

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

April 21, 1997

EXECUTIVE ORDER

PROTECTION OF CHILDREN FROM ENVIRONMENTAL
HEALTH RISKS AND SAFETY RISKS

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1. Policy.

1-101. A growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because: children's neurological, immunological, digestive, and other bodily systems are still developing; children eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults; children's size and weight may diminish their protection from standard safety features; and children's behavior patterns may make them more susceptible to accidents because they are less able to protect themselves. Therefore, to the extent permitted by law and appropriate, and consistent with the agency's mission, each Federal agency:

- (a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and
- (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks.

1-102. Each independent regulatory agency is encouraged to participate in the implementation of this order and comply with its provisions.

Sec. 2. Definitions. The following definitions shall apply to this order.

2-201. "Federal agency" means any authority of the United States that is an agency under 44 U.S.C. 3502(1) other than those considered to be independent regulatory agencies under 44 U.S.C. 3502(5). For purposes of this order, "military departments," as defined in 5 U.S.C. 102, are covered under the auspices of the Department of Defense.

2-202. "Covered regulatory action" means any substantive action in a rulemaking, initiated after the date of this order or for which a Notice of Proposed Rulemaking is published 1 year after the date of this order, that is likely to result in a rule that may:

- (a) be "economically significant" under Executive Order 12866 (a rulemaking that has an annual effect on the economy of \$100 million or more or would adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities); and
- (b) concern an environmental health risk or safety risk that an agency has reason to believe may disproportionately affect children.

2-203. "Environmental health risks and safety risks" mean risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to).

Sec. 3. Task Force on Environmental Health Risks and Safety Risks to Children.

3-301. There is hereby established the Task Force on

Environmental Health Risks and Safety Risks to Children
("Task Force").

3-302. The Task Force will report to the President in consultation with the Domestic Policy Council, the National Science and Technology Council, the Council on Environmental Quality, and the Office of Management and Budget (OMB).

3-303. Membership. The Task Force shall be composed of the:

- (a) Secretary of Health and Human Services, who shall serve as a Co-Chair of the Council;
- (b) Administrator of the Environmental Protection Agency, who shall serve as a Co-Chair of the Council;
- (c) Secretary of Education;
- (d) Secretary of Labor;
- (e) Attorney General;
- (f) Secretary of Energy;
- (g) Secretary of Housing and Urban Development;
- (h) Secretary of Agriculture;
- (i) Secretary of Transportation;
- (j) Director of the Office of Management and Budget;
- (k) Chair of the Council on Environmental Quality;
- (l) Chair of the Consumer Product Safety Commission;
- (m) Assistant to the President for Economic Policy;
- (n) Assistant to the President for Domestic Policy;
- (o) Assistant to the President and Director of the Office of Science and Technology Policy;

- (p) Chair of the Council of Economic Advisers; and
- (q) Such other officials of executive departments and agencies as the President may, from time to time, designate.

Members of the Task Force may delegate their responsibilities under this order to subordinates.

3-304. Functions. The Task Force shall recommend to the President Federal strategies for children's environmental health and safety, within the limits of the Administration's budget, to include the following elements:

- (a) statements of principles, general policy, and targeted annual priorities to guide the Federal approach to achieving the goals of this order;
- (b) a coordinated research agenda for the Federal Government, including steps to implement the review of research databases described in section 4 of this order;
- (c) recommendations for appropriate partnerships among Federal, State, local, and tribal governments and the private, academic, and nonprofit sectors;
- (d) proposals to enhance public outreach and communication to assist families in evaluating risks to children and in making informed consumer choices;
- (e) an identification of high-priority initiatives that the Federal Government has undertaken or will undertake in advancing protection of children's environmental health and safety; and
- (f) a statement regarding the desirability of new legislation to fulfill or promote the purposes of this order.

