of Environmental Protection, EPA Region I, UCONN –Center for Environmental Science and Engineering (CCESE)

**Current and Potential Partners:** CT Department of Environmental Protection, EPA Region I, UCONN –Center for Environmental Science and Engineering (CCESE)

### **Strategies:**

4.2.1 Implement the eight-hour Ozone State Implementation Plan (SIP) and the strategies contained within this SIP. For information on this SIP please refer to the following website: [http://www.ct.gov/dep/cwp/view.asp?a=2684&q=385886&depNav\\_GID=1619](http://www.ct.gov/dep/cwp/view.asp?a=2684&q=385886&depNav_GID=1619)

**LT**

Performance Indicator:

- Monitored reductions in diesel particulate matter

**Objective 4.3: Maintain and increase infrastructure and programs to develop the capacity of people with asthma, especially people experiencing disparate risk of asthma burden, to identify, avoid, and reduce exposure to indoor environmental asthma triggers**

**Current and Potential Partners:** New England Asthma Regional Council, State/Public Housing Authorities, Department of Social Services (DSS), Department of Economic and Community Development (DECD), CT Housing Finance Authority (CHFA), CTDPH Asthma Program, LHDs, Center for Indoor Environments and Health at UCHC

**Strategies:**

4.3.1 Encourage providers to recommend in-home visits when appropriate and to address environmental factors in the development of patient AAPs using programs such as *Putting on AIRS IT*

Performance Indicators:

- LHDs to take leadership role with data on reduction in intervention and visits
- Establish training sessions for in-home environment assessments
- Funding available to LHDs for in-home assessments
- Assessment if providers are completing AAPs
- LHDs enforce existing public health codes

4.3.2 Establish a program in LHDs to address “asthma healthy homes” **IT**

Performance Indicators:

- LHDs participate in the program
- Training seminars in IPM and collect data on successes with implementing integrated pest management process are established
- Number of IPM packets distributed and attendance at training sessions
- Number of IPM trainings conducted

4.3.3 Encourage environmental intervention including in-home assessment as well as procurement and distribution of supplies for reducing exposure to indoor environmental triggers **IT**

Performance Indicators:

- Number of health insurance companies encouraged to provide reimbursement
- Number of vendors contacted
- Number of vendors supplying materials

4.3.4 Establish policies that require new and rehabilitated (federal and state) housing to comply with standards that promote good indoor air quality, using regional HUD initiatives such as the Asthma Regional Council’s model **LT**

Performance Indicators:

- Collaborations with DSS, DECD and CHFA for distribution of resource information to LHDs, Housing Authorities and other housing organizations established
- Training in the assessment and treatment of housing related health hazards associated with asthma triggers established
- Number of packets distributed and attendance at training sessions

- Legislation introduced specific to provide funding for repairs and improvements to state housing units

**Objective 4.4: Increase the capacity of schools and childcare settings, including other congregate care settings such as group homes, residential facilities and detention settings, to identify, avoid and reduce exposure to environmental asthma triggers**

**Current and Potential Partners:** CT Indoor Environment Resource Team, CT DPH Indoor Environments Unit, CT DPH Asthma Program, ALA, Department of Children and Families, Department of Mental Retardation, JJ/CSSD, CT Department of Social Services, and CT Department of Education

**Strategies:**

4.4.1 Address indoor environment in schools, daycares, and other group child care settings **ST**

Performance Indicators:

- Schools will implement and/or plan to implement TfS and/or other similar programs
- Day Care facilities will take steps to reduce environmental hazards in their setting
- State run/state licensed child caring facilities will begin addressing indoor air quality in their facilities and provide training to employees managing those settings

4.4.2 Promote best practices that encompass environmental impact of school construction on the health of the staff and children from exposure to potential asthma triggers **LT**

Performance Indicators:

- Number of schools rated “High Performance Schools” through their healthy design and construction
- Reference materials on SMACNA guidelines distributed to school districts and boards of education
- SMACNA guidelines included in the specs for school construction bids
- Construction contracts with SMACNA incorporated into specifications

**Objective 4.5: Increase the capacity of health care professionals to identify and report work-related asthma**

**Current and Potential Partners:** CT DPH Occupational Health Unit, CT DPH Asthma Program, Occupational Safety and Health Administration (Conn-OSHA), Yale Occupational Medicine Program, UCHC Occupational and Environmental Health Center

**Strategies:**

4.5.1 Encourage healthcare providers to ask adults with asthma or asthma-related symptoms about their workplaces **IT**

Performance Indicators:

- Number of primary care physicians and sub-specialists in the state receiving outreach contact
- Development of DPH web content for guidance on taking an appropriate work history

- 4.5.2 Promote awareness among health care providers about the process for reporting work-related asthma to the Connecticut DPH and the Department of Labor, and the importance of doing so **IT**

Performance Indicators:

- Number of primary care physicians and sub-specialists in the state receiving outreach contact
- Development of DPH web content for guidance on reporting work-related asthma
- More individual practitioners reporting cases of work-related asthma to Connecticut DPH/DOL
- Number of physician reports to Departments of Public Health and Labor

**Objective 4.6: Increase the capacity of employees, employers, unions, Connecticut State agencies including Connecticut DPH and Conn-OSHA safety and health officers to identify and reduce exposures to work and building-related asthma agents and respiratory irritants**

**Current and Potential Partners:** CT DPH Occupational Health Unit, CT DPH Asthma Program, University of CT Health Center, Yale University, Conn-OSHA, CT Schools Indoor Environment Resource Team, Local Municipalities, Department of Labor, OSHA, Federal OSHA, UCHC, DCF

**Strategies:**

- 4.6.1 Provide resources and promote awareness regarding exposures to chemicals in occupational settings of concern for asthma, especially latex, isocyanates, metal-working fluids, and cleaning chemicals **LT**

Performance Indicators:

- Fact sheets on latex use produced and disseminated to childcare, food and health service businesses
- Information on reducing exposure to asthmagens disseminated to auto body repair shops.
- Developed and implemented an outreach program targeting the metal working industry in Connecticut to encourage appropriate management of metal working fluids.
- Occupational illnesses and asthma in employer newsletters, programs, TV and print media education/training programs provided to targeted audiences above are promoted

**Objective 4.7: Increase awareness and resources to improve the indoor environment in non-industrial work places to promote asthma healthy environments**

**Current and Potential Partners:** CT DPH Indoor Environments Unit, CT DPH Occupational Health Unit, CT DPH Asthma Program, CT Department of Public Works, CT Department Administrative Services, UCHC Center for Indoor Environments and Health, Department of Labor, CT Business and Industry Association (CBIA)

**Strategies:**

4.7.1 Provide work-related asthma resources and other support to appropriate stakeholders interested in improving indoor air quality in workplaces **ST**

Performance Indicators:

- Development of a formal report on work-related asthma in Connecticut
- Number of requests for work-related asthma data from stakeholders
- Development of Connecticut DPH web content containing the work-related asthma report
- Number of requests from stakeholders to have Connecticut DPH staff participate in workplace air quality initiatives

4.7.2 Identify existing or develop new web-based resources with information for improving indoor air quality available to non-industrial employers **ST**

Performance Indicators:

- Develop and post additional web-based indoor air quality resources on the Connecticut DPH website
- Number of business groups and insurers made aware of the increased availability of indoor air quality educational and guidance documents on the Connecticut DPH website

4.7.3 Participate in activities to increase the number of state agencies, municipalities, and private-sector non-industrial employers utilizing the Tools for Offices (TfO) program developed by the Connecticut DPH Indoor Environments Unit **IT**

Performance Indicators:

- Completion of full implementation and evaluation of the TfOB program at Connecticut DPH
- Number of state agencies implementing the TfOB program
- Number of municipalities and private-sector non-industrial employers requesting the TfO Toolkit
- Number of municipalities and private-sector non-industrial employers implementing the TfO program

4.7.4 Identify methods and resources necessary and produce a comprehensive report on work-related asthma in public buildings as well as in private office settings and other non-industrial buildings **LT**

Performance Indicators:

- Completed report summarizing Connecticut DPH/DOL physician reports for work-related asthma
- Number of health care providers receiving educational materials and other tools, such as the UCONN Health Center's "Guidance for Clinicians on the Recognition and Management of Health Effects related to Mold Exposure and Moisture Indoors" document, through outreach programs
- Number of worker's compensation cases among state workers with respiratory disease secondary to Indoor Air Quality (IAQ), moisture, or mold identified in Connecticut Comptrollers annual report

## **Objective 4.8: Reduce the number of people with asthma and all children who are exposed to environmental tobacco smoke**

**Current and Potential Partners:** CT DPH Tobacco Program, CT DPH Asthma Program, CT State Department of Education, CT Business and Industry Association, Housing Authority, Mashantucket Pequot Tribal Nation, Mohegan Tribal Nation

### **Strategies:**

4.8.1 Promote smoking bans for both indoor and outdoor public areas **ST**

#### Performance Indicators:

- Number of educational programs conducted to educate the public on second hand smoke
- Number of schools having comprehensive tobacco-free school policies
- Number of work place, including restaurants and bars, compliant with state smoking ban
- Number of small businesses and private clubs who adopt smoking ban
- Number of public venues that are smoke-free
- Signage with the message to move smokers away from doorways developed and the template made available on Connecticut DPH web site

4.8.2 Make tobacco products less accessible to minors to discourage smoking initiation. **ST**

#### Performance Indicators:

- Decreased sale of tobacco products to minors
- Policy introduced to make tobacco products less accessible and affordable

4.8.3 Encourage tobacco cessation programs and making tobacco cessation programs accessible, financially, culturally, and geographically, to all tobacco users **ST**

#### Performance Indicators:

- Number of schools having comprehensive tobacco-free school policies that include tobacco cessation services to all students, families and staff
- Number of insurance companies, including Medicaid, to cover smoking cessation services and medications as part of their basic plans, especially for parents/guardians of asthmatic children, teens and pregnant women
- Adequate funding for Connecticut Quitline to support nicotine replacement therapy and counseling services

4.8.4 Establish a pilot program for Housing Authority to provide smoke-free housing **LT**

#### Performance Indicators:

- A policy established to implement tobacco-free housing units within Housing Authority
- Number of Housing Authority units adapting tobacco-free housing policy

## **Goal 5: Increase the awareness and use of standardized guidelines for asthma self- management in educational and community settings**

People with asthma in Connecticut, especially children in day cares and schools, do not currently have standardized support systems and policies in place in these settings to effectively self-manage children with asthma in these settings. Without uniform day care and school policies, some children encounter difficulty in accessing inhalers and nebulizers when they need them thereby putting them at risk for more severe asthma exacerbations.

