

A COLLABORATIVE EFFORT FOR ADDRESSING ASTHMA IN CONNECTICUT

Connecticut *Statewide Asthma Plan*



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*Executive
Summary*



CONNECTICUT STATEWIDE ASTHMA PLAN

Executive Summary

The Asthma Challenge

Asthma has affected most communities in the state. In 2001, 7.9% (202,000) of adults in Connecticut reported having asthma.¹ The rate was substantially higher among women (9.6%) than among men (6.0%). During the same time period, 8.9% (75,000) of children under the age of 18 were reported as having asthma. In Connecticut, the estimated direct medical costs associated with treating persons with asthma in 2001 were \$154.4 million based on national factors, and the estimated indirect costs due to missed work and other impacts were \$108.9 million, for a total cost of \$263.3 million.

Disparities

Hispanic and black children enrolled in HUSKY A, Connecticut's Medicaid program, had higher rates of asthma than white children. The Children's Health Council (CHC) found that, consistent with other studies, racial and ethnic disparities in asthma care do exist. Asthma-related healthcare received by HUSKY A enrolled children varied significantly by race/ethnicity and by which health plan they used.² Hispanic children with asthma were more likely to have had emergency care than white children, and black children with asthma were more likely than white children to have had emergency care or a hospital admission and less likely to have received care after emergency department (ED) visits.³ Although adult asthma rates are similar for whites, blacks and Hispanics, asthma-related mortality rates are higher for black and Hispanic populations in Connecticut.⁴

Barriers to Care

Barriers to asthma care fall into several interrelated categories. These categories include patient education, low provider adherence to National Asthma Education and Prevention Program (NAEPP) guidelines, systems issues and disparities in care, lack of insurance, poverty, cultural issues, low literacy levels and lack of awareness. The Statewide Asthma Plan (the Plan) responds to these interrelated categories and addresses them through coordinated strategies. These will be implemented across disciplines and incorporated into processes and settings that together will help improve the quality of life for persons living with this chronic disease.

Taking Action

In 2001, the Connecticut Department of Public Health (CT DPH) convened an Asthma Summit and established four work groups to analyze the issues identified at the Summit and to develop recommendations in the areas of clinical management, professional education, public education, and the environment. The Commissioner of CT DPH then appointed a Statewide Asthma Task Force in June 2002 to develop the Plan. The members of the Task Force consist of health experts representing a diverse group of individuals from the medical, pharmacy, public health, consumer, and media sectors involved in asthma care, prevention, and management.

Overarching Goals

- Improve quality of life for persons with asthma
- Reduce asthma-related mortality
- Reduce asthma-related morbidity
- Decrease the number of school and work days lost
- Decrease prevalence of asthma in Connecticut
- Reduce asthma-related ED visits
- Reduce asthma-related hospitalizations and lengths of stay
- Reduce socio-economic and racial disparities in asthma-related mortality, morbidity, ED visits, and hospitalizations
- Reduce direct and indirect costs related to asthma
- Increase patient and provider satisfaction
- Increase public awareness of the seriousness and management of asthma
- Institutionalize and sustain the changes made as a result of the Plan
- Develop preventive measures for asthma

The Plan builds on extensive activities underway within CT DPH, in the medical community, and in the general community through existing initiatives, collaborations, and coalitions. The Plan is designed to create overall systems change through a statewide, regionalized partnership with healthcare providers, insurers, local departments of health, and consumers. The Plan will achieve this through the establishment of a public health infrastructure for a patient-focused approach to asthma in Connecticut with coordinated action across urban centers, towns, and communities.

Plan Components

The Plan focuses on specific goals and recommends detailed strategies and action steps for each component. Advocacy goals were identified across work groups. The goals and recommendations of each component include:

Clinical Management Goal: To encourage the appropriate diagnosis and management of asthma by health professionals by increasing the number of providers incorporating best practices in asthma management consistent with NAEPP guidelines.

Recommendations

- Increase provider adherence to NAEPP guidelines.
- Provide primary and specialty care in a coordinated and appropriate manner to persons with asthma.

Patient Education Goal: To increase each patient's understanding of his/her disease and its management.

Recommendations

- Increase awareness of the signs, symptoms and seriousness of asthma and that asthma can be managed.
- Connect the corps of asthma educators developed by professional education efforts to settings without asthma education programs.

Professional Education Goal: To educate healthcare providers in utilizing the most current knowledge or "best practices" for the treatment and self-management of asthma in accordance with NAEPP guidelines; train ancillary and non-medical professionals who encounter patients with asthma on the disease process of asthma, the use of Asthma Action Plans, and the reinforcement of self-management in various settings.

Recommendations

- Incorporate an asthma curriculum based on NAEPP guidelines in institutions providing professional healthcare education in Connecticut.
- Increase the number of Certified Asthma Educators.
- Increase the number and quality of continuing education opportunities for all persons providing asthma care.
- Increase the number of trained ancillary and non-medical healthcare personnel providing appropriate patient education.

Environment Goal: To reduce exposure to asthma risk factors through the improvement and management of outdoor and indoor environments including homes, schools, and workplaces.

Recommendations

- Identify and reduce environmental risk factors in the homes of people at risk for asthma.
- Improve indoor air quality and reduce exposure to environmental triggers of asthma in the school setting.
- Reduce exposure to second hand smoke.
- Reduce exposure to outdoor air pollutants (including mobile source pollution) by supporting state and regional efforts.
- Reduce workplace exposures to known occupational asthma-causing agents.

Public Awareness Goal: To increase the overall awareness of asthma through educating individuals, institutions and the general public on the seriousness of asthma and that persons with asthma can lead normal lives when their care is managed properly.

Recommendations

- Increase the awareness among the general public of asthma and its risk factors and symptoms.
- Increase the awareness of the seriousness of asthma among key institutions, businesses, and community organizations.

Advocacy Goal: To create an environment that supports effective and comprehensive care through the engagement and advocacy of consumers, providers and asthma-related agencies, and to work with managed care organizations (MCOs) and providers to develop standardized information, coverage and care across systems.

Recommendations

- Increase the number of asthma patients with appropriate asthma-related insurance coverage.
- Increase support for professional education in asthma care and management.
- Implement policies to support improved asthma care and management efforts and ongoing continuous quality improvement.

Surveillance data help to identify key trends in the prevalence of asthma, to target high-risk populations, and to develop appropriate intervention initiatives. The goal of surveillance is to inform implementation of the Plan by collecting and analyzing currently available data as well as identifying data gaps that need to be filled. A Surveillance Committee comprised of statewide partners has been established to provide guidance to the local coalitions and CT DPH as implementation proceeds.

Overall, the impact of asthma in Connecticut has made it necessary for state and local community leaders and programs to collaborate to develop a plan that will translate the national policy recommendations into best practices. The Statewide Asthma Plan will serve as a plan of action that can be utilized at the local level to address asthma in communities throughout Connecticut. Evaluation instruments developed in collaboration with state, regional and local partners will play an important role in ensuring successful implementation of the Plan recommendations. Through the strong commitment of public/private statewide collaborations, we can begin to improve the quality of life for persons with asthma in Connecticut.

Introduction



I. INTRODUCTION

A. The Challenge

The **prevalence of asthma has increased dramatically** in Connecticut and nationwide over the last three decades. In Connecticut, asthma as a contributing cause of death has increased. This chronic disease steals the vitality and well-being from those affected, poses a burden to their families, and costs our nation in excess of \$12.7 billion annually in direct and indirect medical costs.⁵

Asthma can be managed through drug therapy and the application of recognized treatment guidelines to reduce its impact on people's lives.⁶ However, this knowledge has not led to improved care for all patients. Local experience and current literature tell us that asthma treatment is falling short of the established guidelines due to a combination of lack of adherence by providers and patients' inadequate self-management, both of which are linked to limited understanding of asthma and lack of proper asthma-related professional and patient education.⁷

The specific causes of asthma remain unknown, but numerous familial, genetic, infectious, allergenic, environmental, socioeconomic and psychosocial factors are thought to play a role. The causes of exacerbation are now better understood and are related to indoor and outdoor allergens and air pollutants, respiratory infections, exercise, weather changes, food, food additives, drugs, and stress.

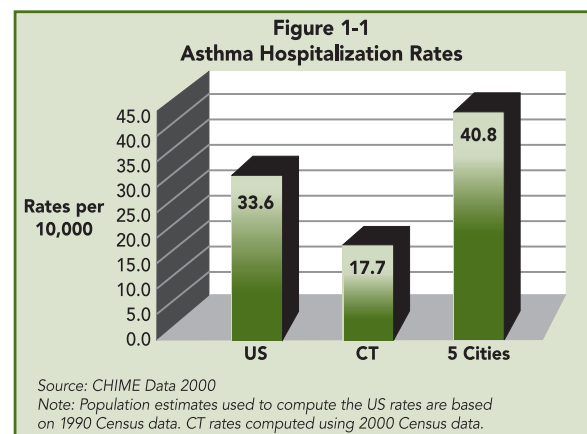
Asthma is more common and more severe among people of color and in urban communities, an important consideration as the state becomes increasingly diverse. This trend is associated with poverty, more difficulty accessing medical coverage and care, and environmental factors. It is also known that poor children and children from black and Hispanic communities are more likely to visit an emergency department (ED), to be hospitalized, or to die from asthma.

B. The Burden of Asthma

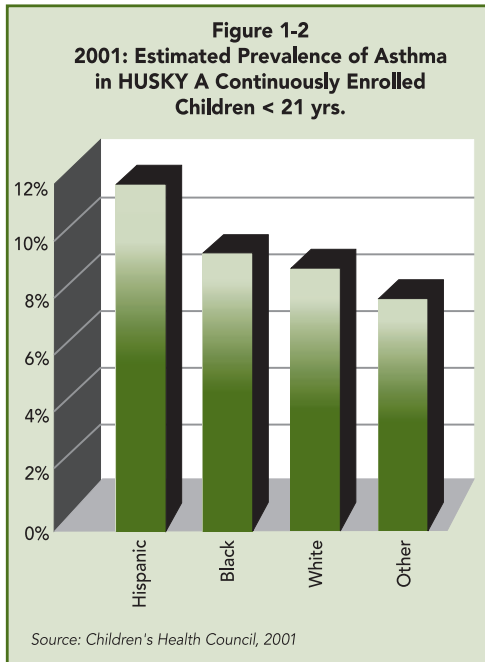
Asthma is a serious public health problem in Connecticut. In response to this growing public health problem, the Connecticut Department of Public Health (CT DPH) established an asthma surveillance system that annually estimates the prevalence and distribution of the disease in the state.⁸

Prevalence of Asthma

In 2001, 7.9% (202,000) of Connecticut adults age 18 and older reported having asthma. The rate was substantially higher among women (9.6%) than among men (6.0%). During the same time period, 8.9% (75,000) of children were reported as having asthma. According to 2000 data, the most recent year for which national estimates are available, the asthma hospitalization rate (17.7/10,000) for children under the age of 14 living in Connecticut was lower than that for children living in the United States

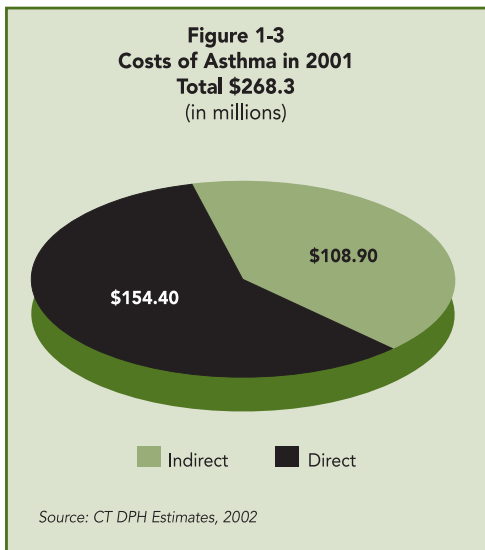


(33.6/10,000). However, the asthma hospitalization rate (40.8/10,000) among children in Connecticut's five largest cities (Bridgeport, Hartford, New Haven, Stamford, and Waterbury) was higher than the rate for the state as a whole or the US (Figure 1-1).