3-305. The Task Force shall prepare a biennial report on research, data, or other information that would enhance our ability to understand, analyze, and respond to environmental health risks and safety risks to children. For purposes of this

report, cabinet agencies and other agencies identified by the Task Force shall identify and specifically describe for the Task Force key data needs related to environmental health risks and safety risks to children that have arisen in the course of the agency's programs and activities. The Task Force shall incorporate agency submissions into its report and ensure that this report is publicly available and widely disseminated. The Office of Science and Technology Policy and the National Science and Technology Council shall ensure that this report is fully considered in establishing research priorities.

3-306. The Task Force shall exist for a period of 4 years from the first meeting. At least 6 months prior to the expiration of that period, the member agencies shall assess the need for continuation of the Task Force or its functions, and make appropriate recommendations to the President.

Sec. 4. Research Coordination and Integration.

4-401. Within 6 months of the date of this order, the Task Force shall develop or direct to be developed a review of existing and planned data resources and a proposed plan for ensuring that researchers and Federal research agencies have access to information on all research conducted or funded by the Federal Government that is related to adverse health risks in children resulting from exposure to environmental health risks or safety risks. The National Science and Technology Council shall review the plan.

4-402. The plan shall promote the sharing of information on academic and private research. It shall include recommendations to encourage that such data, to the extent permitted by law, is available to the public, the scientific and academic communities, and all Federal agencies.

Sec. 5. Agency Environmental Health Risk or Safety Risk Regulations.

5-501. For each covered regulatory action submitted to OMB's Office of Information and Regulatory Affairs (OIRA) for review pursuant to Executive Order 12866, the issuing agency shall provide to OIRA the following information developed as part of the agency's decisionmaking process, unless prohibited by law:

- (a) an evaluation of the environmental health or safety effects of the planned regulation on children; and
- (b) an explanation of why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the agency.

5-502. In emergency situations, or when an agency is obligated by law to act more quickly than normal review procedures allow, the agency shall comply with the provisions of this section to the extent practicable. For those covered regulatory actions that are governed by a court-imposed or statutory deadline, the agency shall, to the extent practicable, schedule any rulemaking proceedings so as to permit sufficient time for completing the analysis required by this section.

5-503. The analysis required by this section may be included as part of any other required analysis, and shall be made part of the administrative record for the covered regulatory action or otherwise made available to the public, to the extent permitted by law.

Sec. 6. Interagency Forum on Child and Family Statistics.

6-601. The Director of the OMB ("Director") shall convene an Interagency Forum on Child and Family Statistics ("Forum"), which will include representatives from the appropriate Federal statistics and research agencies. The Forum shall produce an annual compendium ("Report") of the most important indicators of the well-being of the Nation's children.

6-602. The Forum shall determine the indicators to be included in each Report and identify the sources of data to be used for each indicator. The Forum shall provide an ongoing review of Federal collection and dissemination of data on children and families, and shall make recommendations to improve the coverage and coordination of data collection and to reduce duplication and overlap.

6-603. The Report shall be published by the Forum in collaboration with the National Institute of Child Health and Human Development. The Forum shall present the first annual Report to the President, through the Director, by July 31, 1997.

The Report shall be submitted annually thereafter, using the most recently available data.

Sec. 7. General Provisions.

7-701. This order is intended only for internal management of the executive branch. This order is not intended, and should not be construed to create, any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies, its officers, or its employees. This order shall not be construed to create any right to judicial review involving the compliance or noncompliance with this order by the United States, its agencies, its officers, or any other person.

7-702. Executive Order 12606 of September 2, 1987 is revoked.

WILLIAM J. CLINTON

THE WHITE HOUSE,
April 21, 1997.