Improvement of environmental settings to reduce or eliminate asthma triggers and promote a healthier indoor environment is necessary to reduce the number of missed school and work days. Meeting the needs of all individuals with asthma requires improved environments in all settings.

The Program will continue implementation of the EPA Tools for Schools Program, and add our recently developed and initiated Tools for Technical Schools and Tools for Offices Programs to provide additional environmental interventions in these settings.

The use of written AAPs that are individualized and physician-directed to support self-management of asthma by the patient and/ or parent is needed to enable people with asthma to adequately control their asthma symptoms. When people with asthma know what to do when asthma symptoms start it can reduce hospitalization and ED visits and lead to appropriate treatment by other health care providers in day care, school, institutions of higher education, and community settings.

### **Objective 5.1: Increase the number of Asthma-friendly policies and guidelines for appropriate asthma management in schools and the community**

**Current and Potential Partners:** AAC, State Department of Education (SDE), CT AAP, Allergy & Asthma Network Mothers of Asthmatics, CT Association of Public School Superintendents, CT Association of Boards of Education, School Nurses, ALA, CT Nurses Association, The Association of School Nurses in CT, CT Charts a Course

#### **Strategies:**

5.1.1 Partner with other concerned agencies and entities to survey entities statewide for existing policies and guidelines in effect in schools and communities **ST**

##### Performance Indicators:

- Partnerships will be formed and functioning
- Survey(s) conducted

5.1.2 Identify new resources and update existing Guidelines for the Management of Asthma in Schools and provide training on asthma management for school nurses and other staff **ST**

##### Performance Indicators:

- All schools in Connecticut will have guidelines for asthma management and will conduct periodic training of school personnel
- All schools in Connecticut will receive periodic assistance from the AAC in the form of best practices and guideline updates
- Use of guidelines and staff trainings conducted are evaluated

- Number of AAPs
- 5.1.3 Revitalize and empower the school medical advisor role and develop a model for roles and responsibilities that can be adopted by local schools boards and required through regulatory changes **ST**  
Performance Indicators:
- School Medical Advisor roles and responsibilities model developed
  - Regulatory changes made that require school boards to adopt a comprehensive model that defines roles and responsibilities of the school medical advisor
- 5.1.4 Facilitate statewide implementation of asthma inhaler law and other asthma-related regulations in all Connecticut schools **IT**  
Performance Indicator:
- All schools in Connecticut will have systems and policies in place to support implementation of the inhaler law and other asthma-related regulations
- 5.1.5 Standardize school nurse software for data collection for asthma reporting **LT**  
Performance Indicators:
- Most common school electronic medical record software identified that can be modified for use statewide
  - Electronic capability gaps identified and resources provided
  - School nurse training curriculum developed, pilot-tested, evaluated and rolled out statewide to all school districts

**Objective 5.2: Increase awareness of asthma-friendly policies and guidelines for asthma management available for implementation in daycare and other pre-school settings**

**Current and Potential Partners:** AAC, SDE, CT DPH Day Care Licensing Unit, CT AAP, Allergy & Asthma Network Mothers of Asthmatics, CT Association of Public School Superintendents, CT Association of Boards of Education, ALA of CT, CT Nurses Association

**Strategies:**

- 5.2.1 Promote Guidelines for the Management of Asthma in the Day Care/Pre-School Setting and promote training on asthma management for personnel in such programs **ST**  
Performance Indicators:
- All licensed daycare/pre-school settings in Connecticut will have guidelines for asthma management and will conduct periodic training of program personnel
  - All licensed -daycare and pre-school settings will receive periodic assistance from the AAC in the form of best practices and guideline updates
  - Use of guidelines and staff trainings conducted are evaluated
  - Use of AAPs is quantifiable
  - Quick relief medications policy in place

### **Objective 5.3: Increase dissemination of asthma guidelines to institutions of higher learning concerning best practices for the management of asthma in such settings**

**Current and Potential Partners:** AAC, American College Health Association, CT Institutions of Higher Learning

#### **Strategies:**

5.3.1 Identify existing asthma management guidelines in Institutional health services settings  
**ST**

Performance Indicator:

- Best Practices for asthma management are identified and/or developed and provided to College Health offices statewide

5.3.2 Provide guidelines and educational materials appropriate for students of higher education for use by colleges and similar institutions **IT**

Performance Indicator:

- Appropriate asthma educational materials will be disseminated to institutions of higher education and via the Connecticut DPH web site

### **Objective 5.4: Increase awareness and dissemination of asthma guidelines for optimal asthma care to be available for the management of children and adults in organized activities outside of school such as camp, after-school programs and town Park and Recreation events**

**Current and Potential Partners:** CT High School Coaches Association, CT Association of Schools, CT Interscholastic Athletic Conference, CT AAP, CT AAP, State Department of Education, CT DPH Camp Licensing Unit, Municipal Recreation Programs

#### **Strategies:**

5.4.1 Recommendations will be developed and disseminated to programs that operate outside of regular school hours concerning best practices for the management of asthma in such settings **IT**

Performance Indicator:

- Guidelines and associated resources in place

## **Goal 6: To create an environment that supports effective and comprehensive care through the engagement of consumers, providers and asthma-related agencies**

The Asthma Program can provide surveillance data and promote facts to community partners for systems change. Systems change can happen through collaborative partnerships to improve the delivery of appropriate clinical services, asthma education, and the maintenance of an environment free of air pollutants and asthma triggers.

### **Objective 6.1: Increase the number of partners with expertise in advocacy and systems change that can identify and act on opportunities for systems or policy changes that improve asthma outcomes**

**Current and Potential Partners:** Regional and statewide asthma coalition members, AAC, Professional Organizations, Legislators, People with Asthma, Insurance Providers

#### **Strategies:**

6.1.1 Identify individuals with knowledge of systems change and policy development that are invested in promoting systems change related to asthma through the AAC **ST**

##### Performance Indicator:

- Individuals with expertise are on the AAC and invested in need for system's change

6.1.2 Support key individuals and provide facts such as data and best practice standards to AAC members and partners to inform them on need for change during the process **IT**

##### Performance Indicator:

- Statewide partners understanding of the need for change, are in possession of necessary facts, and take action on next steps needed for system's change

#### **Policy Considerations:**

##### Surveillance:

Seek legislative change that will require submission hospitalization and ED visit data directly to Connecticut DPH

##### Patient Education/Public Awareness:

- Mandate asthma education and smoking cessation education in the schools to faculty and students
- Put policy in place to develop and/or enforce housing codes that make dwellings more asthma friendly
- Set up a mechanism through the insurance companies to get asthma educators reimbursed for their services

##### Clinical Management:

- Insurance payers assist and support patient self-management education reimbursement and pay-for-performance integration

Schools and Communities:

- Amend the school statute for self-administration of medications in schools to **require** a self-administration policy be in place in every school district for asthma inhalers and anaphylactic medications

Environment:

- Include retrofitting requirements and use of ultra low sulfur diesel fuel for off-road equipment in volume reduction solid waste facility permits during renewal
- Require retrofitting of off-road construction equipment and vehicles used in CT Department of Transportation projects requiring an Indirect Source Permit, pursuant to Regulation of CT State Agencies Section 22a-174-100
- Work with state housing coalitions and organizations for legislation to provide funding for repairs and improvements to state housing units to reduce the presents of asthma triggers and promote healthy housing
- Support legislation on green building construction
- Promote smoking ban in public venues such as playgrounds, beaches, and parks
- Collaborate with other state agencies to explore establishing a policy to implement tobacco-free housing units within Housing Authority
- Support legislation to make policy that would make tobacco products less accessible and affordable

## Conclusion

This revised Plan is a continuation of work from the last five years and an addition of new goals and objectives for the next five years to guide other state agencies, healthcare providers, community partners, and stakeholders to achieve the mission of the Program. The Plan has a priority focus of disparate populations in urban settings that will increase awareness, plan and implement evidenced-based interventions, evaluate initiatives, and to provide factual information and surveillance data to partners/advocates that propose systems change policies.

Current interventions will be promoted for inclusion into standard policies and practices within LHDs, including the Pediatric Easy Breathing Program, Putting on Airs Program, Asthma and Allergy Essentials for Day Care Providers Program, Open Airways for Schools Program, Adult Easy Breathing Program, Asthma Awareness and Education Program, Tools for Schools Program, Tools for Office Buildings Program, and Tools for Technical Schools Program.

The Revised Plan also identifies six goals, each with specific objectives and strategies that link partners and collaborators. These goals include

- Assessing Connecticut's asthma burden to identify disparities, high-risk populations, and trends,
- Increasing awareness and knowledge in the general public and among key asthma stakeholders in the professional community of the signs, symptoms and seriousness of asthma and that asthma can be managed,
- Improving systems of asthma care
- Reducing exposure to environmental factors that cause and/or exacerbate asthma
- Reducing barriers to self-management in people with asthma in the community and schools, and
- Creating an environment that supports effective and comprehensive care through the engagement of consumers, providers and asthma-related agencies

Key stakeholders and partners will work together over the next five years to implement the plan, monitor implementation progress and evaluate effectiveness and impact of the Plan's goals through membership in the Asthma Advisory Council (AAC) and participation in quarterly meetings each year. The Plan will address the needs of people in the state with the highest burden by targeting these populations to implement interventions focusing on the environment, clinical management and professional education, as well as patient education and public awareness.