Disparities

Recent studies indicate that racial and ethnic disparities in asthma care do exist. Although adult asthma rates were similar for whites, blacks and Hispanics, asthma-related mortality rates are higher for black (2.7/100,000) and Hispanic (2.1/100,000) populations in Connecticut.⁹ A recent report produced by the Children's Health Council (CHC), which investigates the level of care for children under 21 enrolled in HUSKY A, Connecticut's Medicaid program, revealed that in FFY 2001, Hispanic and black children had higher rates of asthma than white children (Figure 1-2). Evidence of racial and ethnic-associated disparities was seen in asthma-related healthcare. Hispanic children with asthma were more likely than white children to have had emergency care. Black children with asthma were more likely to have had emergency care or a hospital admission and less likely to have received follow-up care after ED visits compared to white children.¹⁰



Costs of Asthma

Quantifying the economic costs of asthma will assist policymakers in determining the appropriate level of investment in efforts to enhance asthma prevention and management. Costs include: a) direct costs which consist of hospital care, inpatient and outpatient ED care, physician's services for inpatient and outpatient care, and medications; and b) indirect costs that reflect mortality, school and work days lost. Direct and indirect costs associated with asthma nationally during 1998 were estimated at \$12.7 billion.¹¹ In Connecticut, estimated direct medical costs related to asthma were \$154.4 million and indirect costs were \$108.9 million in 2001 (Figure 1-3). The proportion of these costs attributable to asthma in children under the age of eighteen was 26% in both direct and indirect cost categories. (These figures are estimates calculated by CT DPH.)

Barriers to Care

■ Nature of the disease

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

■ Patient education

Barriers related to patient education range from self-efficacy to lack of provider understanding of the patient's level of 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 guidelines may be due to a lack of knowledge of the national guidelines and/or a reluctance on the part of the provider to change practice patterns.

■ Systems issues and disparities in care

The lack of coordination across providers impedes the effective delivery of appropriate care 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 are working but do not have employer-provided insurance, do not qualify for Medicaid or cannot afford to purchase their own insurance. An estimated 8.4% of Connecticut residents were uninsured at some point during the preceding 12 months according to a 2001 Household Survey conducted by the Office of Healthcare Access.¹² Many more residents were underinsured or had coverage that did not cover the full cost of effective asthma treatments.

■ Poverty

One of the barriers to receiving diagnostic care and appropriate treatment is low socio-economic status and its attendants such as homelessness and level of educational achievement. In 2000, the poverty rates in Connecticut were 8% for all persons and 11% for children, with poverty highly concentrated in the state's urban centers.¹³

■ Cultural issues

Cultural practices and beliefs may influence communications with health providers and reduce access to effective healthcare self-management. Data show that 18.3% of persons of Hispanic and other origins in urban areas speak a language other than English at home.¹⁴

■ Low literacy levels

Effective asthma care relies on patient self-management. Literacy levels of patients affect their ability to follow complex procedures, understand the use of equipment, adhere to treatment regimens and solve problems associated with care. Among those with chronic illness, more than 40% are functionally illiterate.¹⁵

■ Lack of awareness of asthma

Lack of asthma awareness in the general public is a major impediment to healthcare access and prevention of asthma exacerbation among individuals with asthma. This lack of awareness may also prevent the identification of occupational risk factors and environmental triggers.

C. The Response

In response to the increase in the prevalence of asthma, CT DPH established an Asthma Program with a mission to reduce asthma-associated morbidity and mortality, reduce the number of lost days of work and absenteeism from school, and to improve the quality of

Connecticut Department of Public Health Asthma Program Mission Statement

To reduce asthma-associated morbidity and mortality, reduce the number of lost days of work and absenteeism from school, and improve the quality of life for persons with asthma in the State of Connecticut.

life for persons with asthma. The Statewide Asthma Plan (the Plan) calls for the development of a public health infrastructure for a population-based approach to asthma in Connecticut through coordinated action across major urban centers, towns, and communities.

Public and private entities, working to address asthma on many levels in Connecticut, have joined together to create the Plan and launch a collaborative process to

achieve its goals. The Plan outlines the necessary components of a comprehensive public health approach to asthma and defines short- and long-term goals. Expected outcomes include reduced hospitalizations, ED visits, and school and work absences.

Finally, the Plan is the product of the collective thinking of a broad-based coalition of diverse groups and individuals from the medical, pharmacy, public health, education, media and consumer sectors.

Work Group Charge

- Identify problem areas and partners for collaboration
- Establish desired outcomes
- Review models for effective and evidence-based methodologies
- Identify recommendations particular to CT
- Formulate evidence-based short- and long-term strategies for the greatest impact on gaps, barriers, and needs
- Prioritize recommendations and strategies
- Identify vehicles, tactics, and methodologies necessary to carry out the strategies
- Provide recommendations for the Task Force

Task Force Charge

Develop a statewide asthma plan specifying intervention and prevention strategies specific to the needs of the residents of Connecticut.

Process to Develop the Plan

CT DPH held an Asthma Summit in May 2001, which was attended by more than 300 individuals, including researchers, public health and medical professionals. At the summit, CT DPH disseminated a baseline report, "Asthma in Connecticut," which provided an overview of asthma surveillance data. Experts from different disciplines who shared their perspectives and insights were invited to assist in developing strategies that build upon existing knowledge, resources, and activities to address the asthma problem. Participants were asked to sign up for one of four work groups—Professional Education, Public Education, Clinical Management, and Environment – to provide the foundation for the work of a statewide asthma task force. (See sidebar for Work Group and Task Force Charges).

In August 2001, CT DPH Asthma Program received funding from the Centers for Disease Control and Prevention (CDC) to support development of a statewide asthma plan to address the growing number of people with asthma in the state.

The scope and sequence of the planning process were defined, and included: the policy parameters of the Plan; its long-term impact and integration within the existing structure of CT DPH; definition of leadership protocols and organizational structure to ensure the successful completion of the Plan; development of a process plan for work groups and a task force that includes the clarification of roles and objectives of each group and the sequence of activities for each meeting; promotion of a process for involvement of key stakeholders; definition of

data requirements to support the planning process and a work plan to collect and analyze data; and development of a communication plan, protocols, and contact lists for the work groups and task force.

Work Groups

After the statewide Asthma Summit in May of 2001, CT DPH convened four work groups in the areas of Clinical Management, Environment, Professional Education and Public Education to identify barriers and gaps within the state and to recommend strategies to a task force. Work group members were solicited from among the Summit attendees. The purpose of convening the four work groups in advance of a task force was to engage stakeholders at various levels statewide, to prepare the groundwork for the Plan, and to establish a list of priority topics, issues, and recommendations for a task force.

The work groups accomplished this work through a series of five meetings beginning November 2001 through August 2002. (See Appendix A: Work Group Membership.)

Statewide Asthma Task Force

The Commissioner of CT DPH appointed the Statewide Asthma Task Force (Task Force) as the appropriate vehicle to develop the Plan. The Task Force, which first convened in June 2002, represents experts in the healthcare field from public and private organizations, community-based groups, consumers and the media. (See sidebar for Task Force Representation.)

A task force that is a collaboration of key partners, leaders, consumers and providers can have significant impact on specific areas of concern, as in this case, asthma. The Task Force membership provides a level of authority and expertise that will encourage inclusion of appropriate and successful interventions, measurable outcomes, policy changes, and an evaluation of the process.

Task Force Charge: The general charge of the Task Force was to recommend overarching priorities and to develop a statewide asthma plan of intervention and prevention based on program needs and priorities identified by the work groups. A primary purpose was to provide a forum for information exchange among groups and individuals interested in asthma for purposes of advising and guiding the development of the Plan.

Statewide Asthma Task Force Representation

Statewide Organizations

- American Lung Association of CT
- Association of Environmental and Occupational Medicine Physicians
- CT Area Health Education Center
- CT Association of Directors of Health
- CT Association of Boards of Education
- CT Commission on Children
- CT Chapter American Academy of Family Practice
- Children's Health Council
- CT Nurses Association
- CT Pharmacists Association
- CT Primary Care Association
- CT Public Health Association
- CT Society for Respiratory Care
- CT Thoracic Society

Health Institutions

- Bridgeport Community Health Center
- CT Children's Medical Center, Asthma Center
- Charter Oak Community Health Center
- Danbury Hospital
- Health Net of the Northeast
- Hill Health Center
- Oxford Health Plan
- Stamford Community Health Center
- St. Mary's Hospital
- University of Connecticut Health Center
- Yale Children's Hospital

State Agencies

- CT Dept. of Economic & Cmty. Development
- CT Dept. of Education
- CT Dept. of Environmental Protection
- CT Office of Policy & Management

Local Government and Regional Coalitions

- Asthma Shoreline Action Partnership
- Hartford Asthma Call to Action
- New Haven Asthma Coalition

Other

- Community Foundation for Greater New Haven
- Consumers
- CT Public Television & Radio

D. Asthma-Related Activities in Connecticut

The Plan builds on extensive activities and existing efforts underway in Connecticut within the medical community, other sectors in the healthcare community, and CT DPH.

CT DPH Asthma and Asthma-Related Programs

CT DPH Intradepartmental Work group	Asthma Program	This cross-division working group ensures that asthma education and data collection becomes integrated into existing program areas where appropriate.
CT Pediatric Asthma Management Initiative	Asthma Program	Comprehensive public health approach to pediatric asthma designed to improve management of asthma in children by encouraging physicians to use a standardized asthma action plan.
Asthma surveillance	Asthma Program	Identifies at-risk groups, monitors trends and evaluates program effectiveness.
Informational newsletter	Day Care Regulations/Licensing	Provides updated information and education for daycare providers.
Asthma web page	Office of Communication	Provides information and key links for the public, patients and healthcare professionals; contains a resource directory and CT DPH publications.
Title V asthma performance measure as part of MCH block grant	Maternal and Child Health	Conducts surveillance and education activities to build the capacity within Title V programs to enhance asthma awareness and management.
Information about asthma for new parents	Immunization Program	Provides information on reducing a child's potential risk of developing asthma to all new parents as part of the immunization packet.
Integration of Lead and Asthma Program activities	Lead Program	Combines messages focusing on children and the environment in displays and education materials, e.g. 2003 Asthma/Lead Calendar.

State Funded Asthma Programs: Medical Community

Physician Education/Healthy Families	St Mary's Hospital	Provides in-office asthma training to pediatric practices; conducts environmental home assessments for families of newborns at risk for developing asthma.
Comprehensive Community-Based Asthma Program	Ledgelight Health District	Conducts public and professional education, surveillance, environmental home assessments and school-based initiatives within a 10-town area.
Asthma Collaborative	New England Pediatric Asthma Management Initiative	A consortium of asthma professionals addressing best practice for asthma management.
Easy Breathing Program	Connecticut Children's Medical Center	A standardized clinical management program for clinicians implemented in five communities.
Emergency Department Survey	Community Health Network of Connecticut	Conducted a survey regarding ED utilization patterns.

Other State Funded Programs

School Resource Manual; Childcare Resource Guide	Infoline/United Way	Information to address asthma management for school nurses, other school staff and childcare providers.
Breath Express	American Lung Association of CT	An educational mobile van visits schools and communities with asthma and environmental tobacco smoke messages.
Asthma Vignettes	Connecticut Public Television & Radio	A series of 10 vignettes in English and Spanish providing messages and action steps to parents and children.
Early Identification of Pediatric Asthma	City of New Haven	Conducts training for agencies that serve young children, coordinates asthma activities within the city; integrates asthma management in schools.
Asthma Action Plan in Schools	City of Hartford	Promotes use of Asthma Action Plans in the schools; provides asthma management training to school nurses.
Building Parent Power	University of CT Cooperative Extension	Development of a train-the-trainer manual for use in education of the public on asthma triggers in the home and remediation strategies.
Tools for Schools	Connecticut School Indoor Environment Resource Team	A training program for schools to address environmental indoor air quality including asthma.