Asthma and the Environment:

A Strategy to Protect Children

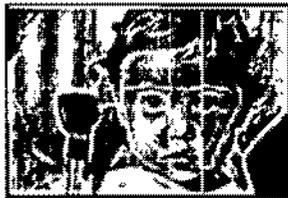


President's Task Force on Environmental Health
Risks and Safety Risks to Children

January 28, 1999
Revised:
May 2000

ABOUT THE PRESIDENT'S TASK FORCE ON ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS TO CHILDREN

In recognition of the growing body of scientific information demonstrating that America's children suffer disproportionately from environmental health risks and safety risks, President Clinton issued Executive Order 13045 on April 21, 1997, directing each Federal Agency to make it a high priority to identify, assess, and address those risks. In issuing this order, the President also created the Task Force on Environmental Health Risks and Safety Risks to Children, co-chaired by Donna Shalala, Secretary of the Department of Health and Human Services, and Carol M. Browner, Administrator of the Environmental Protection Agency. The



Task Force was charged with recommending strategies for protecting children's environmental health and safety. Two subcommittees were established in the Executive Order to carry out this directive: a subcommittee directed to review and foster public access to federal government sponsored research on environmental health and safety risks to children, and a subcommittee directed to identify priority public outreach activities related to protecting children's environmental health and safety.

In April 1998, the Task Force identified four priority areas for immediate attention: childhood asthma, unintentional injuries, developmental disorders, and childhood cancer. The Task Force created and charged the Asthma Priority Area Workgroup, co-chaired by EPA and DHHS, with reviewing current Federal efforts to address the many facets of the issue and, most importantly, to make appropriate recommendations for action by the Federal government. This strategy is the result of that effort.

TABLE OF CONTENTS

ABOUT THE PRESIDENT'S TASK FORCE ON ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS TO CHILDREN	1
MEMBERS OF THE PRESIDENT'S TASK FORCE ON ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS TO CHILDREN	3
ASTHMA PRIORITY AREA WORKGROUP MEMBERS	5
EXECUTIVE SUMMARY	6
INTRODUCTION	8
The Growing Problem of Asthma in Children	9
What We Know About Childhood Asthma	10
Why Has Asthma Reached Epidemic Proportions in Children?	11
Scope of the Strategy	12
VISION FOR THE 21 ST CENTURY	14
GUIDING PRINCIPLES	14
RECOMMENDATIONS	16
RESEARCH	16
PROGRAMS TO IMPROVE PUBLIC HEALTH	17
SURVEILLANCE	19
DISPROPORTIONATE IMPACTS ON THE POOR AND MINORITIES	20
REFERENCES.....	21

MEMBERS OF THE PRESIDENT'S TASK FORCE ON ENVIRONMENTAL HEALTH RISKS AND SAFETY RISKS TO CHILDREN

Honorable Donna E. Shalala
Co-chair
Secretary
Department of Health and Human Services

Honorable Carol M. Browner
Co-chair
Administrator
Environmental Protection Agency

Honorable Alexis Herman
Secretary
Department of Labor

Honorable Janet Reno
Attorney General
Department of Justice

Honorable Andrew Cuomo
Secretary
Department of Housing and Urban
Development

Honorable Bill Richardson
Secretary
Department of Energy

Honorable Richard Riley
Secretary
Department of Education

Honorable Dan Glickman
Secretary
Department of Agriculture

Honorable Rodney Slater
Secretary
Department of Transportation

Honorable Jacob J. Lew, Director
Office of Management and Budget

Honorable George Frampton, Chair
Council on Environmental Quality

Honorable Ann Brown
Chairman
Consumer Product Safety Commission

Honorable Martin N. Bailey
Chair
Council of Economic Advisors

Honorable Neal Lane, Director
Office of Science and Technology Policy

Honorable Gene Sperling
Assistant to the President for Economic Policy

Honorable Bruce Reed
Assistant to the President for Domestic Policy

ASTHMA PRIORITY AREA WORKGROUP MEMBERS

Stephen Redd, MD (Co-chair)
National Center for Environmental Health
Centers for Disease Control and Prevention

Robert Arciad (Co-chair)
Office of Children's Health Protection
Environmental Protection Agency

Mary White, Sc.D
Division of Health Studies
Agency for Toxic Substances and Disease Registry

John Talbott
Office of Building Technologies
Department of Energy

Ron Ashford
Department of Housing and Urban Development

Warren Friedman, Ph.D, CIH
Office of Lead Hazard Control
Department of Housing and Urban Development