## Appendix A

### Work Plan Matrix

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|---|
| <b>Goal 1: Assess Connecticut’s Asthma Burden to Identify Disparities, High-risk Populations, and Trends</b>  |
| <b>Objective 1.1: Assess the prevalence and incidence of asthma in Connecticut.</b>   |
| <p><b>Strategies:</b></p> <p>1.1.1 Conduct surveillance of asthma prevalence for all persons in Connecticut</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Maintain and enhance the participation in the BRFSS Core Asthma Module and Optional Child Module</li> <li>• Obtain BRFSS data from the Office of Planning at the Connecticut DPH</li> <li>• Analyze the data and interpret the findings</li> <li>• Disseminate the findings in Surveillance Reports or Fact Sheets</li> </ul> <p><u>Performance Indicator:</u></p> <ul style="list-style-type: none"> <li>• Asthma prevalence estimated, interpreted, and disseminated</li> </ul>  |
| <p>1.1.2 Continue analysis and surveillance of the prevalence and incidence of work-related asthma for all persons in Connecticut</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Obtain work-related asthma data from the Environmental and Occupational Health Assessment Program at the Connecticut DPH</li> <li>• Analyze the data and interpret the findings</li> <li>• Disseminate the findings in Surveillance Reports or Fact Sheets</li> </ul> <p><u>Performance Indicator:</u></p> <ul style="list-style-type: none"> <li>• Trends and risk areas identified of work-related asthma estimated, interpreted, and disseminated</li> </ul>  |
| <p>1.1.3 Conduct surveillance of school-based asthma prevalence for all Connecticut public school students in grades that require Health Assessment Records</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Administer and coordinate the collection of school-based asthma surveillance data</li> <li>• Manage the surveillance system and perform quality assurance</li> <li>• Analyze the data and interpret the findings</li> <li>• Disseminate the findings in the tri-annual Legislative Report to the General Assembly and Surveillance Reports or Fact Sheets</li> </ul> <p><u>Performance Indicators:</u></p> <ul style="list-style-type: none"> <li>• School-based asthma prevalence estimated, interpreted, and disseminated</li> <li>• Connecticut School Health Survey results</li> </ul> |
| <p>1.1.4 Conduct quality assurance to improve the accuracy and validity of data collected for school-based asthma</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Conduct a pilot project with a sample of schools</li> <li>• Review records of children with asthma in the schools</li> <li>• Investigate the accuracy and validity of information</li> <li>• Document and disseminate the findings</li> <li>• Insurance payers to set diagnosis of asthma definition and coding</li> </ul> <p><u>Performance Indicators:</u></p>   |

|  |
|--|
| <ul style="list-style-type: none"> <li>• Accuracy and validity of data collected for school-based asthma estimated, interpreted, and disseminated</li> <li>• Program guided by or action taken from data</li> <li>• Improved accuracy and validity of data collected for school-based asthma</li> </ul>  |
| <p>1.1.5 Conduct surveillance of asthma prevalence among high and middle school children using data from the Connecticut School Health Survey</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Obtain data from the Office of Planning at the Connecticut DPH</li> <li>• Analyze and interpret findings</li> <li>• Disseminate the findings in Surveillance Reports and Fact Sheets</li> </ul> <p><u>Performance Indicator:</u></p> <ul style="list-style-type: none"> <li>• Asthma prevalence estimated, interpreted, and disseminated</li> </ul>   |
| <p><b>Objective 1.2: Assess the health outcomes and impact of asthma and improve asthma surveillance in Connecticut at the statewide and local levels</b></p>  |
| <p><b>Strategies:</b></p> <p>1.2.1 Conduct surveillance of asthma mortality for all persons in Connecticut.</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Obtain mortality data from the Office of Vital Records at the Connecticut DPH</li> <li>• Analyze the data and interpret the findings</li> <li>• Disseminate the findings in Surveillance Reports or Fact Sheets</li> </ul> <p><u>Performance Indicators:</u></p> <ul style="list-style-type: none"> <li>• Rate of asthma mortality estimated, interpreted, and disseminated</li> <li>• Program guided by or action taken from data</li> </ul>                             |
| <p>1.2.2 Conduct surveillance of asthma hospitalizations for all persons in Connecticut</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Obtain hospitalization data from the Office of Health Care Access through the Office of Planning at the Connecticut DPH</li> <li>• Analyze the data and interpret the findings</li> <li>• Disseminate the findings in Surveillance Reports or Fact Sheets</li> </ul> <p><u>Performance Indicators:</u></p> <ul style="list-style-type: none"> <li>• Rate of asthma hospitalization estimated, interpreted, and disseminated</li> <li>• Program guided by or action taken from data</li> </ul> |
| <p>1.2.3 Conduct surveillance of asthma ED visits for all persons in Connecticut</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Obtain ED visit data from the Connecticut Hospital Association (CHA) through the Family Health Section at the Connecticut DPH</li> <li>• Analyze the data and interpret the findings</li> <li>• Disseminate the findings in Surveillance Reports or Fact Sheets</li> </ul> <p><u>Performance Indicators:</u></p> <ul style="list-style-type: none"> <li>• Rate of asthma ED visit estimated, interpreted, and disseminated</li> <li>• Program guided by or action taken from data</li> </ul>         |
| <p>1.2.4 Conduct surveillance of asthma hospitalizations and ED visits in the Medicaid population, and other populations as identified</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Obtain analytical report about Medicaid managed care data from the Connecticut Voices for Children</li> <li>• Disseminate the findings in Surveillance Reports or Fact Sheets</li> </ul> <p><u>Performance Indicators:</u></p> <ul style="list-style-type: none"> <li>• Incidence of asthma ED visits and hospitalizations for the Medicaid population estimated, interpreted, and disseminated</li> </ul>                                     |

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|---|
| <ul style="list-style-type: none"> <li>• Program guided by or action taken from data</li> </ul>   |
| <p>1.2.5 Improve the timeliness and completeness of data collected for available data sets</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Track the process from request to receipt of available data sets</li> <li>• Perform quality assurance on available data sets</li> <li>• Update data sets based on quality assurance findings</li> <li>• Document the completeness of data collected for available data sets</li> </ul> <p><u>Performance Indicator:</u></p> <ul style="list-style-type: none"> <li>• Improved timeliness and completeness of data for available data sets</li> </ul>  |
| <p>1.2.6 Explore reasons for disparities in the health outcomes, differences in asthma control, and impact of asthma in Connecticut to identify effective strategies to reduce disparities</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Review Surveillance Reports for disparities to examine trends, prevalence, and disparities</li> <li>• Identify potential reasons for disparities in the health outcomes and impact of asthma</li> <li>• Present potential reasons for disparities to the AAC</li> </ul> <p><u>Performance Indicators:</u></p> <ul style="list-style-type: none"> <li>• An understanding among AAC members of potential reasons for disparities in Connecticut’s asthma burden</li> <li>• Program guided or action taken based on this activity</li> </ul>   |
| <p>1.2.7 Explore methods that will allow the Program to receive hospitalization and ED visit data directly from the CHA and also allow the sharing of data with LHDs</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Collaborate with CHA to establish a mechanism for hospitalization and ED visit data submission</li> <li>• Seek legislation change that will require CHA to submit hospitalization and ED visit data directly to Connecticut DPH</li> <li>• Establish a data sharing agreement with Local Health Departments</li> <li>• Identify mechanism for data sharing and establish a data sharing protocol with Local Health Departments</li> </ul> <p><u>Performance Indicators:</u></p> <ul style="list-style-type: none"> <li>• CHA submitted hospitalization and ED visit data directly to Connecticut DPH</li> <li>• Hospitalization and ED visit data shared with LHDs</li> </ul> |
| <p>1.2.8 Conduct and expand surveillance of the quality of life of persons in Connecticut with asthma</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Maintain and enhance the participation in the BRFSS Optional Adult Module, Adult Asthma Call-Back, and Child Asthma Call-Back</li> <li>• Obtain BRFSS and Asthma Call-Back data from the Office of Planning at the Connecticut DPH</li> <li>• Analyze the data and interpret the findings</li> <li>• Disseminate the findings in Surveillance Reports or Fact Sheets</li> </ul> <p><u>Performance Indicators:</u></p> <ul style="list-style-type: none"> <li>• Quality of life indicators for persons with asthma in Connecticut estimated, interpreted, and disseminated</li> <li>• Program guided by or action taken from data</li> </ul>  |
| <p>1.2.9 Design and initiate a pilot surveillance project of COPD co-morbidity for all persons in Connecticut</p> <p><u>Action Steps:</u></p>   |

- Review potential existing sources of information on COPD
- Design a pilot surveillance system to obtain additional information on COPD
- Implement the plan to collect the additional information
- Analyze the data and interpret the findings
- Disseminate the findings in Surveillance Reports or Fact Sheets

Performance Indicators:

- Feasible surveillance protocol for COPD devised
- Available outcomes related to COPD estimated, interpreted, and disseminated

**Objective 1.3: Assess asthma management in Connecticut**

**Strategies:**

1.3.1 Conduct surveillance of self-management of persons in Connecticut with asthma

Action Steps:

- Maintain and enhance the participation in the BRFSS Optional Adult Module, Adult Asthma Call-Back, and Child Asthma Call-Back
- Obtain BRFSS and Asthma Call-Back data from the Office of Planning at the Connecticut DPH
- Analyze the data and interpret the findings
- Disseminate the findings in Surveillance Reports or Fact Sheets

Performance Indicators:

- Self-management indicators for persons with asthma in Connecticut estimated, interpreted, and disseminated
- Program guided by or action taken from data

1.3.2 Design and initiate surveillance of existing asthma-related policies and insurance benefit coverage in Connecticut

Action Steps:

- Develop mechanisms to receive information on asthma-related policies from public schools
- Develop mechanisms to receive information on asthma-related insurance benefit coverage from insurance companies and partner to standardize coverage that align with NAEPP guidelines
- Summarize the information and disseminate the findings
- Pursue feasibility of mandating insurance provider data to DPH

Performance Indicators:

- Feasible surveillance protocol for asthma-related policies developed and implemented with results estimated, interpreted and disseminated
- Feasible surveillance protocol for asthma-related health insurance benefits developed and implemented with results estimated, interpreted and disseminated
- Program guided by or action taken from data available and data gaps identified
- Mechanisms and steps identified and followed to mandate insurance provider data to DPH

1.3.3 Design consistent language and initiate surveillance of quality of care received by persons with asthma through Program interventions in addition to Medicaid

Action Steps:

- Expand and enhance existing projects examining quality of care received by Medicaid population at the Connecticut Voices for Children in addition to state-funded asthma initiatives
- Analyze the data and interpret the findings
- Disseminate the findings

Performance Indicators:

- Quality of care for Medicaid population with asthma in Connecticut estimated, interpreted, and disseminated

- Program guided by or action taken from data

**Objective 1.4: Determine feasibility of assessing characteristics of asthma cases leading to death among Connecticut children and adults**

**Strategies:**

1.4.1 Investigate and evaluate characteristics of asthma cases for all persons in Connecticut that die due to asthma

Action Steps:

- Obtain mortality data with asthma as primary and underlying cause of death on a quarterly basis from the Office of Vital Records at the Connecticut DPH
- Make asthma deaths reportable to DPH
- Contact interviews on next-of-kin of the deceased
- Review medical records, medical examiner’s reports, and pharmacy records
- Establish a Review Panel consisting of allergists, asthma educators, ED physicians, family practitioners, internists, nurses, pediatricians, pharmacists, pulmonologists, respiratory technicians and social workers
- A summary for each case presented to the Review Panel for review