*Framework
for Planning*



II. FRAMEWORK FOR PLANNING

Organizational Framework

The four work groups were convened to provide recommendations for use by the Task Force in preparing the Plan. The work groups were organized around four major areas: Clinical Management, Professional Education, Public Education, and Environment. As the recommendations evolved, work group and Task Force members identified other components necessary for a successful plan, including patient education, policy considerations and surveillance.

A. Principles and Assumptions

The recommendations in the *NAEPP Practical Guide for the Diagnosis and Management of Asthma* are based on the opinion of the NAEPP Expert Panel and focus on four key components for long-term control of asthma:

1. Use of objective measures of lung function to assess the severity of asthma and to monitor the course of therapy.
2. Use of environmental control measures to avoid or eliminate factors that precipitate asthma symptoms or exacerbations.
3. Use of comprehensive pharmacologic therapy for long-term management designed to reverse and prevent the airway inflammation characteristic of asthma as well as pharmacologic therapy to manage asthma exacerbation.
4. Use of patient education that fosters a partnership among the patient, his/her family, and clinicians.

The eleven-member NAEPP Expert Panel prepared the updated guidelines based on a systematic review of scientific evidence. The panel includes representatives from the fields of allergy and immunology, family practice, internal medicine, pediatrics, pharmacology, public health, and pulmonary medicine.

Principles and Assumptions

Within the four components are principles of asthma management that served as the starting point for basic recommendations for the diagnosis and management of asthma to help clinicians and patients make appropriate decisions regarding asthma care. Beginning with NAEPP guiding principles, an extensive literature search and a review of successful national asthma models were conducted before the development of principles and assumptions for each of the specific components. During the development of these principles, and during the course of the first set of work group meetings, it was determined that there were many assumptions and misconceptions about asthma that needed to be considered before designing recommendations. The following principles and assumptions apply to the overall Plan.

Clinical Management

Principles

- Successful adherence to treatment protocols is attained through open communication and individualization of an Asthma Action Plan for asthma management. The goals and outcomes of the plan should be reviewed and adjusted as needed with the participation of the patient in decisions about care.

- Systematic teaching of patients increases the likelihood of positive outcomes.
- Promotion and development of programs to address gaps and barriers to asthma management and the care and diagnosis of patients with asthma should be conducted in accordance with the *NAEPP Practical Guide for the Diagnosis and Management of Asthma*.

Assumptions

- Physicians often rely on clinical judgment in lieu of objective measures in diagnosing asthma; underdiagnosis and inappropriate therapy may contribute to asthma mortality and morbidity.
- Therapeutic strategies should be considered in concert with patient/clinician partnership strategies.

Patient Education

Principles

- Patient education should foster a partnership among the patient, family, clinician, and other healthcare providers.
- Education should begin at the time of diagnosis and be integrated into every step of clinical care to be most effective.
- Education for asthma patients should contain evidence-based or consensus-based elements.
- The efficacy of patient education and self-management should be measurable.
- Healthcare professionals and educators should maximize opportunities and settings for patient education.

Public Education

Principles

- Building upon existing efforts enhances the efficacy of public education.
- Building an information network and resource exchange ensures a consistent message.

Assumption

- Evaluation and assessment of the overall asthma education effort are important for continuous improvement and maximum effectiveness.

Professional Education

Principles

- Understanding of the NAEPP guidelines by professionals determines the level of adherence to the guidelines and impacts asthma care and management.
- Coordination of efforts through better healthcare provider information increases successful management.

Assumptions

- Education for healthcare providers based on the use of clinical guidelines for asthma treatment may change provider behavior and improve patient satisfaction, health and use of healthcare services.

- Multiple strategies are more effective than a single strategy, e.g., use of the NAEPP guidelines and educational outreach by peers such as pharmacists and community opinion leaders.
- Effective communication includes the training of providers in the use of language that is easily understood by the patient, and the use of return demonstration techniques.

Environment

Assumptions

- The role of the environment in causing asthma is not well understood, while its role in exacerbating asthma is more broadly accepted.
- Exposure to indoor allergens and irritants is associated with exacerbation of asthma symptoms.
- The degree to which outdoor pollutants may be a cause of asthma is unknown.¹⁶

Surveillance

Principles

- Surveillance data need to be reported regularly and in a manner that informs providers, schools, and other agencies that provide asthma care.
- Surveillance data should be used to inform policy development, to guide legislation, and to develop targeted interventions.

B. The Approach

Collaborative partnerships will continue to implement the Plan recommendations by building upon existing initiatives, local coalitions and activities. The Task Force has endorsed a patient-focused model on which to base the Plan. To achieve this, the plan for action consists of integrated and complementary approaches, and systems change. (See Figure 2-1 Conceptual Framework for Asthma Planning.)

Integrated and Complementary Approaches

An integrated approach to healthcare delivery requires consistency and communication across all service providers. The approach is a patient-focused model that is based on an integrated system of care. A patient-focused system provides access to health-care, information, self-management education and follow-up care that is sensitive to cultural and socio-economic issues through a comprehensive and integrated system of care among insurers, primary care providers, EDs, home care practitioners, schools, workplaces, and clinics. The recommendations outlined in the Plan acknowledge the need for collective, integrated action.

Systems Change and Guideline Adherence

“Clinical systems and procedures, including patient tracking and provider reminders, help clinicians implement guidelines and change the way they practice. Without these systems (changes), implementation of guidelines will not happen...while clinician education is necessary, it is not sufficient; systems must be added to education in order to change clinician behaviors.”

From “*Provider Education To Promote Implementation of Clinical Practice Guidelines,*” Judith K. Ockene, PhD, Med; and Jane Zapka, ScD, CHEST/118/August, 2000

Recent studies document the increasing use of complementary therapies to augment traditional medical practices, highlighting the need for the integration of both approaches in the delivery of healthcare and health professional training.¹⁷ Increasingly, health professionals are seeing the benefits of working with healthcare consumers in a partnership to promote wellness and healthy lifestyles. Educating consumers about these complementary options for achieving and maintaining health, either through individual counseling or public health campaigns, is a key element in the movement toward promoting health and preventing disease.

Systems Change

Systems change is about an organization(s) or an infrastructure adapting to the changing demands made upon it by the environment in which it operates.¹⁸ It involves changes in the way different agencies or institutions work together to address an issue. The health environment in Connecticut is changing at a rapid pace. The increase in environmental hazards and a greater influx of immigrant populations compounded by the overall increased prevalence of asthma have placed a greater strain on both the healthcare financing and delivery systems. The Plan outlines recommended changes in the way healthcare providers, educators, clinics, hospitals, EDs and other agencies provide care to reduce mortality and morbidity, increase positive outcomes, and reduce the substantial financial burden of asthma.

The major areas that need change are:

- **Behavior change**—changing healthcare systems to affect the way providers conduct business.
- **Education and awareness**—changing systems to ensure collaboration in the development of consistent and effective messages, and information dissemination across systems.
- **Coordinated Systems of Care**—sharing information and increasing coordination across organizations and providers involved in the care and management of asthma.

Figure 2-1 Conceptual Framework for Asthma Planning
Components of a Patient-Focused System



A Patient-focused System Provides: Access to healthcare, information, self-management education and follow-up care that is sensitive to cultural and socio-economic issues, through a comprehensive and integrated system of care between insurers, PCPs, EDs, home care practitioners, schools, workplaces, and clinics.

The Plan



III. THE PLAN

A. Overarching Goals

The Asthma Task Force identified the following overarching goals for the Plan on which the recommendations are based.

- Improve the quality of life for persons with asthma
- Reduce asthma-related mortality
- Reduce asthma-related morbidity
- Decrease the number of school and work days lost
- Decrease the prevalence of asthma in Connecticut
- Reduce asthma-related ED visits
- Reduce asthma-related hospitalizations and lengths of stay
- Reduce socio-economic and racial disparities in asthma-related mortality, morbidity, ED visits, and hospitalizations.
- Reduce direct and indirect costs related to asthma
- Increase patient and provider satisfaction
- Increase public awareness of the seriousness and management of asthma
- Institutionalize and sustain the changes made as a result of the Plan
- Develop preventive measures for asthma

B. The Plan Components

The Plan includes a comprehensive set of action items that provide working guidance for a plan of action to address asthma in Connecticut. Listed below for each component are brief problem statements, recommendations and strategies. Detailed strategies outlining specific action steps, partners and resources can be found in Appendix B: Detailed Strategy Matrices.

1. Clinical Management

Problem Statement

The specific cause of asthma is unknown, but numerous factors may play a role including familial, infectious, allergenic, environmental, socio-economic and psychosocial.

Exacerbations are now better understood and are related to allergens, air pollutants, respiratory infections, exercise, weather changes, food, food additives, drugs, and stress.¹⁹ While asthma management has improved through drug therapy and standardized guidelines, this has not translated into improved care for all patients. The reason for this is multifactorial with issues related to: 1) provider practice patterns, 2) patient access to care, 3) patient adherence to a treatment plan, and 4) the healthcare system itself. Three major categories under which barriers to care could be identified are: a) lack of adherence to clinical practice guidelines, b) physician-patient issues, and c) system-based issues.

Since the NAEPP guidelines were issued in 1991, awareness and acceptance of the guidelines as a resource have increased among care providers. There is, however, evidence

that even though physicians are aware of and accept the principles on which the guidelines are based, they are not universally followed in daily practice.^{20 21 22}

The research has demonstrated that asthma management plans are effective, and that there is a need for their use in coordination with patient education.^{23 24 25}

System-based issues pose a larger problem. Asthma is a public health problem, and effective interventions necessitate an investment in social and community resources that extend beyond medical care and into the realm of behavioral and lifestyle modifications, educational services, housing, environment, and other community services. Communication and collaboration across systems and involvement of specialists in asthma care improve patient outcomes, lower healthcare costs and reduce the number of missed school and work days.

Goal: The goal for Clinical Management is to encourage the appropriate diagnosis and management of asthma by health professionals by increasing the number of providers incorporating best practices in asthma management consistent with NAEPP guidelines.

Recommendation 1.

Increase provider adherence to NAEPP asthma guidelines.

Strategies

- 1.1 Provide up-to-date asthma information on diagnoses, medications, environmental risk factors, best practices and patient management plans to providers and asthma management partners.
- 1.2 Promote and encourage the early and appropriate diagnosis and treatment of asthma.
- 1.3 Utilize asthma patient information that is in a user-friendly format, in the appropriate language, and culturally relevant.
- 1.4 Promote follow-up visits following acute care episodes.
- 1.5 Promote appropriate referrals to specialty care providers.
- 1.6 Support health practitioners in efforts to educate patients in clinical settings.

Recommendation 2.

Provide primary and specialty care in a coordinated and appropriate manner to persons with asthma.

Strategies

- 2.1 Promote the continuity of care, including appropriate and coordinated care management for persons with asthma.

- 2.2 Work with MCOs to develop common guidelines and standards for asthma care.
- 2.3 Encourage communication among caregivers including primary care physicians, specialists, parents, childcare, and schools in the development and use of a coordinated care plan.
- 2.4 Develop a systems approach to identify and address barriers to the delivery of appropriate asthma management.
- 2.5 Include schools, childcare facilities and health professionals in the proactive management of asthma patients via the Asthma Action Plan.

2. Patient Education

Problem Statement

Patient education barriers are numerous, ranging from the social stigma of being diagnosed with asthma, to inadequate provider efforts, to the 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 that become barriers to receiving a diagnosis and appropriate care.

Key elements of education for asthma patients include:

- *Environmental control*
- *Effective use of medication to manage asthma*
- *Successful communication with healthcare providers*

Patient education in the use of written self-management plans has been proven to improve outcomes when tailored to meet the needs of each patient, when sensitive to cultural beliefs and practices, and when it involves all family members or caretakers with educational materials appropriate to their educational level and language.²⁶

Goal: The goal for Patient Education is to increase each patient's understanding of his/her disease and its management.

Recommendation 1.

Increase awareness of the signs, symptoms and seriousness of asthma and that asthma can be managed.

Strategies

- 1.1 Use consistent information and standardized tools for patient education, building on existing programs and materials.