Tracey Mitchell
Indoor Environments Division
Environmental Protection Agency

Marshall Plaut, M.D.
National Institute of Allergy and Infectious Diseases
National Institutes of Health

Jerry Phelps
National Institute of Environmental Health Sciences
National Institutes of Health

Virginia Taggan, M.P.H.
National Heart, Lung, and Blood Institute
National Institutes of Health

Hillel Koren, Ph.D.
National Health and Environmental Effects Laboratory
Office of Research and Development
Environmental Protection Agency

Caroline Freeman
Occupational Safety and Health Administration
Department of Labor

George Malindzak, Ph.D
National Institute of Environmental Health Sciences
National Institutes of Health

Lucas Neas, Ph.D
National Health and Environmental Effects Laboratory
Office of Research and Development
Environmental Protection Agency

Edward Chu
Office of Children's Health Protection
Environmental Protection Agency

Marilyn Wind
Consumer Product Safety Commission

Stacey Katz
Office of Science Policy
Department of Health and Human Services

Polly Hoppin, Sc.D
Office of Science Policy
Department of Health and Human Services

EXECUTIVE SUMMARY

An epidemic of asthma is occurring in the United States. While the epidemic affects people of all ages, children are particularly affected. Nearly 1 in 13 school-aged children has asthma, and the percentage of children with asthma (i.e., prevalence rate) is rising more rapidly in preschool-aged children than in any other age group.

There is no national system to collect data from states specifically on asthma, although several states are developing systems to collect such data. Although national data do not provide the resolution necessary to identify particular geographic areas hardest hit by the asthma epidemic, surveys undertaken in a number of large cities in the United States indicate that the prevalence and severity of asthma are greatest in the large, urban inner cities.

An epidemic
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States.

Asthma is one of the leading causes of school absenteeism, accounting for over 10 million missed school days per year. Asthma also accounts for many nights of interrupted sleep, limitation of activity, and disruptions of family and care-giver routines. Asthma symptoms that are not severe enough to require a visit to an emergency room or to a physician can still be severe enough to prevent a child with asthma from living a fully active life.

In 1998, the cost of asthma to the U.S. economy was estimated to be \$11.3 billion, with the majority of the expense attributed to direct medical expenses. These estimates, which are not limited to the costs of childhood asthma, indicate that the direct medical costs of asthma account for approximately 1% of all health care expenditures in the United States.

Asthma is a particularly important disease to consider in the context of environmental hazards to which children are exposed. Children breathe more air, eat more food, and drink more liquid in proportion to their body weight than do adults, and their developing respiratory, immunological, and digestive systems may be more susceptible to environmental exposures than those of adults. In a typical day, children may be exposed to a wide array of environmental agents at home, in day care centers, schools and while playing outdoors. There is substantial evidence that environmental exposures, including viruses and allergens, play a major role in triggering asthma symptoms. Indoor airborne allergens include those from house dust mites, cockroaches, mold and animal dander. In addition, exposure to environmental tobacco smoke (ETS), also known as secondhand smoke, has been shown to be a major determinant of asthma symptoms. Elevated levels of outdoor air pollutants, particularly ozone and exposure to outdoor allergens (e.g. pollens, molds), are associated with increased symptoms and an increased risk of emergency department visits for asthma, as well.

In addition, environmental factors such as airborne allergens and environmental tobacco smoke may play a significant role in the onset of asthma. Other pollutants may also play a role,

although the scientific data are inadequate to offer firm conclusions. Genetic predisposition is the strongest known risk factor for developing asthma, but the rapidly rising number of cases of childhood asthma cannot be solely genetic because the genetic composition of the population changes slowly. Rather, some interaction between genetic predisposition and environmental exposures, and possibly other factors such as diet, increased body weight, or lack of exercise are likely to be responsible for the increase. Further work is essential to clarify how genetic susceptibility and environmental exposures interact to cause asthma.