Performance Indicators:

- Report of the Review Panel’s findings written and disseminated
- Action taken based on recommendations of Review Panel

**Goal 2: Increase awareness and knowledge in the general public and among key asthma stakeholders in the professional community of the signs, symptoms and seriousness of asthma and that asthma can be managed**

**Objective 2.1: Develop multiple outreach avenues to make asthma information widely available**

**Strategies:**

2.1.1 Enhance and maintain the Asthma Program’s website

Action Steps:

- Assign and train staff to maintain website
- Review other asthma and state health department web sites to acquire presentation ideas and increase the number of appropriate resources that we can link to that are informative to a wide audience: kids, adults, coaches, providers, news media, etc.
- Create/maintain sections to encompass topics including but not limited to: patient education, epidemiology, and clinical management/professional education, data, resource links
- Develop a regional section to showcase the activities/resources of stakeholders including but not limited to: regional interventions, regional asthma coalitions, autonomous asthma coalitions

Performance Indicators:

- Website evaluation consisting of assessment of site usefulness and number of hits.
- Site effectiveness can be evaluated via survey

2.1.2 Identify all current asthma patient education/public awareness resources and asthma management programs available in the state of Connecticut and make information available to the public

Action Steps:

- Identify key stakeholders
- Conduct survey of stakeholders to identify existing resources and programs
- Develop and disseminate survey
- Collect and analyze data

- Promote/advertise identified resources and programs on the program website

Performance Indicators:

- Survey Results
- Resources/ program clearinghouse on website

2.1.3 Promote asthma awareness via public awareness campaigns to support early diagnoses, symptoms, and treatment of asthma

Action Steps:

- Develop key messages and/or utilize existing media that stresses importance of appropriate diagnosis, symptoms, treatment and self management that can become recognizable, i.e., CAN – Controlling Asthma Now, ACT – Asthma in Connecticut, and EPA messages
- Continue to implement local public awareness activities during World Asthma Day and Asthma Awareness Month
- Implement media campaigns through collaborative relationships with community partners and use of existing pre-recorded radio and TV spots including the EPA’s Gold Fish campaign
- Increase the number of Asthma Speakers Bureaus in the state of Connecticut through the Connecticut Coalition for Environmental Justice and others, (i.e., CTS, ALA, CCMC, Yale, UCHC)

Performance Indicators:

- Number of public awareness campaigns implemented
- Number of speaker’s bureaus created
- Numbers of community presentations made

2.1.4 Publicize asthma help-lines available to the public

Action Steps:

- Promote and support the Lung Association’s asthma help line
- Promote and keep current asthma resources on Infoline 211 and publicize the resource on the Program website

Performance Indicators:

- Creation of help-line
- Number of Calls to the helpline
- Evaluation of helpline effectiveness

**Objective 2.2: Provide asthma education opportunities to the public that promotes proper asthma management in the home, clinical, daycare, and school settings**

**Strategies:**

2.2.1 Assess patient education programs/opportunities that provide asthma education in the clinical settings to standardize and align with best practice guidelines

Action Steps:

- Research existing programs to see if any provide asthma education directly to the patient in the clinical settings (i.e., via a nurse or asthma educator)
- If such programs exist promote them to the public and partners via our website, newsletter, and partners
- If such programs do not exist, collaborate with partners to develop strategies on how to create such a program and/or make such patient education opportunities available to the public

Performance Indicator:

- Number of and evaluation results of patient education programs/opportunities in clinical settings

**Objective 2.3: Connect the corps of certified asthma educators developed by professional education efforts to settings without asthma education programs**

**Strategies:**

2.3.1. Promote the existence and activities of the certified asthma educators to key stakeholders

Action Steps:

- Place the contact list on the Asthma Program website
- Advertise the activities of the certified asthma educators on the website
- E-mail the certified asthma educator contact list to all key partners

Performance Indicators:

- Placement of the contact list on the Asthma Program website; promotion of certified asthma educator engagements on the Asthma Program website
- Increase in the number of certified asthma educator engagements using the number of engagements at the creation of the contact list as the baseline

2.3.2 Identify and maintain communication and current contact information with certified asthma educators throughout the state

Action Steps:

- Obtain list of Connecticut certified asthma educators from the NAECB
- Contact these individuals and obtain current contact information as well as become aware of his/her current activities regarding asthma
- Create a contact list

Performance Indicator:

- Contact List

**Objective 2.4: Provide asthma education opportunities to the professional non-clinical community**

**Strategies:**

2.4.1 Conduct asthma education/public awareness presentations to professionals. Professionals include but are not limited to school staff, LHD staff, Health Maintenance Organizations (HMOs), pharmacists, legislators, childcare providers, coaches, and professionals responsible for the indoor air quality of work places

Action Steps:

- Design asthma education/awareness curriculums and presentations geared towards specific audiences, i.e. non-medical professionals, medical professionals, school staff, and legislators
- Identify stakeholders to conduct presentations to
- Contact stakeholders to gauge interest and schedule presentations if interested
- Conduct presentations
- Continue to fund asthma initiatives via our ten asthma planning regions that provide asthma education to professionals such as the AAFA *Asthma Essentials for Daycare Providers*

Performance Indicators:

- Presentation curriculums
- Number of presentations held
- Number of funded asthma patient education initiatives
- Outcome data of asthma patient education initiatives

**Objective 2.5: Create and disseminate educational materials for patients with asthma in the school, day care and community settings to enable patients and their families to better understand their asthma, its triggers and its optimal self- management**

**Strategies:**

2.5.1 Identify, develop and utilize asthma patient information that is user-friendly, in appropriate languages and reading levels that are culturally relevant

Action Steps:

- Identify current existing asthma patient information relevant the schools, day cares and

- community settings.
- Develop new educational materials and resources as needed to target populations at greatest risk
- Distribute and promote the utilization of asthma patient information resources with special emphasis on populations at greatest risk in communities, schools, and day cares
- Upgrade the existing DPH website with regard to the quality of and ease of access to asthma patient information resources with special emphasis on populations at greatest risk, including links to key asthma partners

Performance Indicator:

- By 2009 DPH will have identified and made available printed and electronic resources for patients and their families including improvements in their web site

**Objective 2.6: Increase awareness of genetics and family health history as predictors of asthma risk**

**Strategies:**

- 2.6.1 Continue use and widen distribution of new family health history tools and resources. Maintain and provide annual statistical update of the asthma portion of the family health history brochure
- Incorporate the importance of family health history into all asthma educational activities and link asthma initiatives with other chronic disease, genomics, and environmental initiatives and build on existing projects

Performance Indicators:

- Current information is maintained on Connecticut DPH Asthma website.
- Asthma statistics are updated annually for inclusion in the CT family health history brochure.
- Further strengthen linkages with the Connecticut DPH Genomics Office via work with the internal
- Gene Team and participation in the Genomics Office's collaborative efforts with chronic disease and family health history promotion.

**Objective 2.7: Ensure that genomics discoveries are applied appropriately to populations**

**Strategies:**

- 2.7.1 Identify resources for balanced information that tempers commercial marketing of genetic testing

Performance Indicators:

- Up to date asthma information and statistics will be maintained on the DPH asthma website
- Asthma program is represented in DPH genomics and chronic disease collaborative efforts
- Asthma program staff will monitor current asthma-related genomic developments for possible policy and/or services impact

**Goal 3: Improving Systems of Asthma Care**

**Objective 3.1: Decrease the inpatient hospitalizations and emergency department visits with a primary diagnosis of asthma, especially among racial and ethnic minorities.**

**Strategies:**

- 3.1.1 Provide up-to-date asthma information on diagnosis, medications, environmental risk factors, best practices and patient management plans to providers and asthma management partners

Action Steps:

- Recommend to the licensing board at DPH that e-mail addresses be requested in addition to the existing demographics already collected for all healthcare provider license renewals and newly licensed providers

- Develop and/or identify a health care provider survey that can be sent via e-mail and responded to using available web tools to assess health care provider compliance with the NAEPP guidelines including provision of written treatment plans. Provide an Asthma Action Plan template in word format for health care providers to encourage personalization of these written treatment plans to their own practice and standard asthma treatment protocol based on NAEPP guidelines to increase use of a written treatment plan (use check boxes for selected med(s), # of puffs, daily, am, pm, etc.)
- Develop a guide that identifies covered asthma medications, equipment, and supplies by insurance payers to assist provider and patient
- Provide a one-page Asthma Action Plan in word format that includes medical authorization for schools on a single page so providers can customize to their practice
- Provide simplified treatment guides that meet the new NAEPP guidelines
- Conduct a pilot survey electronically in several geographic areas with different health care provider practice specialties to establish a baseline for current awareness and adherence to NAEPP guidelines for asthma diagnosis and management
- Provide clinicians resources for patient education through Infoline, Lung USA, the Program newsletter, and web site
- Identify materials, interventions, and training resources that address environmental triggers to ensure environmental trigger avoidance is part of comprehensive asthma management plan and share with the following: health care providers, local health department staff, insurance payers, certified asthma educators, and visiting nurses
- Identify/Provide smoking prevention and cessation resources available statewide

Performance Indicator:

- Current knowledge and adherence to NAEPP Guidelines is disseminated and surveys identify level of provider knowledge, adherence to guidelines and best ways to reach providers

3.1.2 Promote and encourage the early and appropriate diagnosis and treatment of asthma

Action Steps:

- Promote adherence to NAEPP guidelines by guiding health care providers in the use of the Easy Breathing Program and other effective provider education and diagnostic/management programs in use in Connecticut
- Develop and maintain a current e-mail list of providers to provide timely communication and updates
- Provide and promote use of written treatment plans using the existing DPH Asthma Action Plan and/or the Asthma Action Plan template in word format that can be tailored by the provider for their specific practice
- Conduct an annual insurer payers' survey for covered medications, equipment and supplies covered by health plans and share these resources with providers
- Promote use of environmental reduction strategies as part of clinician care
- Resurvey a different group of health care providers annually using the same initial survey to evaluate adherence to new NAEPP guidelines
- Identify, contact and provide resources to health care providers who serve areas with the highest hospital and ED visit rates to promote adherence to NAEPP Guidelines
- Collaborate with insurers, Medicaid, and Medicare payers to establish criteria for benchmarking adherence to the NAEPP guidelines for the viability of a pay-for-performance system
- Collaborate with insurers to promote appropriate coverage in accordance with model benefit packages for essential asthma services
- Advocate for reimbursement for time spent on patient education by the clinician or a certified asthma educator

Performance Indicators:

- The number of clinicians using an asthma management program that promotes adherence to NAEPP Guidelines such as Easy Breathing shows an annual increase, especially in urban areas where hospitalization and ED visits are highest to meet the needs of disparate populations
- The number of health care clinicians using written asthma treatment (action) plans increases
- The number of clinicians who assess environmental asthma triggers routinely and implement environmental allergen reduction strategies including smoking prevention and cessation will increase
- Insurance Payers assist and support patient education reimbursement and pay-for-performance integration

### 3.1.3 Promote use of certified asthma educators in Connecticut

#### Action Steps:

- Work through National Asthma Educator Certification Board (NAECB), other New England states, and insurers to assist and support reimbursement for patient asthma education in multiple settings
- Promote asthma educator certification to eligible candidates that represent and serve the disparate populations previously identified
- Identify individual AE-Cs in Connecticut and create a Connecticut AE-C Association
- Explore funding options to investigate and evaluate the effectiveness of asthma education by AE-Cs in Connecticut to better patient outcomes
- Explore the feasibility of developing a data collection system to track and monitor the activity and patient outcomes of asthma education by AE-Cs in Connecticut
- Explore funding options to support costs of preparatory courses and costs of AE-C exam focusing on commercial payers, hospitals, and the Connecticut Hospital Association through stipends especially for individuals who will serve historically underserved areas

#### Performance Indicators:

- Number of certified asthma educators in the state increases
- Asthma education by certified asthma educators becomes reimbursable
- Cost effectiveness of Certified Asthma Educators in various settings such as urban clinics and private practice evaluated
- Database to track AE-C educator activity in Connecticut is created

### 3.1.3 Link individuals with poorly controlled asthma despite appropriate asthma therapy to a medical home with an emphasis on low-income populations and individuals at greatest risk for death from asthma

#### Action Steps:

- Collaborate with Visiting Nurses Associations (VNAs), AE-Cs, LHDs, and Respiratory Therapists (RTs) to create a system to identify and provide case management in the home for individuals at greatest risk for morbidity and/or mortality
- Promote appropriate access and referral mechanisms by clinicians to specialty care for high-risk children at greatest risk for morbidity and mortality
- Identify disparities in access to care and appropriate referrals using DPH data and other data sources that may be identified
- Collaborate with community healthcare agencies and communities to identify access barriers and develop a system that connects high-risk populations to needed ongoing services

#### Performance Indicators:

- Barriers to care are identified and targeted interventions and service providers link high-risk populations to a medical home
- The number of individuals who have primary care providers and appropriate ongoing medical care increases

**Objective 3.2: Establish a baseline and then increase the number of persons treated for asthma in acute care settings who receive appropriate medications and comprehensive discharge instructions.**

**Strategies:**

3.2.1 Identify resources to provide access to appropriate asthma medications for those patients who are uninsured or under-insured

Action Steps:

- Explore funding options available for medications
- Identify options to access asthma medications and disseminate to providers
- Publicize medication resources on the Program web site

Performance Indicator:

- Medication access options identified, disseminated and publicized

3.2.2 Provide and promote comprehensive discharge instructions to assist ED in adhering to NAEPP Asthma Guidelines for acute asthma management

Action Steps:

- Identify current discharge instructions in use by hospital EDs across the state
- Identify existing ED discharge instructions from other states' hospitals that have been evaluated for effectiveness related to patient understanding and instructed follow-up with their primary care providers
- Develop standardized discharge instructions if needed based on evaluated effectiveness

Performance Indicators:

- Current ED discharge instructions identified statewide
- Additional discharge instructions identified that have been evaluated for effectiveness from other sources
- Effective discharge instructions are identified, disseminated and promoted statewide

3.2.3 Promote an ED/Provider notification system that provides communication with primary care providers within 24 hours of a patient's ED visit

Action Steps:

- Work with Connecticut ED Association to identify current notification systems used by hospitals
- Evaluate the identified notification systems for comprehensiveness, cost, effectiveness and use
- Develop in conjunction with several hospital a standard notification system model that hospitals can adopt

Performance Indicators:

- Number of EDs using acute asthma management care pathways
- Number of EDs adhering to acute asthma management care pathways for: Template-driven, consistent and complete discharge instructions; Oral steroid use; Follow up with the primary care clinician

**Objective 3.3: Develop a comprehensive, integrated system of asthma care across all healthcare settings.**

**Strategies:**

3.3.1 Link physician/payer/pharmacy utilization/patient and patient into care information

Action Steps:

- Identify existing systems that use linking of pharmacy/provider communication for prescribing patient medication pickup and automatic refills

- Collaborate with pharmacists to identify overuse of quick-relief inhalers, provide patient education and provider follow-up
- Promote payer case management and health care provider communication to promote adherence to NAEPP treatment guidelines, patient compliance, and identify uncontrolled high-risk patients
- Identify people with asthma that do not have a medical home and connect them to a provider

Performance Indicators:

- The number of appropriate medication prescription/dispensing events for those with persistent asthma based on HEDIS standards
- High-risk individuals with persistent asthma are identified and receive appropriate care/referrals

3.3.2 Improve patient tracking and education information dissemination throughout the health care system

Action Steps:

- Identify current existing systems for health information exchange between insurers, schools, school based health centers, clinics, and primary care clinicians, preferably via electronic means
- Provide resource links for insurance coverage info
- Identify and promote communication mechanisms between ED/pharmacy/provider/patient e.g. the Yale ERICCA Project that uses electronic records that improve care for children with asthma
- Provide and promote use of written treatment plans for all patients, but especially children (Asthma Action Plans)

Performance Indicators:

- The number of children who have written asthma treatment plans in the schools is increased
- Electronic records systems are identified and expanded to other venues

**Objective 3.4: Support local asthma coalitions with whom DPH can effectively partner to achieve the State Asthma Plan’s objectives to better manage asthma in communities and in the home**

**Strategies:**

3.4.1 DPH will actively facilitate collaboration between the various regional coalitions

Action Steps:

- Representatives of all regional coalitions will participate in the State Asthma Advisory Council
- Regional coalitions will provide the state with quarterly activity reports that DPH will disseminate widely as an electronic newsletter
- DPH will host an annual meeting of asthma stakeholders which will feature successful programs from among the regional coalitions

Performance Indicator:

- DPH will promote regular communication between the regional coalitions for the sharing of best practices, the coordination of educational and other activities, and the partnering of coalitions for grant-making

3.4.2 Facilitate coalition efforts to provide support to individuals and families to identify and manage asthma that reaches all geographic and demographic sectors of the state

Action Steps:

- Support for regional asthma coalitions will require that they serve all the municipalities within their region and that their membership represents the diversity of the populations they serve, suburban and urban.
- DPH will identify lead agencies in each region of the state to coordinate asthma coalitions

Performance Indicators:

- Municipalities in the state will be taking an active part in a regional asthma coalition
- Regional asthma coalitions will be composed of a diverse group of members who represent

the populations and the stakeholders in their region

3.4.3 Connecticut will develop and commit key resources to support regional asthma coalitions

Action Steps:

- DPH will identify effective, evidence-based activities that it will promote to the regional asthma coalitions
- DPH will issue annual Request for Proposals (RFPs) for grant funds to support regional efforts based on one or more evidence-based activities
- DPH staff will work with regional coalitions to provide supportive data and other resources to assist in the grant application process of regional coalitions seeking additional funding
- DPH will offer to partner with regional coalitions to strengthen their applications for additional asthma funding
- DPH will actively assist and/or partner in the efforts of regional coalitions to apply for additional funding to support asthma activities
- DPH will regularly update its web site where it will provide educational materials for patients, providers and the general public
- DPH will identify and disseminate information on training and educational opportunities for asthma staff, coalition members, patients/families and the general public
- DPH will provide technical assistance to regional coalitions to conduct effective asthma activities
- DPH will annually provide regional and/or municipal level data on asthma to the coalitions
- DPH will coordinate its statewide educational and other efforts with the regional coalitions
- DPH will collaborate with the regional coalitions in future revisions of the state's Asthma Plan and in the development of new initiatives to implement that Plan

Performance Indicator:

- Regional asthma coalitions are integrated with regional contractors to conduct evidence-based asthma activities
- DPH will take the lead in developing and providing additional resources that support regional coalition

**Objective 3.5: Advocate for uniform reimbursement of comprehensive asthma care in Connecticut**

**Strategies:**

3.5.1 Facilitate insurance reimbursement for patient education by certified asthma educators in all settings

Action Steps:

- Partner with NAECB to determine current reimbursement by payers for asthma education by AE-Cs
- Support reimbursement efforts, standards and identify barriers
- Share data evaluation outcomes that may support cost savings of Certified Health Educator services

Performance Indicator:

- Reimbursement sources are identified and utilized for patient education by certified asthma educators in all settings and environmental home assessment as part of effective asthma control and management

3.5.2 Facilitate reimbursement for appropriate asthma case management for at-risk patients, including in-home environmental assessment and asthma case management services for high-risk patients

Action Steps:

- Examine the cost-benefit of performing in home asthma education, environmental

- assessment, and management in reducing acute care costs
- Local health department nurses/sanitarians/health educators/RTs conduct environmental home assessment/education programs statewide (Putting on AIRS Program)
- Determine current reimbursement rates and conditions for service and payment

Performance Indicator:

- Increase the number of public/private third party payers that reimburse for appropriate asthma case management for at risk patients, including in home asthma case management services for high-risk patients

**Objective 3.6: Train future health care providers in establishing and implementing a system of asthma management consistent with national asthma guidelines**

**Strategies:**

- 3.6.1 Introduce NAEPP Guidelines as the standard for asthma management in medical schools; nursing schools; schools of pharmacy, respiratory therapy programs, and physician’s assistants school curriculum

Action Steps:

- Partner with educational institutions to ensure curriculums are based on NAEPP Guidelines for medical, nursing, pharmacy, respiratory therapy, and physician assistant’s training programs
- Performance Indicators: Professional education curricula adhere to NAEPP Guidelines

**Goal 4: Reduce exposure to environmental conditions that cause and/or exacerbate asthma**

**Objective 4.1: Reduce the number of children who are exposed to diesel and particulate matter pollution in schools, consistent with the Connecticut Clean Diesel Plan.**

**Strategies:**

- 4.1.1 Promote diesel and particulate matter reduction technologies for school buses

Action Steps:

- Implement Public Act 07-06- Clean School Bus Program

Performance Indicator:

- Completion of school bus retrofits in identified communities

- 4.1.2 Promote diesel and particulate matter reduction technologies for off-road equipment, trucks and solid waste collection vehicles.