Recommendation 2.

Connect the corps of asthma educators developed by professional education efforts to settings without asthma education programs.

Strategies

- 2.1 Expand the use of existing resources and information for patients (social marketing techniques).

3. Professional Education

Problem Statement

Education in an interactive relationship between patients and providers of asthma care is fundamental to asthma management. A review of national models reveals consistent problems in the area of professional education, including low adherence to guidelines, lack of asthma education training of medical and healthcare workers, minimal continuing education on asthma, lack of understanding of the patient's socioeconomic status, and lack of knowledge about the patients' level of understanding of their diagnosis and their treatment regimen. To have maximum impact on provider behavior, professional education efforts must be well integrated with other quality improvement activities, health systems reform, and surveillance efforts related to asthma care and management.

It is well documented that physicians/clinicians who promote and adhere to evidence-based guidelines increase the quality of patient care, and decrease asthma-related hospitalizations, costs, morbidity and mortality.²⁷

Professional Education: The Problems

- Lack of adherence to NAEPP guidelines.
- Unwillingness to change practice.
- Lack of knowledge or skills on educational methodology for effective asthma education.

Goal: The goal for Professional Education is to educate healthcare providers in utilizing the most current knowledge or "best practices" for the treatment and self-management of asthma in accordance with NAEPP guidelines; train ancillary and non-medical professionals who encounter patients with asthma on the disease process of asthma, the use of Asthma Action Plans, and the reinforcement of self-management in various settings.

Recommendation 1.

Incorporate an asthma curriculum based on NAEPP guidelines in institutions providing professional healthcare education.

Strategies

- 1.1 Develop model curriculum elements to use across institutions (tailored to specific programs and all levels of care providers) to ensure a consistent, comprehensive message.

Recommendation 2.

Increase the number of Certified Asthma Educators.

Strategies

- 2.1 Expand the availability of and enrollment in programs to prepare candidates for the Asthma Educator Certification Examination.
- 2.2 Advocate for reimbursement for services of Certified Asthma Educators in outpatient settings.
- 2.3 Conduct cost-effectiveness studies to assess the effectiveness of the Asthma Educator Certification strategy and specific practices for use in asthma management.

Recommendation 3.

Increase the number and quality of continuing education opportunities for all persons providing asthma care.

Strategies

- 3.1 Develop model continuing education curricula and presentations tailored to specific audiences to provide consistent training.
- 3.2 Collaborate with professional associations and major healthcare institutions to ensure that a multidisciplinary asthma curriculum is adopted and delivered through expanded and improved continuing education of asthma care providers.
- 3.3 Develop public/private partnerships to fund expanded continuing education.

Recommendation 4.

Increase the number of trained ancillary and non-medical healthcare personnel providing appropriate patient education.

Strategies

- 4.1 Increase the capacity to educate ancillary and non-medical personnel through new or expanded training programs.
- 4.2 Develop a curriculum for training ancillary and non-medical personnel.

4. Environment

Problem Statement

Environmental factors play a significant role in the health of people with asthma. High levels of ambient air pollutants pose a risk to individuals with asthma. Attention to the quality of indoor environments has grown in recognition that pollutants can concentrate in the indoor air resulting in significant unhealthy exposures. The Institute of Medicine reported in 2000 that biological and chemical exposures found in indoor environments could exacerbate or even cause asthma.²⁸

Environment: The Problems

- Tobacco Smoke
- Fuel Emissions
- Bioaerosols
- Volatile Chemicals
- Mold

The U.S. Government Accounting Office reported in February of 1995 that more than half of the nation's schools had problems that affected indoor air quality.²⁹ In Connecticut, the most frequently reported cause of occupational asthma is indoor air pollution.³⁰

Allergens and irritants generally accumulate due to inadequate ventilation and poor maintenance. About half of the cases of early childhood asthma, chronic bronchitis, and wheezing are related to exposure to secondhand cigarette smoke, according to a study by the Agency for Healthcare Policy and Research.³¹ There are significant barriers to comprehensive asthma prevention and management due to incomplete knowledge regarding causation, lack of awareness of the impact of environmental pollutants, limited experience with effective environmental interventions, and inadequate resources for improving the environment.

Other challenges associated with environmental factors include accountability to remediate indoor environments, difficulty in fully exploring environmental aspects of patients' homes and work environments within current time constraints in the clinical setting, limited understanding by primary care clinicians of the possible role of building conditions as they assess environmental relationships to asthma, and lack of collaboration among MCOs, health providers, municipalities and the state. With this current knowledge, the most pressing issue is to find opportunities for prevention in those groups known to be at higher risk and to avoid adverse outcomes in those who already have the disease.³²

Goal: The goal for Environment is to reduce exposure to asthma risk factors through the improvement and management of outdoor and indoor environments including homes, schools and workplaces.

Recommendation 1

Identify and reduce environmental risk factors in the homes of people at risk for asthma.

Strategies

- 1.1 Establish a program in local health departments to address "asthma healthy homes."
- 1.2 Encourage providers to address environmental factors in the development of Asthma Action Plans.
- 1.3 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.

Recommendation 2.

Improve indoor air quality and reduce exposure to environmental triggers of asthma in the school setting.

Strategies

- 2.1 Address indoor environment in schools through the Connecticut School Indoor Environment Resource Team and Tools for Schools, including support of model designs such as EPA's "Design Tools for Schools."
- 2.2 Reduce the impact of construction on school occupants.
- 2.3 Reduce the idling of diesel buses and trucks in the vicinity of schools.

Recommendation 3.

Reduce exposure to second-hand smoke.

Strategies

- 3.1 Use the CDC model to implement the Statewide Tobacco Control Plan to address smoking cessation and smoking prevention.

Recommendation 4.

Reduce exposure to outdoor air pollutants (including mobile source pollution) by supporting state and regional efforts.

Strategies

- 4.1 Support state pollution prevention programs.
- 4.2 Support the National Clean Air Act Program to reduce air pollution.
- 4.3 Promote pollution prevention activities, including recycling and materials replacement efforts, as well as promote air monitoring.
- 4.4 Promote state and regional efforts that promote low emission transit initiatives.
- 4.5 Improve public awareness action on Air Quality Index.

Recommendation 5.

Reduce workplace exposures to known occupational asthma-causing agents.

Strategies

- 5.1 Encourage healthcare providers to ask adults with asthma about their workplaces, and report work-related asthma cases to the Department of Public Health and the Department of Labor.
- 5.2 Reduce worker exposure to workplace causes of asthma, especially latex (healthcare, foodservice, childcare), isocyanates, and metal-working fluids.
- 5.3 Reduce the number of workers who develop and/or exacerbate asthma from poor indoor air quality in public buildings as well as in private office settings and other non-industrial buildings.

5. Public Awareness

Problem Statement

Community-based asthma education has been shown to improve health outcomes by supporting patient and family management efforts. Community awareness raises the knowledge of the general public of the impact occupational and environmental factors have on asthma. Community education programs focusing on prevention and protection from environmental triggers have an impact. Research has shown that strong local programs produce measurable progress toward statewide recommendations. Proven health promotion strategies include:

- Increasing the number of organizations and individuals involved in planning and conducting community-level education and training programs;
- Using state and local counter-marketing campaigns to place pro-health messages that inform, educate and support local initiatives;
- Improving integration of services and communication across systems; and
- Providing access to consistent and updated asthma information and messages.

Goal: The goal for Public Awareness is to increase the overall awareness of asthma through educating individuals, institutions and the general public on the seriousness of asthma and that persons with asthma can lead normal lives when their care is managed properly.

Recommendation 1

Increase the awareness among the general public of asthma and its risk factors and symptoms.

Strategies

- 1.1 Develop and establish partnerships with and among key institutions, community groups and providers.
- 1.2 Expand asthma awareness efforts through partnerships with and among key institutions, community groups and providers.

Recommendation 2.

Increase the awareness of the seriousness of asthma among key institutions, businesses and community organizations.

Strategies

- 2.1 Develop and implement a targeted social marketing campaign that is culturally sensitive and that uses a consistent set of messages.
- 2.2 Enhance statewide information sources to provide a central clearinghouse of asthma services and educational resources.

6. Advocacy

Problem Statement

Experts support the need for systems change in three areas: 1) healthcare delivery and financing, 2) policies to improve the healthcare infrastructure, and 3) policies that move us toward research and evidence-based medicine. The approach is to advocate for increased funding and reimbursement for services to better address healthcare coverage and delivery with a particular emphasis on patient education. The overall outcome would be that communities and professionals are provided with resources to improve healthcare, health education and asthma-related services and that care is accessible to everyone.

Goal: The goal for Advocacy is to create an environment that supports effective and comprehensive care through the engagement and advocacy of consumers, providers and asthma-related agencies, and to work with MCOs and providers to develop standardized information, coverage and care across systems.

Recommendation 1

Increase the number of asthma patients with appropriate asthma-related insurance coverage.

Strategies

- 1.1 Advocate for appropriate asthma-related insurance coverage (private/HUSKY/Managed Care).
- 1.2 Advocate for the clarification, publication and dissemination of multi-lingual specific asthma benefits coverage and Medicaid coverage information.
- 1.3 Increase the number of people enrolled in HUSKY A/Managed Care to allow for appropriate asthma-related insurance coverage.
- 1.4 Develop an agenda to improve access to primary care and diagnostic screening.
- 1.5 Extend continuous health insurance coverage to all uninsured, regardless of legal status.
- 1.6 Work with insurers to promote appropriate coverage in accordance with model benefit packages for essential asthma services, including age-appropriate medications, delivery services and self-management education.
- 1.7 Advocate for reimbursement of providers for time spent on patient education.
- 1.8 Increase perceived value of comprehensive asthma coverage among purchasers of private insurance plans to increase the proportion of private plans offering such coverage.

Recommendation 2.

Increase support for professional education in asthma care and management.

Strategies

- 2.1 Advocate for funding for professional education and provide education reimbursement to professionals providing asthma education to patients.
- 2.2 Partner with pharmaceutical companies for best practices, education and provision of funding for patient, provider, and pharmacist education efforts.
- 2.3 Establish an ad hoc work group to review current federal funding applicable to education programs and conferences on health and community issues.

Recommendation 3.

Implement policies to support improved asthma care and management efforts and ongoing continuous quality improvement.

Strategies

- 3.1 Advocate for increased emphasis on asthma in licensing exams.
- 3.2 Establish a state mandate for inclusion of an Asthma Action Plan in school records for each child with asthma.
- 3.3 Develop and implement a statewide agenda for asthma prevention and research with funding to advocate for education, treatment, intervention and prevention of asthma.
- 3.4 Work with private funders to establish public health grants to foster asthma-friendly communities and home environments.
- 3.5 Advocate for the creation of a forum whereby the concerns of the consumers, stakeholders and community are presented.
- 3.6 Advocate for the spending of state dollars in accordance with CDC-recommended allocations per capita guideline of \$6.50 per person on smoking prevention and other respiratory health issues.

C. Surveillance

The goal of surveillance is to inform implementation of the Plan by collecting and analyzing currently available data as well as identifying data gaps that need to be filled.

Data collection and research provide vital information to equip health professionals in combating the public health threat of asthma in Connecticut. Data help to identify key trends in the prevalence of asthma, to target high-risk populations, and to develop appropriate intervention initiatives.

Areas of Surveillance

- Prevalence
- Hospitalization Rates
- ED usage rates
- Mortality
- Occupational disease

Several data sources are used to provide a picture of asthma in Connecticut. The Behavioral Risk Factor Surveillance System (BRFSS), a statewide telephone survey coordinated by the CDC, provides state-level prevalence estimates for adults and children under age 18. The Children's Health Council has used enrollment and encounter data to estimate the prevalence of asthma among children under the age of 21 who are enrolled in HUSKY Part A (Medicaid managed care). Data pertaining to hospitalizations and ED visits among children ages 0–14 are available from CHIME Inc., an affiliate of the Connecticut Hospital Association. Mortality data from Connecticut's vital statistics database have been used to evaluate deaths with asthma listed as a primary or contributing cause of death. Finally, the Occupational Disease Surveillance System (ODSS) has been used to look at new and work-aggravated cases of asthma among workers in Connecticut. (See Appendix D: Surveillance Data Sources.)