Reducing exposures of children with asthma to airborne allergens and pollutants will reduce the health burden of asthma and significantly improve their quality of life. It is not yet certain, but it is possible that reducing the exposure of infants and young children at risk of developing asthma may prevent its onset. Environmental control methods and asthma treatments are available now that can help children and their families control asthma and lead healthy, active lives. Yet not all children have access to these measures. Too many children miss school, limit their physical activity, and are seriously ill because of asthma. A child ill with asthma also has an impact on the entire family.



This strategy, prepared by the Task Force, is aimed at developing a further understanding of the role of environmental factors associated with the:

- onset of asthma; and
- triggers of asthma attacks

The efforts of the Task Force resulted in four recommendations for Federal action for addressing childhood asthma, which are presented in this strategy. The strategy also sets forth guiding principles that were used to develop the four recommendations.

GUIDING PRINCIPLES

Federal agency actions can provide leadership and direction in reducing environmental risks to protect children who have asthma or are at risk of developing it. Recommendations for action put forward in this initiative are predicated on the principles that federal action must have:

- A focus on efforts to *eliminate the disproportionate impact of asthma in minority populations and those living in poverty.*
- An emphasis on *partnerships and community based programs.*
- A commitment to setting *measurable and consistent goals* for childhood asthma under the Healthy People 2010 program.
- *An investment in evaluation* to identify those strategies that are most effective in reducing the burden of asthma so that they may be replicated.

RECOMMENDATIONS

RESEARCH

Strengthen and accelerate focused research into the environmental factors that cause or worsen childhood asthma.

- ⇒ Strengthen and accelerate research into the environmental factors that may contribute to the onset of asthma in children.
- ⇒ Expand and accelerate research to develop and evaluate environmental strategies that will improve the quality of life of people with asthma.

This initiative is about protecting children from environmental risks that either cause or worsen asthma...

PUBLIC HEALTH PROGRAMS

Implement public health programs that foster improved use of current scientific knowledge to reduce environmental exposures to prevent and reduce the severity of symptoms for those with asthma.

- ⇒ Promote clinician and patient implementation of national guidelines for reducing environmental risks that worsen asthma.
- ⇒ Expand support for state and local public health action.
- ⇒ Reduce children's exposure to environmental tobacco smoke and other indoor triggers in their homes.
- ⇒ Establish school based asthma programs that help reduce or eliminate allergens and irritants and that promote student's self management of asthma and full participation in school activities.
- ⇒ Continue to reduce outdoor air pollution.

SURVEILLANCE

Establish a coordinated, integrated, and systematic nationwide asthma surveillance system for collecting, analyzing, and disseminating health outcome and risk factor data at the state, regional and local levels.

DISPROPORTIONATE IMPACT ON THE POOR AND MINORITIES

Identify the reasons for and eliminate the disproportionate burden of asthma among different racial and ethnic groups and those living in poverty.

- ⇒ Improve asthma management for children within the medicaid program.



INTRODUCTION

The Growing Problem of Asthma in Children

Asthma is a chronic inflammatory lung disease characterized by recurrent episodes of breathlessness, wheezing, coughing, and chest tightness; these episodes are also known as exacerbations or attacks. The severity of exacerbations can range from mild to life threatening. Both the frequency and severity of asthma symptoms can be reduced by the use of medications and by reducing exposure to the environmental triggers of asthma attacks.

For the past 15 years, an epidemic of asthma has occurred in the United States. By all indications, this epidemic is continuing. Although asthma has become a major public health problem affecting Americans of all ages, races and ethnic groups, children have been particularly severely affected.