Action Steps:

- Retrofit off-road diesel equipment used at the Hartford Solid Waste facility and solid waste collection vehicles used in Hartford, to the extent funded
- Include retrofitting requirements and use of ultra low sulfur diesel fuel for off-road equipment in volume reduction solid waste facility permits during renewal
- Require retrofitting of off-road construction equipment and vehicles used in Connecticut Department of Transportation projects requiring an Indirect Source Permit, pursuant to Regulation of Connecticut State Agencies Section 22a-174-100
- Support truck stop electrification, a strategy to reduce idling of diesel engines of trucks

Performance Indicators:

- Completion of retrofitting of off-road diesel equipment used at the Hartford Solid Waste facility and solid waste collection vehicles used in Hartford
- Completion of retrofitting and use of ultra low sulfur diesel fuel for off-road diesel equipment in volume reduction solid waste facility permits
- Implementation of retrofitting of off-road construction equipment and vehicles used in Connecticut Department of Transportation projects requiring an Indirect Source Permit, pursuant to Regulation of Connecticut State Agencies Section 22a-174-100
- Truck stop electrification project

4.1.3 Reduce emissions from motor vehicle use by the state residents

Action Steps:

- Implement the California Low Emission Vehicle Program pursuant to Regulations of Connecticut State Agencies 22a-174-36b, ensuring decreased pollutants due to compliance with these most stringent motor vehicle emission standards

Performance Indicator:

- Effective enforcement of the California Low Emission Vehicle Program

**Objective 4.2: Reduce by 5% of current DEP baseline the ozone precursor and particulate matter emissions from stationary sources including electric generators, boilers, turbines and industrial processes**

**Strategies:**

- 4.2.1 Implement the Eight-hour Ozone State Implementation Plan (SIP) and the strategies contained within this SIP. For information on this SIP refer to the following website: [http://www.ct.gov/dep/cwp/view.asp?a=2684&q=385886&depNav\\_GID=1619](http://www.ct.gov/dep/cwp/view.asp?a=2684&q=385886&depNav_GID=1619)

Action Steps:

- Support efforts in the implementation of SIP, such as the reduction of diesel particulate matter

Performance Indicator:

- Monitored reductions in diesel particulate matter

**Objective 4.3: Maintain and expand infrastructure and programs to develop the capacity of people with asthma, especially people experiencing disparate risk of asthma burden, to identify, avoid, and reduce exposure to indoor environmental asthma triggers**

**Strategies:**

- 4.3.1 Encourage providers to recommend in-home visit when appropriate and to address environmental factors in the development of Patient AAPs using programs such as *Putting on AIRS*

Action Steps:

- Provide for training of health care providers and local health departments for in-home environmental assessments
- Educate local health departments about the nuisance statute that can be utilize to improve the home with health issues to improve the indoor environment that can be effective but less punitive and enforce the existing public health codes
- Provide funding to local health departments for in-home assessments
- Educate the providers on the importance of completeness of AAPs as a communication tool with parents and schools

Performance Indicators:

- Local health departments to take leadership role with data on reduction in intervention and visits
- Establish training sessions for in-home environment assessments
- Funding available to local health departments for in-home assessments
- Assessment if providers are completing AAPs
- Local health departments enforce existing public health codes

- 4.3.2 Establish a program in local health departments to address “asthma healthy homes.”

Action Steps:

- Connecticut DPH to establish programs with formal arrangements between local Health Directors and local Housing Authorities to address environmental quality in homes
- Establish a statewide conference with follow-up plan for successful Asthma Healthy Homes Program within every LHD in Connecticut
- Disseminate integrated pest management (IPM) resource information to local health departments, Housing Authorities, housing organizations and landlords to improve resident respiratory health and indoor conditions

- Connecticut DPH to work with other state agencies to develop incentive grants for integrated pest management in Housing Authorities

Performance Indicators:

- LHD's participate in the program
- Training seminars in IPM and collect data on successes with implementing integrated pest management process are established
- Number of IPM packets distributed and attendance at training sessions
- Number of IPM trainings conducted

4.3.3 Encourage environmental intervention including in-home assessment as well as procurement and distribution of supplies for reducing exposure to indoor environmental triggers

Action Steps:

- Establish a program, such as the *Putting on AIRS* program, where companies can partner with Connecticut DPH, health care providers and local health departments to encourage insurance vendors to provide in-kind home supplies such as mattress/pillow encasements, pest management and vacuum supplies
- Encourage vendors to provide in-home supplies such as mattress/pillow encasements, pest management and vacuum supplies
- Establish a mechanism through local health departments to distribute home supplies
- Encourage Medicaid benefits managers to pay for in-home assessment and supplies

Performance Indicators:

- Number of health insurance companies encouraged to provide reimbursement
- Number of vendors contacted
- Number of vendors supplying materials

4.3.4 Establish policies that require new and rehabilitated (federal and state) housing to comply with standards that promote good indoor air quality, using regional HUD initiatives such as the Asthma Regional Council's model

Action Steps:

- Distribute information on healthy home guidance and other resource literature for providing and maintaining healthy homes to reduce the triggers of asthma
- Disseminate the Asthma Regional Council's guidance references and resources to local health departments, Housing Authorities and other relevant housing organizations within Connecticut
- Encourage state housing agencies to designate specific funds through funding to make repairs/improvements to housing units to maintain the units as asthma safe
- Work with state housing coalitions and organizations for legislation to provide funding for repairs and improvements to state housing units to reduce the presents of asthma triggers and promote healthy housing

Performance Indicators:

- Collaborations with DSS, DECD and CHFA for distribution of resource information to LHDs, Housing Authorities and other housing organizations established
- Training in the assessment and treatment of housing related health hazards associated with asthma triggers established
- Number of packets distributed and attendance at training sessions
- Legislation introduced specific to provide funding for repairs and improvements to state housing units

**Objective 4.4: Increase the capacity of schools and childcare settings, including other congregate care settings such as group homes, residential facilities and detention settings, to identify, avoid and reduce exposure to environmental asthma triggers**

**Strategies:**

4.4.1 Address indoor environment in schools, daycares, and other group child care settings

Action Steps:

- Implement and sustain CSIERT and CSIERT activities including training and implementing TfS and companion programs such as *Tools for Techs*
- Reduce the impact of school construction through participation in “Design *Tools for Schools*” <http://www.epa.gov/iaq/schooldesign/>
- Educate on Financial Incentives for healthy design
- Provide schools with DPH link to Asthma publications such as: *Managing Asthma in Connecticut Child Care Settings* and *Managing Asthma in Connecticut Schools*
- Provide day care facilities with Materials and links to the DPH fact sheet on indoor air quality and potential environmental hazards
- Partner with DCF, DMR and JJ/CSSD to provide educational tools/links and begin addressing air quality in state run/state licensed child caring facilities and group homes

Performance Indicators:

- Schools will implement and/or plan to implement TfS and/or other similar programs.
- Day Care facilities will take steps to reduce environmental hazards in their setting
- State run/state licensed child caring facilities will begin addressing indoor air quality in their facilities and provide training to employees managing those settings

4.4.2 Promote best practices that encompass environmental impact of school construction on the health of the staff and children from exposure to potential asthma triggers

Action Steps:

- Encourage participation in “Design Tools for Schools” in new construction
- Distribute reference materials on Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) and TfS to all school districts and boards of education
- Promote use of SMACNA guidelines for occupied buildings under construction
- Include SMACNA guidelines in the specs for school construction bids
- State Department of Education (SDE) to make a regulatory change that SMACNA guidelines must be included in the application for bonding for all specs for school construction bids
- Support legislation on green building construction that incorporates IAQ issues solutions to reduce impact on persons with asthma
- Include indoor air quality issues as a component to be addressed in all dwellings approved for use as group homes

Performance Indicators:

- Increase in number of schools rated “High Performance Schools” through their healthy design and construction
- Reference materials on SMACNA guidelines distributed to school districts and boards of education
- SMACNA guidelines included in the specs for school construction bids
- Increase in construction contracts with SMACNA incorporated into specifications

**Objective 4.5: Increase the capacity of health care professionals to identify and report work-related asthma**

**Strategies:**

- 4.5.1 Encourage healthcare providers to ask adults with asthma or asthma-related symptoms about their workplaces

Action Steps:

- Educate primary care physicians and selected sub-specialists (i.e. pulmonologists, allergists) through various avenues (i.e. mass mailing, medical association meetings, etc.) about the steps necessary to take an appropriate work history from their patients to identify potential work-related exposures
- Post guidance and provide sample tools for providers on the DPH website regarding how to take an appropriate work history

Performance Indicators:

- Number of primary care physicians and sub-specialists in the state receiving outreach contact

- Development of DPH web content for guidance on taking an appropriate work history

4.5.2 Promote awareness among health care providers about the process for reporting work-related asthma to the Connecticut DPH and the Department of Labor, and the importance of doing so

Action Steps:

- Educate primary care physicians and selected sub-specialists (i.e. pulmonologists, allergists) through various avenues (i.e. mass mailing, medical association meetings, etc.) about the process for reporting work-related asthma to the Departments of Public Health and Labor
- Post guidance for providers on the DPH website regarding how to appropriately report cases of work-related asthma

Performance Indicators:

- Number of primary care physicians and sub-specialists in the state receiving outreach contact
- Development of DPH web content for guidance on reporting work-related asthma
- Number of individual practitioners reporting cases of work-related asthma to DPH/DOL
- Number of physician reports to Departments of Public Health and Labor

**Objective 4.6: Increase the capacity of employees, employers, unions, Connecticut State agencies including Connecticut DPH and CONNOSHA safety and health officers to identify and reduce exposures to work and building-related asthma agents and respiratory irritants.**

**Strategies:**

4.6.1 Provide resources and promote awareness regarding exposures to chemicals in occupational settings of concern for asthma, especially latex, isocyanates, metal-working fluids, and cleaning chemicals

Action Steps:

- Develop and disseminate fact sheets that include information on latex use and availability of alternatives to healthcare facilities (especially smaller assisted living and nursing home facilities), foodservice, childcare businesses. Fact sheets will address latex, but, focused on the specific workplace will address other indoor environmental exposures of concern in typical healthcare, food service and childcare businesses. In the healthcare sector the emphasis will be on facilities where latex policies are lacking
- Develop and implement an outreach program targeting to auto body repair to disseminate information on reducing exposure to asthmagens in painting operations. Connecticut DPH staff to review physician reports of exposure to help identify areas of concerns
- Develop and implement an outreach program targeting the metal working industry in Connecticut to encourage appropriate management of metal working fluids. Connecticut DPH staff to review physician reports of exposure to help identify areas of concerns. Enlist UCHC's Occupational and Environmental Health Program to provide guidance and build on UCHC National Institute of Occupational Safety Hazards (NIOSH) sponsored workshops
- Monitor development of "Green Seal Plus" designated cleaning chemicals.
- Support dissemination of "green cleaning initiatives" to schools, specifically coordinating with Connecticut Schools Indoor Environment Resource Team – school district outreach, and Connecticut Municipalities