In addition to the data sources currently being used, several projects are underway to enhance asthma surveillance. These projects focus on increasing the ability to estimate asthma prevalence among school-age children. They include legislatively mandated reporting of asthma on the school health assessment form and a pilot administration of a web-based application of the International Study of Asthma and Allergies in Children (ISAAC). In addition, two asthma questions have been included on the Connecticut School Health Survey implemented in Connecticut high schools.

Data Limitations

Although the data sources that are currently available provide a picture of asthma in Connecticut, there are several limitations of these data:

- Prevalence data for children need to expand to include all Connecticut children.
- Prevalence estimates for adults are based on self-reports, not on documented physician diagnoses.
- Hospitalization and ED usage rates are based on visits not individuals.
- Mortality data are limited due to the inconsistent reporting of asthma as a primary cause of death on death certificates.
- Occupational asthma data are limited due to underreporting of occupational diseases as a whole.
- There is a lack of accurate data on the costs attributed to asthma and/or asthma-related illnesses.

A Surveillance Committee has been established to address these and other data issues. The main areas of focus for this group will be to provide guidance to the local coalitions and CT DPH to direct asthma interventions and programming, to identify data gaps and needs, and to identify data projects.

Next Steps



IV. NEXT STEPS

With the completion of the Plan, the next step to addressing the asthma-related issues identified in Connecticut is to set forth plans for implementing the recommendations outlined in the Plan. It is important to develop strong infrastructures at the local level that will be able to initiate and sustain community-based asthma initiatives based upon the Plan recommendations. In addition, it is important to enhance the infrastructure at the state level with improved surveillance, accurate and available information on asthma resources, and support for ongoing asthma efforts of local programs and coalitions. Both short-term and long-term implementation measures need to be put in place as does a plan to evaluate the effectiveness of the strategies implemented to address asthma in Connecticut.

A. Short -Term Implementation

The Statewide Asthma Plan was released at the May 2003 Statewide Asthma Meeting. The meeting served as the starting point for implementation of the Plan. Short-term implementation steps will include the development of a process to support Plan implementation at the regional and local levels and appointment of an Asthma Advisory Council.

Asthma Advisory Council

The Commissioner of the Department of Public Health will establish an Asthma Advisory Council (Council). The Council's role and responsibilities are to:

1. Advise and make recommendations on asthma-related matters.
2. Advise CT DPH in working with communities in the implementation of the Plan.
3. Review and evaluate the progress of the Plan implementation.
4. Serve a minimum of one (1) year on the Council with the potential for re-appointment.

Council members will be former members of the Asthma Task Force and work groups established after the 2001 Asthma Summit with the addition of others in the field as needed to ensure racial and ethnic diversity and statewide geographic representation.

Regionalization

The primary means of implementing the Plan will be through the promotion and support of expanded regional and local asthma-related activities, including regional and local asthma coalitions, and targeted interventions. In this effort, CT DPH seeks to support and build on the extensive activities underway at present by the partners who participated in the planning process.

Connecticut is currently regionalized allowing for easy access and identification of key public health partners. Within each region, meetings with health directors will occur to inform them of the Plan and to designate a key individual to assist in conducting informational meetings at the local level. The informational meetings will serve the following purposes: a) to share the Plan components with local communities, b) to provide a forum for sharing information regarding existing asthma activities, c) to facilitate collaboration between asthma groups, and d) to facilitate the development of local coalitions. Technical assistance will be provided to identify asthma groups within each region as well as to facilitate between groups within a region or across regions.

The Asthma Advisory Council and partners, in conjunction with CT DPH, will address statewide issues requiring coordination or action at the state level. The overall goal will be to have each region in the state conducting and/or participating in asthma activities.

B. Long-Term Implementation

Beginning in Fall 2003, regional communities will begin to assess their resources and decide which Plan components can be implemented. Each community will be responsible for the implementation with CT DPH serving as a resource and providing technical assistance as needed. The role of the partners and Asthma Advisory Council members will be vital to this process by providing the leadership and expertise in various areas. For example;

- Partners and the Asthma Advisory Council will be called on to assist in strengthening existing asthma coalitions and establishment of coalitions in areas of the state with no current asthma activities.
- The Asthma Advisory Council will provide oversight to evaluate the process throughout the state.
- Regional meetings will provide continuing opportunities for groups to come together and share “lessons learned” from various projects and facilitate continued collaborations across groups and communities.

C. Plan Evaluation

One of the primary objectives of the Plan evaluation is to assess the efficiency and effectiveness of implementation activities by comparing the Plan’s objective in a given area with the outcome of an implementation initiative. Another important aim of the evaluation is to provide continuous feedback on how initiatives are proceeding under the Plan. The evaluation will provide the data to support continuous improvement of interventions continued or launched under the Plan.

The Plan evaluation process will involve four major components: a) process evaluation of early development and first stage implementation, b) assessment of implementation of core activities, c) outcomes evaluation that will assess the impact of the intervention relative to the Plan objective, and d) context evaluation which examines how the Plan operates within a community.

The design of the methodological approach used in the evaluation will include outcome measures that assess the effectiveness and efficiency of the intervention under consideration. The evaluation instruments will be developed in collaboration with regional or local partners in their respective areas. The evaluative function is an integral component of the Plan and plays an important role in the successful implementation of the outlined recommendations.

Conclusion



V. CONCLUSION

The Connecticut Statewide Asthma Plan is designed to bring about a coordinated public health approach to effectively change the way communities and healthcare systems deal with asthma. The Plan sets forth recommendations in the form of goals, strategies and action steps in the areas of clinical management, professional education, public education, environment, public awareness, and advocacy. The Surveillance Committee will provide data and guide implementation of the Plan recommendations in each of these areas. The Plan will serve as an action guide for all persons who are interested in working in coalitions to improve asthma care and the quality of life for persons with asthma.

The impact of asthma on a person's quality of life can be severe. Asthma places an economic burden on families, disproportionately affecting black and Hispanic children. As documented in the Plan, numerous barriers and the lack of a comprehensive and standardized approach to asthma has undermined the community's and healthcare system's ability to respond to the needs of those affected with this chronic disease. The Plan articulates the strategies for addressing these barriers to more effective community action and improved care.

Successful implementation of the Plan will assist individuals, organizations and agencies that are involved in the delivery of asthma care in the State of Connecticut in their efforts to improve care and reduce the impact of asthma. Through the strong commitment of public/private statewide collaborations, change will occur. Lives can be saved, quality of life can be improved, costs can be reduced, and systems can become more efficient and caring. It is the intent of the Task Force and its partners to see that this Plan establishes a new standard for asthma care and education in the State of Connecticut and emerges as a national model.

Appendices



VI. APPENDICES

APPENDIX A: WORK GROUP MEMBERSHIP

Clinical Management

Environment

Ron Blumenfeld	ConnectiCare, Inc.	Jeanie Brewer	Prof. Home Care Svs.
Cheryl Carotenuti	State Dept of Education	Patty Delorenze	Aetna
Cindy Dunbar	Community Health Network	Carmine DiBattista	CT DEP
Elizabeth Smith	Community Health Network	Dena Eckstrom	North East Professional Home Care
Mary Lou Fleissner (co-chair)	CT DPH	Dennis P. Durante	Longwharf Pediatrics
Terence Fitzgerald (co-chair)	Oxford Health Plans	Jennifer Kertanis (co-chair)	CT DPH
Sheila Frawley	Aetna	Lisa Goldfeder	SCHC
Joseph Greene	Lawrence & Memorial Hospital	Michael Lauzier	American Lung Assoc. of CT
Jennifer James	CT Pharmacists Association	Richard Matheny	Farmington Valley Health District
Veronica Mansfield	Middlesex Hospital	Kathy McDermott	New London Dept of Health and Social Services
Peggy L. Marsh	WW Backus Hospital	Mark Mitchell	Hartford Environmental Justice Network
Mikki Meadows	Yale-New Haven Hospital	Ellen Pierce	CT DEP Air Management
Dottie Needham	CT NAP NAP	Marion Novi	St. Mary's Hospital
Douglas Oberly	Hartford Hospital	Elaine O'Keefe	Stratford Health Dept.
Cathy Sheehan	Bristol-Burlington Health Dept.	Christopher Prokop	Yale-New Haven Hospital
Angela Simpson	Meriden Health Dept.	Carol Rizzolo	Personal Care Pediatrics
Lynn Tata	Health Complex	Baker Salisbury	East Hartford Health Dept.
Dara Thomas	Southwest CHC	Paula Schenck (co-chair)	UConn Health Center
Steve Updegrove	Hill Health Center	Paul Schur	UConn Health Center
Mary B. Withey	Windham High Wellness Center	Kaya Townsend	Hispanic Health Council
		Carolyn Wysocki	Consumer
		Alison Yazmer	Middlesex Hospital

WORK GROUP MEMBERSHIP

Professional Education

Public Education

Lynn Abrahamson	AHEC	Conrado E. Barzaga	Park City Primary Care Center
Sharon Baer (co-chair)	Naugatuck Valley Cmty. College	Estelle Bogdonoff	New London Dept. of Health and Social Services
Carol Condon	Anthem BCBS	Rick Cruz	St. Vincent's Medical Center
Susan Congdon	East Hartford Health Dept	David Davison	American Savings Foundation
Meredith Day	Anthem BCBS	April Davis	Anthem BCBS
David Davison	American Savings Foundation	Meredith Day	Anthem BCBS
Fran Kochman	GlaxoSmithKline	Ann Marie DeMarchant	Day Kimball Hospital
Sandy Hart	American Lung Assoc. of CT	Lucker Denord	East Hartford Health Dept.
Peter Kennedy	CT Soc. for Respiratory Care	Catherine Druckenmiller	VNA of Central CT
Susan McGuire	CT Primary Care Assoc.	Kathy Federico	Norwalk Hospital
Dottie Needham	Yale-New Haven Hospital	Margherita Giuliano	CT Pharmacists Association
Maria Sanchez	American Savings Foundation	Paul Graml	GlaxoSmithKline
Joan Simpson (co-chair)	CT DPH	Deborah Howe	Physicians Research Center
Peter Tyczkowski	CT Pharmacists Association	Paul Hutcheon	Central CT Health District
David Wilcox	ConnectiCare, Inc.	Mary Jane Johnson	Aetna
		Rita Kornblum (co-chair)	Hartford Health Dept.
		Juan Nadal	Bayer Pharmaceuticals
		Elizabeth Nieves	Hispanic Health Council
		Dori Peruccio	Connecticare, Inc.
		Joan Simpson (co-chair)	CT DPH
		Ellen Smith	VNA Healthcare
		Lynn Tata	Health Complex
		Angie Testa	American Lung Association of CT

APPENDIX B: DETAILED STRATEGY MATRICES

CLINICAL MANAGEMENT

Recommendation 1. Increase provider adherence to NAEPP asthma guidelines.