National survey data indicate that the number of children with asthma in the United States has more than doubled in the past 15 years. In 1980, 2.3 million American children had asthma.¹ By 1995, the number of affected children had risen to 5.5 million.² Based on these trends, it is estimated that in 1998 more than 6 million children in the United States have asthma. Prevalence rates of asthma are highest in boys and are increasing in both boys and girls, and in all race and ethnic groups. The prevalence of asthma in children under age 18 is 7.3%. The most rapid increase has occurred in children under 5 years old, with rates increasing over 160% over the past 15 years.¹

The number of deaths attributed to asthma in children has also increased. In 1977, 84 deaths in children 18 and younger were recorded; the number of deaths has risen to 280 in 1995, a more than 3-fold increase.³ Although the death rate due to asthma has increased in all racial and ethnic groups, minority populations experience a disproportionately higher death rate from asthma. In 1995, the death rate from asthma in African-American children, 11.5 per million, was over four times the rate in white American children, 2.6 per million.³ The higher death rates among African-American children are especially troubling.

The number of hospitalizations and emergency room visits for asthma have increased in all population groups. Asthma accounts for one-third of all pediatric emergency room visits and is the fourth most common cause for physician office visits. The variation in the impact of asthma across racial and ethnic groups is significant. African-American children have an annual rate of hospitalization of 74 per 10,000, over 3 times that for white children, 21 per 10,000.⁴ In addition, African-American children are approximately 4 times more likely than white children to seek care at an emergency room.⁵ In short, African-American children have a slightly higher risk of getting asthma, but have a much higher risk of hospitalization or death due to the disease.

At the present time, surveillance for asthma in children is limited to analyses of ongoing surveys and data systems on health events such as mortality, hospitalization, and outpatient visits. Other than for African Americans, such information is extremely limited for most ethnic groups.

There is no national system to collect data from states specifically on asthma, although several states are developing systems to collect such data. Although national data do not provide the resolution necessary to identify particular geographic areas hardest hit by the asthma epidemic, surveys undertaken in a number of large cities in the United States indicate that the prevalence and severity of asthma are greatest in the large, urban inner cities.^{6 7}

There is no national system to collect data from states specifically on asthma, although several states are developing systems to collect such data.

These measures, particularly for death, hospitalization, and emergency room visits, give an incomplete picture of the true burden of asthma in the United States. For example, one follow-up study of children with asthma in inner city areas found a nearly 10 times higher likelihood of a child suffering symptoms of asthma on a given day than visiting an emergency room.⁸ Asthma is one of the leading causes of school absenteeism, accounting for over 10 million missed school days per year.⁹ Asthma also accounts for many nights of interrupted sleep, limitation of activity, and disruptions of family and care-giver routines. Asthma symptoms that are not severe enough to require a visit to an emergency room or to a physician can still be severe enough to prevent a child with asthma from living a fully active life.

Estimating the costs of asthma is an indirect way to measure its health burden. In 1998, the cost of asthma to the U.S. economy was estimated to be \$11.3 billion,¹⁰ with the majority of the expense attributed to direct medical expenses. This estimate indicates that the direct medical costs of asthma for all ages account for about 1% of all health care expenditures in the United States.

What We Know About Childhood Asthma

Over the past 15 years, there have been major advances in the scientific understanding of asthma. Asthma is now known to be a disease of airway inflammation resulting from a complex interplay between environmental exposures and genetic and other factors. This has implications for the medical treatment and for the environmental management of asthma.

In contrast to the limited understanding of the relationship of environmental exposures to the onset of asthma, the environmental triggers of asthma attacks for children with asthma have become increasingly well characterized. House dust mites, cockroaches, mold and animal dander have been identified as the principal allergens that trigger asthma symptoms.^{11 12 13 14} Reducing exposure to these allergens has been shown not only to reduce asthma symptoms and the need for medication, but also to improve lung function.^{12 15} Environmental tobacco smoke is an important irritant that can trigger an asthma episode and possibly worsen the effects of allergens.¹⁶ Upper respiratory viral infections are also recognized as important triggers for asthma episodes.¹⁷

Children with asthma have long been recognized as particularly sensitive to outdoor air pollution. Many common air pollutants, such as ozone, sulfur dioxide, and particulate matter are respiratory irritants and can exacerbate asthma.¹⁸ Air pollution also might act synergistically with other environmental factors to worsen asthma. For example, some evidence suggests that exposure to ozone can enhance a person's responsiveness to inhaled allergens.¹⁹ Whether long term exposure to these pollutants can actually contribute to the development of asthma is not known. To date, little research has examined the role of other hazardous air pollutants (e.g., metals and volatile chemicals) in the development or exacerbation of asthma, although this is an issue of increasing public concern.²⁰

Children with asthma have long been recognized as particularly sensitive to outdoor air pollution.