Performance Indicators:

- Fact sheets on latex use produced and disseminated to childcare, food and health service businesses
- Information on reducing exposure to asthmagens disseminated to auto body repair shops.
- Developed and implemented an outreach program targeting the metal working industry in Connecticut to encourage appropriate management of metal working fluids.
- Occupational illnesses and asthma in employer newsletters, programs, TV and print media education/training programs provided to targeted audiences above are promoted

**Objective 4.7: Increase awareness and resources to improve the indoor environment in non-industrial work places to promote asthma healthy environments**

**Strategies:**

- 4.7.1 Provide work-related asthma resources and other support to appropriate Stake-holders interested in improving indoor air quality in workplaces

Action Steps:

- Provide state-specific and national data on work-related asthma to stakeholders through development, distribution, and website posting of a formal report on work-related asthma in Connecticut
- Inform stakeholders of the willingness of DPH staff to participate in the planning, implementation, and evaluation of initiatives to improve workplace air quality

Performance Indicators:

- Development of a formal report on work-related asthma in Connecticut
- Number of requests for work-related asthma data from stakeholders
- Development of DPH web content containing the work-related asthma report
- Number of requests from stakeholders to have DPH staff participate in workplace air quality initiatives

- 4.7.2 Identify existing or develop new web-based resources with information for improving indoor air quality available to non-industrial employers

Action Steps:

- Enhance the DPH website to include indoor air quality educational materials and guidance documents directed toward non-industrial employers
- Increase employer awareness of the web-based resources available to them to address indoor air quality issues through the Connecticut Business and Industry Association (CBIA) and other business organizations, workers' compensation insurers, and other business groups

Performance Indicators:

- Develop and post additional web-based indoor air quality resources on the Connecticut DPH website
- Number of business groups and insurers made aware of the increased availability of indoor air quality educational and guidance documents on the Connecticut DPH website

- 4.7.3 Participate in activities to increase the number of state agencies, municipalities, and private-sector non-industrial employers utilizing the TfO's program developed by the Connecticut DPH Indoor Environments Unit

Action Steps:

- Support the TfO's development team to complete full implementation and evaluation of the TfO's program at the pilot agency (Connecticut DPH)
- Develop a TfO's Toolkit that includes information on the TfO's program, how it is implemented, and the experience of implementing it at the pilot agency, to distribute to other state agencies
- Develop informational materials to inform municipalities and private-sector non-industrial employers of the availability of the TfO's program Toolkit through all available channels, including local health departments, the CBIA and other business organizations, and local Chambers of Commerce

Performance Indicators:

- Completion of full implementation and evaluation of the TfO's program at Connecticut DPH
- Number of state agencies implementing the TfO's program
- Number of municipalities and private-sector non-industrial employers requesting the TfOs Toolkit

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| <ul style="list-style-type: none"> <li>• Number of municipalities and private-sector non-industrial employers implementing the TfO’s program</li> </ul>  |
| <p>4.7.4 Identify methods and resources necessary and produce a comprehensive report on work-related asthma in public buildings as well as in private office settings and other non-industrial buildings</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Encourage employers to review Worker’s Compensation claims for respiratory conditions</li> <li>• Review Connecticut DPH/DOL physician reports of work-related asthma to identify specific target industries, occupations, and/or workplaces</li> <li>• Support outreach programs to health care providers that provide education and tools to manage illnesses associated with exposures in indoor environments</li> </ul> <p><u>Performance Indicators:</u></p> <ul style="list-style-type: none"> <li>• Completed report summarizing Connecticut DPH/DOL physician reports for work-related asthma</li> <li>• Number of health care providers receiving educational materials and other tools, such as the UCONN Health Center’s “Guidance for Clinicians on the Recognition and Management of Health Effects related to Mold Exposure and Moisture Indoors” document, through outreach programs</li> <li>• Number of worker’s compensation cases among state workers with respiratory disease secondary to Indoor Air Quality (IAQ), moisture, or mold identified in Connecticut Comptrollers annual report</li> </ul>  |
| <p><b>Objective 4.8: Reduce the number of people with asthma and all children who are exposed to environmental tobacco smoke</b></p>   |
| <p><b>Strategies:</b></p> <p>4.8.1 Promote smoking bans for both indoor and outdoor public areas</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Educate the public on harmful effects of second hand smoke and the benefits of banning smoking in private and public places (e.g., home, motor vehicle, parks)</li> <li>• Support smoking ban legislation in cars when children aged 12 and under are in the vehicle</li> <li>• Encourage schools to adapt and enforce comprehensive tobacco-free policies</li> <li>• Promote the compliance and enforcement of current smoking ban in work places, including restaurants and bar</li> <li>• Encourage small businesses of less than 10 employees and private clubs to adopt smoking ban</li> <li>• Promote smoking bans in public venues such as playgrounds, beaches, and parks</li> <li>• Participate in state activities to develop smoke-free policies</li> <li>• Focus educational messages to protect vulnerable populations from environmental tobacco smoke, e.g., casinos, small businesses, pregnant women and mothers with young children</li> <li>• Develop signage with the message to move smokers away from doorways and make the template available on Connecticut DPH web site</li> </ul> <p><u>Performance Indicators:</u></p> <ul style="list-style-type: none"> <li>• Number of educational programs conducted to educate the public on second hand smoke</li> <li>• Increase in number of schools having comprehensive tobacco-free school policies</li> <li>• 100% of work place, including restaurants and bars, compliant with state smoking ban</li> <li>• Increase in number of small businesses and private clubs who adopt smoking ban</li> <li>• Increase in number of public venues that are smoke-free</li> <li>• Signage with the message to move smokers away from doorways developed and the template made available on Connecticut DPH web site</li> </ul> |
| <p>4.8.2 Make tobacco products less accessible to minors to discourage smoking initiation</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Encourage the enforcement of state law prohibiting the sale of tobacco products to underage</li> </ul>  |

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| <p>children</p> <ul style="list-style-type: none"> <li>• Encourage the legislators to make policy that would make tobacco products less accessible and affordable</li> </ul> <p><u>Performance Indicators:</u></p> <ul style="list-style-type: none"> <li>• Decreased sale of tobacco products to minors</li> <li>• Policy introduced to make tobacco products less accessible and affordable</li> </ul>  |
| <p>4.8.3 Encourage tobacco cessation programs and making tobacco cessation programs accessible, financially, culturally, and geographically, to all tobacco users</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Promote schools to adapt and enforce comprehensive tobacco-free policies, including tobacco cessation services</li> <li>• Encourage all insurance companies, including Medicaid, to cover smoking cessation services and medications as part of their basic plans, especially for parents/guardians of asthmatic children, teens and pregnant women</li> <li>• Promote need for continued funding of the Connecticut Quitline to include nicotine replacement therapy and counseling services</li> </ul> <p><u>Performance Indicators:</u></p> <ul style="list-style-type: none"> <li>• Increase in number of schools having comprehensive tobacco-free school policies that include tobacco cessation services to all students, families and staff</li> <li>• Increase in number of insurance companies, including Medicaid, to cover smoking cessation services and medications as part of their basic plans, especially for parents/guardians of asthmatic children, teens and pregnant women</li> <li>• Adequate funding for Connecticut Quitline to support nicotine replacement therapy and counseling services</li> </ul> |
| <p>4.8.4 Establish a pilot program for Housing Authority to provide smoke-free housing</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Connecticut DPH to work with other state agencies to explore establishing a policy to implement smoke-free housing units within Housing Authority</li> <li>• Work with Housing Authority to promote the reduction of environmental tobacco smoke in Housing Authority units</li> </ul> <p><u>Performance Indicators:</u></p> <ul style="list-style-type: none"> <li>• A policy established to implement tobacco-free housing units within Housing Authority</li> <li>• Increase in number of Housing Authority units adapting tobacco-free housing policy</li> </ul>  |
| <p><b>Goal 5: Increase the awareness and use of standardized guidelines for asthma self- management in educational and community settings</b></p>   |
| <p><b>Objective 5.1: Develop Asthma-friendly policies and guidelines for asthma management in these settings when looking at communities and schools</b></p>  |
| <p><b>Strategies:</b></p> <p>5.1.1 Partner with other concerned agencies and entities to address asthma in the schools.</p> <p><u>Action Steps:</u></p> <ul style="list-style-type: none"> <li>• Identify additional partners and create an ongoing Work Group within the AAC to address asthma issues in school and pre-school settings</li> <li>• Implement environmental reduction of triggers in schools and communities, TfSs</li> <li>• Align our asthma efforts with those of the Coordinated School Health Programs that the CDC is also supporting with the Wellness Committees that all districts are mandated to have under USDA rules</li> <li>• Partner with SDE and the new School Health Council to reach clinicians in following best practice standards of care working with the School Medical Advisors through the SDE and through the Connecticut AAP's School Health Committee, working with the new School Health Advisory Council that SDE is forming</li> </ul>   |

- Conduct annual Connecticut School Nurse Survey

Performance Indicators:

- Partnership will be formed and functioning
- Environmental controls implemented
- Survey conducted

5.1.2 Identify new and update existing Guidelines for the Management of Asthma in the schools and provide training on asthma management for school nurses and other staff

Action Steps:

- Review existing *Managing Asthma in Connecticut in Schools Manual* and update as needed.
- Develop and disseminate a set of guidelines for the management of asthma in the schools that provides guidance to all school staff in addition to the school nurse
- Identify and /or develop training curricula and a model training programs with the assistance of School Medical Advisors and other local resources to promote the regular education and training of school nurses, school medical advisors and other staff in asthma management
- Empower school nurses to advocate for better asthma care for students thru the school medical advisor and providers to meet student’s needs
- Collect best practice experiences as well as updates on guidelines for asthma management for dissemination to schools
- Provide AAPs in several formats, hard copy and customizable and made available statewide to parents, school nurses and health care providers
- Conduct a pilot to assess the impact, effectiveness, and importance of the school nurse to overall school health of staff and students

Performance Indicators:

- All schools in Connecticut will have guidelines for asthma management and will conduct periodic training of school personnel
- All schools in Connecticut will receive periodic assistance from the AAC in the form of best practices and guideline updates
- Use of guidelines and staff trainings conducted are evaluated
- Use of AAPs is quantifiable

5.1.3 Revitalize and empower the school medical advisor role and develop a model for roles and responsibilities that can be adopted by local schools boards and required thru regulatory changes

Action Steps:

- Members of the Connecticut AAP’s, School Medical Advisory Committee to develop model
- AAC members to facilitate adoption of a model and regulatory changes to better define comprehensive roles and responsibilities of school medical advisors

Performance Indicators:

- School Medical Advisor roles and responsibilities model developed
- Regulatory changes made that require school boards to adopt a comprehensive model that defines roles and responsibilities of the school medical advisor

5.1.4 Facilitate statewide implementation of an asthma self-administration inhaler law for students and other asthma-related regulations in all Connecticut schools

Action Steps:

- Develop a model policy statement for adoption by Connecticut school districts that supports the inhaler law and other asthma-related regulations
- Provide factual information related to current and new regulations and statutes when requested

Performance Indicator:

- All schools in Connecticut will have systems and policies in place to support implementation of the inhaler law and other asthma-related regulations

5.1.5 Standardize school nurse software for data collection for asthma reporting

Action Steps:

- Utilize UCHC findings for most common software used and develop linkages within systems
- Identify a DPH asthma data repository to receive asthma school data and test for functionality
- Identify school districts that do not have electronic reporting capability
- Identify funding sources to support electronic capability for those districts without current capacity
- Develop school nurse training for pilot school districts
- Provide training for school nurses
- Evaluate training and incorporate findings
- Expand school nurse trainings to other school districts

Performance Indicators:

- Most common software identified that can be modified for use statewide
- Electronic capability gaps identified and resources provided
- School nurse training curriculum developed, pilot-tested, evaluated and rolled out statewide to all school districts

**Objective 5.2: Increase awareness of asthma-friendly policies and guidelines for asthma management available for implementation in daycare and other pre-school settings**

**Strategies:**

- 5.2.1 Promote Guidelines for the Management of Asthma in the Day Care/Pre-School Setting and promote training on asthma management for personnel in such programs

Action Steps:

- Identify new, update existing, and disseminate guidelines for the management of asthma in the daycare/pre-school settings
- Identify training curricula and a model training program for day care providers
- Promote the regular education and training of day care nurses and other day care provider staff in asthma management
- Promote outreach and education to promote use of guidelines statewide
- Collect and disseminate best practice experiences as well as updates on guidelines for asthma management for dissemination to daycare and pre-school settings
- Easy to use patient AAPs will be provided in several formats, hard copy and customizable and made available statewide to parents, day care nurses, day care providers, and health care providers
- Model policies will be developed and disseminated for day cares and preschools to allow on-site quick-relief medications for all children with asthma by qualified staff

Performance Indicators:

- All licensed daycare/pre-school settings in Connecticut will have guidelines for asthma management and will conduct periodic training of program personnel
- All licensed -daycare and pre-school settings will receive periodic assistance from the AAC in the form of best practices and guideline updates
- Use of guidelines and staff trainings conducted are evaluated
- Use of AAPs is quantifiable
- Quick relief medications policy in place

**Objective 5.3: Increase dissemination of asthma guidelines to institutions of higher learning concerning best practices for the management of asthma in such settings**

**Strategies:**

5.3.1 Provide guidelines and educational materials appropriate for students of higher education for use by colleges and similar institutions

Action Steps:

- Existing education materials used by colleges will be reviewed and updated materials disseminated as needed for student use
- The Connecticut DPH website will have resources available on it for use by the college-age population

Performance Indicator:

- Appropriate asthma educational materials will be disseminated to institutions of higher education and via the Connecticut DPH web site

**Objective 5.4: Increase awareness and dissemination of asthma guidelines for optimal asthma care to be available for the management of children and adults in organized activities outside of school such as camp, after-school programs and town Park and Recreation events**

**Strategies:**

5.4.1 Recommendations will be developed and disseminated to programs that operate outside of regular school hours concerning best practices for the management of asthma in such settings

Action Steps:

- Engage agencies involved in running programs for children outside of regular school hours and any umbrella membership organizations which support such programs to help develop guidelines for the optimal management of asthma in these settings
- Best practices will be solicited and shared
- Identify and promote training opportunities for staff involved
- Educational materials will be identified and made available
- Recommendations and educational materials disseminated and shared via the DPH website

Performance Indicator:

- Guidelines and associated resources in place

**Goal 6: To create an environment that supports effective and comprehensive care through the engagement and advocacy of consumers, providers and asthma-related agencies**

**Objective 6.1: Increase the number of partners with expertise in advocacy and systems change that can identify and act on opportunities for systems or policy changes that improve asthma outcomes**

**Strategies:**

6.1.1 Identify individuals with knowledge of system change and policy development that are invested to promote systems change related to asthma through the AAC

Action Steps:

- Invite key individuals to join the AAC

Performance Indicator:

- Individuals with expertise are on the AAC and invested in need for system's change

6.1.2 Support key individuals and provide facts such as data and best practice standards to AAC members to inform during the process

Performance Indicator:

- Statewide partners understanding of the need for change, are in possession of necessary facts, and take action on next steps needed for system's change

Action Steps:

- Facilitate policy development education and/or training to a variety of partners
- Collaborate with key individuals and organizations to determine policy needs and issues
- Identify similar policies developed in other states and/or agencies with similar identified needs
- Provide facts such as data and best practice standards to stakeholders to inform during the process

**Policy Considerations:**

Surveillance:

- Seek legislative change that will require submission hospitalization and ED visit data directly to Connecticut DPH

Patient Education/Public Awareness:

- Mandate asthma education and smoking cessation education in the schools to faculty and students
- Put policy in place to develop and/or enforce housing codes that make dwellings more asthma friendly
- Set up a mechanism through the insurance companies to get asthma educators reimbursed for their services

Clinical Management:

- Insurance payers assist and support patient self-management education reimbursement and pay-for-performance integration

Schools and Communities:

- Amend the school statute for self-administration of medications in schools to **require** a self-administration policy be in place in every school district for asthma inhalers and anaphylactic medications

Environment:

- Include retrofitting requirements and use of ultra low sulfur diesel fuel for off-road equipment in volume reduction solid waste facility permits during renewal
- Require retrofitting of off-road construction equipment and vehicles used in Connecticut Department of Transportation projects requiring an Indirect Source Permit, pursuant to Regulation of Connecticut State Agencies Section 22a-174-100
- Work with state housing coalitions and organizations for legislation to provide funding for repairs and improvements to state housing units to reduce the presents of asthma triggers and promote healthy housing
- Support legislation on green building construction
- Promote smoking ban in public venues such as playgrounds, beaches, and parks
- Collaborate with other state agencies to explore establishing a policy to implement tobacco-free housing units within Housing Authority
- Support legislation to make policy that would make tobacco products less accessible and affordable

## Appendix B

### Definitions

Patients classified as having "**high risk asthma**" are likely to suffer a fatal event related to their asthma. The following are indicators that a patient may be high risk and the term "high risk asthma" is used to describe patients with the greatest need for appropriate medical management and intervention.

- History of intubation's for asthma
- History of an intensive care unit (ICU) stay for asthma
- 2 or more hospitalizations for asthma in the past year
- 3 or more ED visits for asthma in the past year
- Use of 2 or more canisters of short acting beta agonist in the past month
- Hospitalization or ED visit for asthma in the past month
- Current use of systemic corticosteroids to manage asthma symptoms
- "Poor perceiver" of airflow limitation - poor perceivers are those who cannot recognize their asthma symptoms
- Low socioeconomic status
- Sensitivity to *Alternaria*. *Alternaria* is a mold that can be found on organic debris. The relationship between *alternaria* sensitivity and high-risk asthma is unknown.

#### Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)

- The voluntary technical standards and manuals developed by SMACNA Contractors have found worldwide acceptance by the construction community, as well as foreign government agencies. ANSI, the American National Standards Institute, has accredited SMACNA as a standards-setting organization. SMACNA does not seek to enforce its standards or provide accreditation for compliance.
- SMACNA standards and manuals address all facets of the sheet metal industry, from duct construction and installation to air pollution control, from energy recovery to roofing. SMACNA's Technical Resources Department fields several thousand technical questions annually from architects, engineers, manufacturers and government personnel.

## Appendix C

### Abbreviations

|         |  |
|---------|--|
| AAC     | Asthma Advisory Council  |
| AAFA    | Asthma and Allergy Foundation of America                           |
| AANMA   | Allergy & Asthma Network Mothers of Asthmatics                     |
| AAP     | Asthma Action Plan   |
| AE-C    | Asthma Educator-Certified  |
| AHEC    | Area Health Education Council                                      |
| AIRS    | Putting on AIRS Program  |
| ALA     | American Lung Association  |
| ARC     | Asthma Regional Council of New England                             |
| CBIA    | CT Business & Industry Association                                 |
| CDC     | Centers for Disease Control and Prevention                         |
| CHA     | CT Hospital Association  |
| CHFA    | CT Housing Finance Authority                                       |
| COPD    | Chronic Obstructive Pulmonary Disease                              |
| CSIERT  | CT School Indoor Environmental Resource Team                       |
| CT      | Connecticut  |
| CT AAP  | CT American Academy of Pediatrics                                  |
| DCF     | Department of Children and Families                                |
| DECD    | Department of Economic and Community Development                   |
| DOL     | Department of Labor  |
| DPH     | Department of Public Health  |
| DSS     | Department of Social Services                                      |
| ED      | Emergency Department   |
| EPA     | Environmental Protection Agency                                    |
| HUD     | Housing & Urban Development  |
| IT      | Intermediate-term  |
| IPM     | Integrated Pest Management   |
| CSSD/JJ | Court Support Services Depart./Juvenile Justice                    |
| LHD     | Local Health Department  |
| LT      | Long Term  |
| NAECB   | National Asthma Education Certification Board                      |
| NAEPP   | National Asthma Education Prevention Program                       |
| OSHA    | Occupational Safety & Health Administration                        |
| SDE     | State Department of Education                                      |
| SMACNA  | Sheet Metal and Air Conditioning Contractors' National Association |
| ST      | Short Term   |
| TfO     | Tools for Offices  |
| TfS     | Tools for Schools  |
| TfTs    | Tools for Tech Schools   |
| UCHC    | University of Connecticut Health Center                            |
| UCONN   | University of Connecticut  |

## Appendix D

### References

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