Strategies	Action Steps/Tactics	Benchmarks
1.1 – Provide up-to-date asthma information on diagnoses, medications, environmental risk factors, best practices and patient management plans to providers and asthma management partners.	<ul style="list-style-type: none"> Develop and disseminate provider Asthma Tool Box Create and/or use existing, simplified forms, e.g., flow sheets, guidelines, screening tools (including assessment of patient life situation, personal skills, culture) and level of control assessment forms 	<ul style="list-style-type: none"> Tool Box draft components completed
1.2 – Promote and encourage the early and appropriate diagnosis and treatment of asthma.	<ul style="list-style-type: none"> Education by physician leader or expert Feedback to providers Encourage use of nationally recognized NAEPP guidelines 	<ul style="list-style-type: none"> Decreased number of asthma patients who have moderate to severe asthma who are relying on the use of beta-2 drugs without controller medications HEDIS Data
1.3 – Utilize patient information that is in a user-friendly format, in the appropriate language, and culturally relevant.	<ul style="list-style-type: none"> Re-evaluate forms and asthma information (make current forms more user friendly, sensitive to culture, language, literacy level, and locally specific) Create a library/clearinghouse for all developed information 	<ul style="list-style-type: none"> Standard assessment tool used to evaluate education materials
1.4 – Promote follow-up visits following acute care episodes.	<ul style="list-style-type: none"> Educate patients and families regarding the importance of routine follow-up visits with primary care physician after a hospital or Emergency Department visit for asthma Encourage Emergency Department and Urgicenter providers to notify the patient of the importance of follow-up (e.g., a two-part form that could be given to the patient with a copy forwarded to the provider if not already done) 	<ul style="list-style-type: none"> Appropriate acute care follow-up visits are provided for asthma patients
1.5 – Promote appropriate referrals to specialty care providers.	<ul style="list-style-type: none"> Track referrals through HUSKY, MCOs, healthcare organizations Partner with hospitals and MCOs 	<ul style="list-style-type: none"> Referrals are tracked across MCOs
1.6 – Support health practitioners in efforts to educate patients in clinical settings.	<ul style="list-style-type: none"> Support the National Asthma Educator Certification Program 	<ul style="list-style-type: none"> AE-C Program is recognized by members, providers and payors and is monitored

CLINICAL MANAGEMENT

Recommendation 2. Provide primary and specialty care in a coordinated and appropriate manner to persons with asthma.

Strategies	Action Steps/Tactics	Benchmarks
2.1 – Promote the continuity of care, including appropriate and coordinated care management for persons with asthma.	<ul style="list-style-type: none"> Encourage providers and partners to develop individualized Asthma Action Plans (AAP), especially for patients with unstable asthma Collaborate with the professional education work group in curriculum development 	<ul style="list-style-type: none"> Persons with asthma under care receive individualized written AAPs
2.2 – Work with MCOs to develop common guidelines and standards for asthma care.	<ul style="list-style-type: none"> Develop a grading process to assess health plan practices Build relationships with health plans Base asthma model on the diabetes model of standardized practices across plans Engage third-party vehicle to assist in discussions due to anti-trust restrictions on coordination between plans, if necessary 	
2.3 – Encourage communication among caregivers including primary care physicians, specialists, parents, childcare, and schools in the development and use of a coordinated care plan.	<ul style="list-style-type: none"> Pilot a program whereby self-management goals are jointly identified based on a client satisfaction survey Connect primary care providers with specialty care providers 	<ul style="list-style-type: none"> Primary care providers and specialty care providers are working together to establish goals for self-management and collaboratively developing a client satisfaction survey for monitoring the efficacy of the goals
2.4 - Develop a systems approach to identify and address barriers to the delivery of appropriate asthma management.	<ul style="list-style-type: none"> Pilot electronic data system for AAP information exchange Use focused intervention methods through Community Health Centers and School-based Health Clinics targeting children and adults 	<ul style="list-style-type: none"> Persons with asthma receive appropriate asthma care according to NAEPP guidelines
2.5 – Include schools, childcare facilities, and health professionals in the proactive management of asthma patients via the Asthma Action Plan.	<p><i>As part of a pilot project involving AAP:</i></p> <ul style="list-style-type: none"> Survey patients who are using AAPs to measure level of understanding Conduct chart audits for AAP use Conduct surveys during ED and/or MD visits 	<ul style="list-style-type: none"> Care providers promote the use of and are involved in the Asthma Action Plan for asthma patients, especially those with unstable asthma

Partners and Resources

- ACE (Asthma Control and Education) Program
- ALA
- Area Health Educators
- Case Management Society
- CCMC, Yale and Bridgeport Hospitals
- CT Thoracic Society
- CT DPH
- Emergency Departments/Hospitals
- Local Health Departments
- Managed Care Organizations
- Medical Societies (AMA, AAP, AFP)
- National Jewish Medical and Research Center
- Norwalk Community Health Center for Adults
- Parent groups
- Pharmaceutical companies
- Physicians, nurses, and parents
- School-based Health Clinics & Community Health Centers
- Schools and school nurses
- Specialty (Asthma) Societies

PATIENT EDUCATION

Recommendation 1: Increase awareness of the signs, symptoms and seriousness of asthma and that asthma can be managed.

Strategies	Action Steps/Tactics	Benchmarks
<p>1.1 – Use consistent information and standardized tools for patient education building on existing programs and materials.</p>	<p><i>Key message is developed for target group, e.g., providers, that includes:</i></p> <ul style="list-style-type: none"> ▪ Patient education is crucial ▪ Importance of effective practices ▪ Importance of engaging the community <ul style="list-style-type: none"> • Educate persons with asthma and their caretakers about irritants, allergens and environmental risks • Enlist the support of local coalitions and agencies to provide education within communities <p><i>Existing materials and programs include:</i></p> <ul style="list-style-type: none"> • ALA education materials • CT DPH school management tools • Easy Breathing • Open Airways • Asthma self-assessment forms 	<ul style="list-style-type: none"> • An increase in the number of persons with asthma who receive patient education, including information about community and self-help resources, as an essential part of the management of their condition • Hospital-based or clinic-based programs providing consistent information to patients

Recommendation 2: Connect the corps of asthma educators developed by professional education efforts to settings without asthma education programs.

Strategies	Action Steps/Tactics	Benchmarks
<p>2.1 – Expand the use of existing resources and information for patients (social marketing techniques).</p>	<ul style="list-style-type: none"> • Partner with ALA and new corps of asthma educators • Disseminate resource list and access to website to input new and updated information 	

Partners / Resources

- ALA
- Community Health Centers
- CT DPH
- CT Pharmacists Association
- Hartford Asthma Call to Action
- Hospitals
- State Department of Education
- Easy Breathing Program
- New Haven Asthma Coalition
- Respiratory Therapists
- School-based Health Clinics

PROFESSIONAL EDUCATION

Recommendation 1: Incorporate an asthma curriculum based on NAEPP guidelines in institutions providing professional healthcare education.

Strategies	Action Steps/Tactics	Benchmarks
1.1 – Develop model curriculum elements to use across institutions (tailored to specific programs and all levels of care providers) to ensure a consistent, comprehensive message.	<ul style="list-style-type: none"> Engage professional societies in offering asthma programs Engage alternative medicine practitioners and medical professionals Expand /alter effective programs that are evidenced-based and currently used Create a provider Tool Box that includes current information on asthma, reimbursement information (directed to physicians and billing personnel), and pharmacy information that is in multiple languages and easy to adapt to healthcare venues (CHC, Hospital, Private Practice) Encourage institutions to self-assess present state of asthma curriculum in relation to model curriculum Encourage institutions to adjust programs to ensure effective asthma curriculum consistent with model 	<ul style="list-style-type: none"> Tool Box draft components completed Self-assessment model / tool is developed in collaboration with professional institutions Asthma education team provides statewide model curriculum guidance on application

Recommendation 2: Increase the number of Certified Asthma Educators.

Strategies	Action Steps/Tactics	Benchmarks
2.1 – Expand the availability of and enrollment in programs to prepare candidates for the Asthma Educator Certification Examination.	<ul style="list-style-type: none"> Explore model preparatory programs in other states and adapt to local needs Disseminate the outline for the examination obtained from NAECB Promote National Asthma Educator Certification Exam Explore incentives to promote certification in in-patient settings Work with agencies to provide incentives for staff to obtain Asthma Educator Certification Partner with MCOs and the State to recognize and reimburse for asthma certification Encourage hospitals to reimburse for time spent providing education for Certified Asthma Educators 	<ul style="list-style-type: none"> Programs increased by 50% in next 5 years Annual update to MDs on changes and current trends in billing for asthma management Number of Connecticut individuals taking exam
2.2 – Advocate for reimbursement for services of Certified Asthma Educators in outpatient settings.	<ul style="list-style-type: none"> Work with State and MCOs to revise reimbursement policies 	
2.3 - Conduct cost-effectiveness studies to assess the effectiveness of the Asthma Educator Certification strategy and specific practices for use in asthma management.	<ul style="list-style-type: none"> Partner with MCOs to study cost effectiveness Partner with asthma surveillance team to track use and effectiveness of asthma educator 	

PROFESSIONAL EDUCATION

Recommendation 3. Increase the number and quality of continuing education opportunities for all persons providing asthma care.

Strategies	Action Steps/Tactics	Benchmarks
<p>3.1 – Develop model continuing education curricula and presentations tailored to specific audiences to provide consistent training.</p>	<ul style="list-style-type: none"> • Conduct continuing assessment of need for continuing education in asthma treatment for medical professionals and paraprofessionals • Roll out of program through various methods: e.g., academic detailers and paid lecturers (MDs, RNs) • Identify target audiences including: <ul style="list-style-type: none"> ▪ Community Health Centers ▪ Residency Training Programs for Physicians ▪ Private Practice Groups ▪ Emergency Departments and Physicians ▪ School and Visiting Nurses 	<ul style="list-style-type: none"> • Increased asthma-related offerings • Recommendations forwarded to institutions • Model program is developed and used statewide • Participants will leave with tangible materials
<p>3.2 – Collaborate with professional associations and major healthcare institutions to ensure that a multidisciplinary asthma curriculum is adopted and delivered through expanded and improved continuing education of asthma care providers.</p>	<ul style="list-style-type: none"> • Develop and disseminate asthma professional education materials that deliver a consistent message in asthma management to asthma care providers • Initiate or expand continuing medical education programs on asthma management • Offer asthma training programs at well-attended professional conferences and meetings that offer medical CME credits • Create a variety of methods of distribution including Webcast, CD-ROM, office visits by academic detailers, and videotapes. • Track and provide a clearinghouse for offerings of continuing education that include asthma • Strengthen capability of peer networks to facilitate peer education and information sharing about the importance of providing asthma education and implementation techniques to their patients • Identify and incorporate training in current best practices used in asthma care • Provide two-tiered educational opportunities to both medical and non-medical personnel with developed curriculum • Update providers on changes in billing practices for asthma care • Work with organizations to provide incentives and/or licensing requirements for persons providing asthma care • Document monitoring and assessment of patient self-monitoring 	<ul style="list-style-type: none"> • Participants will leave with tangible materials • Asthma-related education offerings are increased
<p>3.3 – Develop public/private partnerships to fund expanded continuing education.</p>	<ul style="list-style-type: none"> • Identify funding sources including government, public and private sources 	<ul style="list-style-type: none"> • Resources for ongoing education are secured

PROFESSIONAL EDUCATION

Recommendation 4. Increase the number of trained ancillary and non-medical healthcare personnel providing appropriate patient education.

Strategies	Action Steps/Tactics	Benchmarks
4.1 – Increase the capacity to educate ancillary and non-medical personnel through new or expanded training programs.	<ul style="list-style-type: none"> Conduct a thorough needs assessment regarding training ancillary and non-medical personnel through provider surveys Work with continuing education venues used to provide education in CT 	<ul style="list-style-type: none"> The number of trained ancillary and non-medical professionals is increased
4.2 – Develop a curriculum for training ancillary and non-medical personnel.	<ul style="list-style-type: none"> Adapt existing health educator models to use for ancillary and non-medical personnel Advocate for incentives and/or licensing requirements for ancillary and non-medical personnel involved in supporting asthma care Work with agencies using CA-E or MCO specific education programs to report and perform cost/ benefit analysis and ROI 	<ul style="list-style-type: none"> Work group convened to outline critical elements Recommendations forwarded to institutions

Partners/Resources

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| <ul style="list-style-type: none"> Area Health Education Centers (AHEC) Certified Asthma Educators Community Health Centers Community Health programs CT Allergist Society CT Charts a Course CT DPH CT Health Foundation CT Nurses Association CT Public Health Nurses Association CT Pulmonary Rehabilitation and Diabetes trainers CT Thoracic Society Easy Breathing Program | <ul style="list-style-type: none"> Grant money Insurance Companies Managed Care Organizations Medical Professional Organizations (AMA, AAAAI, ALA) Medical Residency programs National Asthma Day and COPD awareness month Norwalk Hospital & Norwalk Community Health Center for Adults “Open Wide” Dental Program Other state and federal mandates with curriculum changes Park and Recreation Departments Pharmaceutical Companies | <ul style="list-style-type: none"> Physicians and other healthcare providers Public partners (parents of persons with asthma and adults with asthma) Robert Wood Johnson Foundation School-based health clinics State medical agencies State and National Education accreditation agencies States providing training (Univ. of Penn) University of CT Health Center UConn, Yale, Community Colleges, Private Colleges and State Universities research programs |
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ENVIRONMENT

Recommendation 1. Identify and reduce environmental risk factors in the homes of people at risk for asthma.

Strategies	Action Steps/Tactics	Benchmarks
1.1 – Establish a program in local health departments to address “asthma healthy homes.”	<ul style="list-style-type: none"> • CT DPH to establish programs with formal arrangements between Health Directors and local, state, federal housing authorities to address environmental quality in homes • Appropriate persons/labor resources allocated • Work with lead abatement, VNA, hospital home care programs and local housing and health departments to expand the capacity and reach of existing home assessment programs • Identify resources available to families to address environmental risk factors in the home • Expand existing and support establishment of new pilot projects that identify children at increased risk of asthma • Implement environmental and educational interventions that may reduce the onset of asthma • Make available interventions such as house dust mite impermeable mattress and pillow covers, and pest abatement traps to persons identified as having or being at risk for asthma • Develop Healthy Home website that addresses asthma issues 	<ul style="list-style-type: none"> • Statewide conference held with follow-up plan for an Asthma Healthy Homes Program for every Health Department in CT – showcase successful partnerships • Potential to conduct training seminars • Persons with severe and/or persistent asthma and/or recurring ED visits are offered assistance with assessing and reducing exposure to environmental risk factors in their home, school and work environments
1.2 – Encourage providers to address environmental factors in the development of Asthma Action Plans.	<ul style="list-style-type: none"> • Provide (or review) relevant materials from the professional education committee’s “tool box” that address environmental factors 	<ul style="list-style-type: none"> • Persons with severe or moderate persistent asthma and/or recurring ED visits are offered home assessment and have a home environmental management plan
1.3 – 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.	<ul style="list-style-type: none"> • Bring Housing Community into program (Local Health Dept. & Housing Dept/ Auth) – working together with landlords • Hold Conference to showcase successful partnerships 	<ul style="list-style-type: none"> • Dissemination to local health departments, Housing Authorities, and relevant organizations of the Asthma Regional Council of New England’s guidance reference and resources • Select communities with the most at-risk populations to initiate pilot program

Recommendation 2. Improve indoor air quality and reduce exposure to environmental triggers of asthma in the school setting.

Strategies	Action Steps/Tactics	Benchmarks
2.1 – Address indoor environment in schools through the Connecticut School Indoor Environment Resource Team and Tools for Schools, including support of model designs such as EPA’s “Design Tools for Schools.”	<ul style="list-style-type: none"> • Increase capacity of the CT Schools Resource Team • Reach superintendents and Boards of Education to develop buy-in on prevention/ intervention plans • Coordinate with EPA urban initiative programs • Require use of model new construction guidelines as condition for use of SDE bond funding • Promote legislation that requires such specifications 	<ul style="list-style-type: none"> • 20% schools/ school districts have begun implementation of Tools for Schools or other IAQ preventative program • Dissemination of model based on EPA guidance to school districts • Development of specification to reflect principles developed by EPA
2.2 – Reduce the impact of construction on school occupants.	<ul style="list-style-type: none"> • Promote use of Sheet Metal and Air Conditioning Contractor Association Inc. (SMACNA)’s IAQ Guidelines for Occupied Buildings under Construction and 1995 guidelines for indoor air quality during construction 	<ul style="list-style-type: none"> • Resource Team distributes reference to SMACNA guidelines to schools with Tools for Schools trainings • Board of Education references SMACNA guidelines on their website

ENVIRONMENT

Strategies	Action Steps/Tactics	Benchmarks
2.3 – Reduce the idling of diesel buses and trucks in the vicinity of schools	<ul style="list-style-type: none"> • Increase understanding among parents, school personnel, police departments and bus companies/drivers about the need for stricter adherence to bus idling law and COSTA/DEP voluntary agreement 	<ul style="list-style-type: none"> • DEP monitoring less particulate

Recommendation 3. Reduce exposure to second-hand smoke.

Strategies	Action Steps/Tactics	Benchmarks
3.1 – Use the CDC model to implement the Statewide Tobacco Control Plan to address smoking cessation and smoking prevention.	<ul style="list-style-type: none"> • Support municipalities' right to regulate smoking in public places • Increase the number of schools and agencies providing smoking cessation programs and their capacity to offer programs • Promote comprehensive smoking bans on school grounds and at school events • Endorse raising cigarette prices as a deterrent to youth smoking • Ban smoking in restaurants statewide • Expand insurance coverage for smoking cessation 	<ul style="list-style-type: none"> • Schools have comprehensive smoking bans on grounds • Schools offer smoking cessation programs to students, families and staff • MCOs cover smoking cessation programs for parents/guardians of asthmatic children

Recommendation 4. Reduce exposure to outdoor air pollutants (including mobile source pollution) by supporting state and regional efforts.

Strategies	Action Steps/Tactics	Benchmarks
4.1 – Support state pollution prevention programs.	<ul style="list-style-type: none"> • Support DEP's Enforcement of State Implementation Plan • Support programs that encourage use of low sulfur/alternative fuels and older power plant adherence success • Use media alerts based on pollutant concentrations to reduce exposure 	<ul style="list-style-type: none"> • CT improves adherence success with National Ambient Air Quality Standards
4.2 – Support the National Clean Air Act Program to reduce air pollution.	<ul style="list-style-type: none"> • Increase environmental improvements within areas of lower socio-economic status • Analyze air pollution levels in areas with high asthma prevalence • Work with the Department of Environmental Protection on attainment of CAA standards especially with efforts to reduce pollution transported from other states; and decrease mobile source pollution affecting ozone, NOX and fine particulates 	<ul style="list-style-type: none"> • CT improves adherence success with National Ambient Air Quality Standards
4.3 – Promote pollution prevention activities, including recycling and materials replacement efforts, as well as promote air monitoring.	<ul style="list-style-type: none"> • Identify and encourage substitution of process/materials to reduce hazardous and criteria pollutants • Conduct trainings for persons with asthma and others on environmental hazards 	
4.4 – Promote state and regional efforts that promote low emission transit initiatives.	<ul style="list-style-type: none"> • Work with DEP to assess pollution reduction technology in diesel engines • Promote lower sulfur fuels • Support increased state inspection of trucks using CT highways • Encourage road and transportation initiatives that will reduce ambient pollution 	<ul style="list-style-type: none"> • CT improves adherence success with National Ambient Air Quality Standards

ENVIRONMENT

Strategies	Action Steps/Tactics	Benchmarks
4.5 – Improve public awareness action on Air Quality Index.	<ul style="list-style-type: none"> Develop summary descriptions for both the provider Tool Box and for community education 	
Recommendation 5. Reduce workplace exposures to known occupational asthma-causing agents.		
Strategies	Action Steps/Tactics	Benchmarks
5.1 – Encourage healthcare providers to ask adults with asthma about their workplaces, and report work-related asthma cases to the Department of Public Health and the Department of Labor.	<ul style="list-style-type: none"> Enhance occupational surveillance to improve efforts to identify workplace exposures and occupational asthma 	<ul style="list-style-type: none"> More individual practitioners reporting occupational illness to DOL/CT DPH Increased physician reports to the Departments of Labor and Public Health
5.2 - Reduce worker exposure to workplace causes of asthma especially latex (healthcare, foodservice, child-care), isocyanates, and metal-working fluids.	<ul style="list-style-type: none"> Provide educational materials to high-risk workers Promote radio and TV coverage of issues of work and asthma Promote accommodations for persons with asthma Support CT DPH EEOH programs Provide education for workers re: appropriate accommodation to reduce asthma symptoms including reduction of allergens /triggers Provide education for management and employers on appropriate accommodations to reduce asthma symptoms and workplace allergens /triggers Reduce exposure to fragrances and other consumer products in indoor environments for sensitized workers with asthma 	<ul style="list-style-type: none"> Increased attention to occupational illnesses and asthma in employer newsletters, programs, TV and print media 20% of metal-working shops implement programs
5.3 – Reduce the number of workers who develop and/or exacerbate asthma from poor indoor air quality in public buildings as well as in private office settings and other non-industrial buildings.	<ul style="list-style-type: none"> Develop template for workplace indoor air quality management programs, including management of moisture incursion, microbial growth, and tobacco use Provide indoor air management plans to public office buildings and make them available to private companies 	<ul style="list-style-type: none"> IAQ complaints to CT DPH and DOL reduced by 20%

Partners/Resources

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| <ul style="list-style-type: none"> ALA Appropriate medical organizations and leaders Building owners, operators and occupants Building science engineers, Architects Child care facilities and workers CHCs serving migrant workers Community Action Program Agencies Community Health Centers COSH, Unions, Employers/ Trade Assoc., CBIA CT Association of Directors of Health CT DECD | <ul style="list-style-type: none"> CT DEP CT DPH CT Local health departments CT OSHA, UCHC Center for Indoor Environments and Health CT SDE Economic Development Agencies Food service facilities and workers Healthcare facilities and workers Home Builders Association Home Health Agencies — hospitals, VNAs Housing Authorities Landlords | <ul style="list-style-type: none"> Local Boards of Education Migrant Clinicians Network Owners and workers from: Automotive repair shops and other industries that use isocyanates Owners and workers from metal-working shops Parents, PTOs, EPA, Family Resource Centers School-based Health Clinics Teachers Utility companies |
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PUBLIC AWARENESS

Recommendation 1. Increase the awareness of the general public of asthma and its risk factors and symptoms.

Strategies	Action Steps/Tactics	Benchmarks
1.1 – Develop and establish partnerships with and among key institutions, community groups and providers.	<ul style="list-style-type: none"> Conduct meetings with Boards of Education, the ALA, hospitals, clinics, schools, universities, local health departments and other appropriate groups to determine available resources and opportunities for collaboration in implementing an educational media campaign Develop a plan incorporating the established partners into the media plans 	<ul style="list-style-type: none"> Increased participation in current programs
1.2 – Expand asthma awareness efforts through partnerships with and among key institutions, community groups and providers.	<ul style="list-style-type: none"> Develop key messages to improve the image of asthma that include: help is available, asthma is a serious disease, importance of having and adhering to an asthma action plan, a normal life is achievable and possible, asthma attacks are preventable Utilize electronic/printed media Explore public relations, free coverage and local access Engage media contacts Identify high profile state and local leaders and/or celebrities as role models Utilize the web and e-mail for dissemination of information Provide information about the existence of asthma programs, e.g. Easy Breathing, Open Airways and Tools for Schools, and information on irritants, allergens and environmental risks 	<ul style="list-style-type: none"> An increase in the number of persons who receive information about asthma including community and self-help resources

Recommendation 2. Increase the awareness of the seriousness of asthma among key institutions, businesses and community organizations.

Strategies	Action Steps/Tactics	Benchmarks
2.1 - Develop and implement a targeted social marketing campaign that is culturally sensitive and that uses a consistent set of messages.	<ul style="list-style-type: none"> Conduct a multimedia effort that may include videos, pamphlets, public access TV Use materials and messages tailored to the target populations Target child care facilities, schools, family support centers, workplaces and other key institutions and community organizations Link with NAEPP for technical assistance and possible funding 	
2.2 - Enhance statewide information sources to provide a central clearing-house of asthma services and educational resources.	<ul style="list-style-type: none"> Investigate existing information centers, e.g. ALA Asthma Information Center and Infoline to determine suitability for needs Track number of asthma calls to information centers 	

Partners and Resources

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| <ul style="list-style-type: none"> ALA Community Coalitions CT DPH | <ul style="list-style-type: none"> Current respiratory therapists and registered nurses providing training to school nurses and medical doctors Environmental Protection Agency | <ul style="list-style-type: none"> Faith-based organizations Local groups Libraries |
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APPENDIX C: GLOSSARY OF TERMS *(Including acronyms used in this document)*

ACUTE - An illness that has a discrete and rapid onset of symptoms.

ALLERGIST - A physician who specializes in the diagnosis and treatment of allergies and asthma.

ALLERGEN - The ordinarily harmless substances that cause abnormal allergic reactions in people with allergies such as a runny nose, watery and itchy eyes, rash, or wheezing. Common allergens include pollen, dust mites, animal dander, molds and for some people, food. Allergens are present in saliva, urine, and dander of warm-blooded animals such as dogs, cats, birds, and rodents. They are also present in plants.

ALLERGEN IMMUNOTHERAPY - "Allergy shots," treatment of an allergy by giving an injection of a small amount of the allergic substance, usually a pollen or mold spore.

AMERICAN ACADEMY OF PEDIATRICS (AAP)

AMERICAN LUNG ASSOCIATION (ALA)

AMERICAN MEDICAL ASSOCIATION (AMA)

ANTI-INFLAMMATORY DRUGS - Medications that prevent or reduce swelling in the airways.

ANTIMICROBIAL - Agents that kill microbial growth.

AREA HEALTH EDUCATOR CENTER (AHEC)

ASTHMA - A chronic lung disease characterized by inflammation and constriction of the lower airways causing shortness of breath, wheezing, and chest tightness making breathing difficult.

ASTHMA ACTION PLAN (AAP) - A written document developed by the physician in conjunction with the asthma patient and his/her family that outlines exactly what the patient needs to do depending on how they are feeling.

ASTHMA CONTROL - Specific actions such as medication and relaxation to prevent asthma flares or lessen the severity of the episodes.

ASTHMA DIARY - A daily notebook in which peak-flow readings, asthma symptoms, and environmental or medication changes are recorded. Over time, your asthma diary can help you predict when your asthma gets worse or better.

ASTHMA MANAGEMENT - A comprehensive approach to achieving and maintaining control of asthma. It includes patient education to develop a partnership in management, assessing and monitoring severity, avoiding or controlling asthma triggers, establishing plans for medication and management of exacerbations, and regular follow-up care.

ASTHMA SPECIALIST - Healthcare professional who has received specific training in the diagnosis and management of asthma.

BETA-2 AGONISTS - The most common type of inhaled, quick relief medication. These drugs include albuterol (Proventil, Ventolin); pirbuterol acetate (Maxair); terbutaline sulfate (Brethaire); bitolterol mesylate (Tornalate); and metaproteronol sulfate (Alupent, Metrapel). Taken during an asthma attack, short-acting beta-2 agonists usually work within 15 minutes.

CAUSAL FACTORS - Risk factors that sensitize the airways and cause the onset of asthma symptoms. The most important of these are allergens and chemical sensitizers.

GLOSSARY OF TERMS

CENTERS FOR DISEASE CONTROL (CDC) - The Centers for Disease Control and Prevention is recognized as the lead federal agency for protecting the health and safety of people at home and abroad, providing credible information to enhance health decisions, and promoting health through strong partnerships.

CHRONIC CONDITION - A long lasting or constant condition for several years, possibly a lifetime.

COMMUNITY HEALTH CENTERS (CHC)

COMPLIANCE - Patients adhere to physician-prescribed regimens, either pharmacologic or behavioral.

CONNECTICUT BUSINESS AND INDUSTRY ASSOCIATION (CBIA)

CONNECTICUT DEPARTMENT OF ECONOMIC AND COMMUNITY DEVELOPMENT (CT DECD)

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION (CT DEP)

CONNECTICUT DEPARTMENT OF LABOR (CT DOL)

CONNECTICUT DEPARTMENT OF PUBLIC HEALTH (CT DPH)

CONNECTICUT STATE DEPARTMENT OF EDUCATION (SDE)

CONTRIBUTING FACTORS - Risk factors that either augment the likelihood of asthma developing upon exposure to a risk factor or may even increase susceptibility to asthma. These factors include smoking, viral infections, low birth weight, and environmental pollutants.

CONTROLLER MEDICATIONS - Medications taken daily on a long-term basis that are useful in getting persistent asthma under control and in maintaining control. They include anti-inflammatory agents alone or in combination with long-acting bronchodilators. Anti-inflammatory agents, particularly inhaled corticosteroids, are at present the most effective controller medications. Controller medications are also sometimes called prophylactic, preventive, regular preventive, or maintenance medications.

DUST MITE - A tiny microscopic bug found in dust. Exposure to dust mites may trigger an asthma attack.

EARLY WARNING SIGNS - Symptoms that occur before an asthma attack.

EFFECTIVENESS MEASURES - Depict the degree to which performance objectives are being achieved or otherwise reflect the quality of local government performance. Response times and other measures of service quality are only indirectly related to effectiveness, but are typically included among effectiveness measures.

EFFICIENCY MEASURES - Reflect the relationship between work performed and the resources required to perform it. Typically, efficiency measures are presented as unit costs, but they can take other forms as well. Unit costs are calculated by dividing total costs of a service or function by the number of units provided.

ENVIRONMENTAL AGENTS - Conditions other than indoor air contaminants that cause stress, comfort, and/or health problems (e.g., humidity extremes, drafts, lack of air circulation, noise, and over-crowding).

ENVIRONMENTAL CONTROL - Removal of risk factors from the environment.

GLOSSARY OF TERMS

ENVIRONMENTAL TOBACCO SMOKE (ETS) - Mixture of smoke from the burning end of a cigarette, pipe, or cigar and smoke exhaled by the smoker (also secondhand smoke or passive smoking).

EXACERBATION - Any worsening. Onset can be acute and sudden, or gradual over several days. A correlation between symptoms and peak flow is not necessarily found.

EXERCISE-INDUCED ASTHMA - Asthma that occurs only during or after exercise.

GOALS - A set of specific desired outcomes that are achievable, and stated in such a way that there is agreement about whether or not they have been achieved.

Short-term goals - Goals for the coming year or so; goals for your current projects and programs. Sometimes the short-term goals become steps toward the long-term goals.

Long-term goals - Usually, goals you don't expect to achieve in less than a year, or perhaps even five years.

IMMUNE SYSTEM - The complex group of organs and cells that defend the body against infection or disease.

INCIDENCE - The number of instances of illness commencing, or of persons falling ill, during a given period in a specified population.

INDOOR AIR POLLUTANT - Particles and dust, fibers, mists, bioaerosols, and gases or vapors.

INDOOR AIR QUALITY (IAQ)

INFLAMMATION - Inflammation is the redness, swelling, heat and pain in a tissue due to chemical or physical injury, or to infection. It is a characteristic of allergic reactions in the nose, lungs, and skin.

INHALANT - Medication delivered directly to the lungs by inhalation or by breathing in.

INPUTS - Resources a program uses to achieve program objectives. Training, for example, is an input. Other examples are staff, volunteers, facilities, equipment, curricula, and money. A program uses inputs to support activities.

IRRITANT - Risk factor or trigger that may cause increased symptoms and/or airflow limitation.

MAINTENANCE MEDICATION - A drug given on a regular basis to help prevent symptoms.

METERED DOSE INHALER (MDI) - A device for delivering measured doses of medication in the form of a fine spray.

MODEL BUILDING CODES - The building codes published by the 4 Model Code Organizations and commonly adopted by state or other jurisdictions to control local construction activity.

NATIONAL ASTHMA EDUCATION AND PREVENTION PROGRAM (NAEPP)

OBJECTIVES - Statements of purpose that are more detailed and specific than goals. Ideally, they will include a clear indication of how it will be decided that the detailed purpose has been achieved.

OUTPUTS - Products of a program's activities, such as the number of meals provided, the number of people completing a training program, the number of counseling sessions provided, etc. Another term for outputs is "units of service." A program's outputs should produce desired outcomes for the program's participants. Outputs are quantitative.

GLOSSARY OF TERMS

OUTCOMES - The end results of interventions and processes usually defined in terms of the achievement of or failure to achieve desired goals.

OUTCOME INDICATORS - Specific items of information that track a program's success on outcomes. They describe observable, measurable characteristics or changes that indicate achievement of an outcome. These can be expressed either in absolute numbers or in terms of rates and should be available at regular intervals. A performance measure shows progress (or lack of it) in achieving the outcome.

PATIENT EDUCATION – Education provided by the healthcare professional to the patient and the patient's family with appropriate information and training so that the patient can stay well and adjust treatment according to a medication plan developed with the healthcare professional. Effective patient education involves a partnership between patient and health-care professional with frequent revision and reinforcement. Training includes teaching specific asthma management skills such as how to take medicine correctly, how to recognize when asthma gets worse, and what actions to take to achieve and maintain control.

PEAK FLOW METER - A device that can provide information about how quickly air can be forced out of the lungs. Measurements of forced expiration are important in the overall assessment of lung function.

PERFORMANCE OBJECTIVES - A projected level of client performance or “customer” perception that constitutes success as defined by the outcome indicator.

PREVALENCE - The number of instances of a given disease or other condition in a given population at a designated time.

PREVENTION - Primary prevention is preventing development of the condition of asthma. Secondary prevention is preventing exacerbations of asthma in those who already have the condition and avoiding deterioration in lung function or death from the condition.

RISK FACTOR - An agent that when present increases the probability of disorder expression.

STRATEGIES - The particular methods you select to achieve your purposes, as in “the best strategy.” Strategies refer to specific programs of action requiring a commitment of energy and resources to achieve goals and objectives. They are the HOW of the action plan. Strategies follow the goals; several strategies make up the action plan to accomplish the goals. Strategies make up the day-to-day action plan for the staff, leaders and committees.

TARGETS - Milestones, with specific dates set for their accomplishment.

TRIGGERS - Stimuli that cause the bronchial tubes in the lungs to react by becoming inflamed. Asthma triggers vary and may include exercise, cold air, allergens, and infections.

Sources: Asthma and Allergy Center Bellevue Nebraska; LSU Medical Center; Village and Village Health 1998, and the US Environmental Protection Agency

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APPENDIX D: SURVEILLANCE DATA SOURCES

Table A-4-1 Data Sources Used by CTDPH Asthma Surveillance Program

Data Sources	Years	Information Available	Adults	Children
Prevalence				
Behavioral Risk Factor Surveillance System (BRFSS)	1998	Ever been told you have asthma	Y	Y
	1999	Urgent care visit in past 12 mos.	Y	Y
	2000	Ever been told you have asthma Do you still have asthma	Y	N
	2001		Y	Y
	2002		Y	N
Medicaid Managed Care	1997- Ongoing	Continuous enrollment Primary or Secondary diagnosis ICD-9-493	N	Y (0-20)
School Health Assessments	2003 Pilot	Physician diagnosis with disease severity classification	N	Y (5-6)
	2004 - Ongoing			(11-12)
		(15-16)		
Connecticut School Health Survey (CSHS)	2003	Ever been told you have asthma Ever had episode of asthma or asthma attack in the last 12 months		(9th and 12th grades)
Utilization Data				
Hospital Admissions	1992-2000	Primary or Secondary diagnosis ICD-9-493, LOS, age, sex, race/ethnicity, town, zip code, payer	N	Y (0-14)
Emergency Department Visits	1995-2000	Primary or Secondary diagnosis ICD-9-493 age, sex, race/ethnicity, town, zip code, payer	N	Y (0-14)
Medicaid Managed Care	1997-1999	Asthma-related care Ambulatory care Hospitalization Emergency Department visits		Y (0-20)
	2000 - Ongoing	Pharmacy data HEDIS measures		Y
Mortality				
Deaths	1989 - Ongoing	Primary and Contributing Cause ICD-9-493	Y	Y
Occupational Asthma				
ODSS	1992- Ongoing	Physician reported	Y	N
Active Surveillance	2003- Ongoing	Targeted physician outreach	Y	N

APPENDIX E: REFERENCES AND SOURCES

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The logo for the Connecticut Department of Public Health is a blue rectangle with a white triangle on the right side. The text "CONNECTICUT DEPARTMENT OF PUBLIC HEALTH" is written in white, with "PUBLIC HEALTH" in a larger font.

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