In addition to improved understanding of appropriate environmental management of asthma, the medical management of asthma has changed significantly. Inhaled anti-inflammatory medications have become the mainstay of medical management to prevent asthma episodes and lessen chronic symptoms of asthma. In addition, improvements in monitoring techniques now permit objective measures of lung function that are easy for patients and physicians to use in assessing asthma severity and monitoring changes in the disease. In a disease like asthma that varies considerably over time and where changes in lung function can occur before symptoms develop, these objective measures are essential tools for making management decisions.

As a result of these advances, the medical and environmental management of asthma is better defined and the knowledge exists to manage asthma better than ever before. One especially important finding is that patient education has been documented to be cost effective.²¹ Teaching patients and their families specific management skills improves asthma management, reduces the use of emergency services, and improves quality of life. This is particularly important for asthma management, since the environmental management of asthma requires knowledge of asthma triggers and specific actions that can be undertaken to reduce exposure to these triggers. The treatment goal for almost all individuals with asthma should be for that person to lead a life unrestricted because of asthma.

Reducing exposure to environmental allergens and pollutants will reduce the frequency and severity of attacks for children with asthma, reduce their need for medicine, and improve their lung function. Children are exposed to many environmental agents that could trigger asthma attacks. For example, 25% of children in America live in areas that regularly exceed EPA limits for ozone.²² Approximately 29% of households still permit exposure of children to secondhand smoke in the home on a regular basis and exposure to environmental tobacco smoke is so widespread that approximately 88% of all children have some level of documented exposure.²³ A high proportion of children living in the inner city are exposed to high levels of cockroach antigen.²⁴

Why Has Asthma Reached Epidemic Proportions in Children?

The causes of the increasing rate of asthma over the past 15 years and the particular role that environmental exposures play are not known, but there are some clues. Atopy, the genetically inherited susceptibility to become allergic, is the most important predictor of a child developing asthma, and atopy is on the increase.²⁵ A substantial research effort is underway to identify the genes that are responsible for susceptibility to asthma. Because the genetic make-up of the population changes slowly, genetic susceptibility alone cannot be responsible for the epidemic of asthma that has occurred in the United States over the past 15 years. Further work is essential to clarify how genetic susceptibility and environmental exposures interact to cause asthma. Factors such as the intensity of environmental exposure and the age of the person being exposed are likely to be important.

Some studies suggest that exposure to allergens found indoors is a strong risk factor for developing asthma. Children are spending increasing amounts of time indoors, thus increasing their exposure to indoor allergens.^{23 26 27 28}

The causes of the increasing rate of asthma over the past 15 years and the particular role that environmental exposures play are not known

The environmental exposures most strongly suspected of causing asthma to develop include environmental tobacco smoke and allergens such as house dust mites, cockroaches, mold, and animal dander. Exposures that stimulate the immune system may also be significant, such as the pattern of respiratory infections early in life.²⁹ In addition, diet during the prenatal period and early infancy, and even decreasing rates of exercise have been suggested as risk factors for the development of asthma.^{30 31}

Scope of the Strategy

This strategy is about protecting children from the environmental risk factors that make their asthma worse. Environmental action may also help prevent asthma. To accomplish this goal, the environmental aspects of asthma must be considered in the context of other aspects of asthma prevention and management, such as access to quality medical care and efforts to understand the disproportionate health impact of asthma among minority populations. Childhood asthma is a multi-factorial disease, and efforts to improve its management and to prevent it will require multi-dimensional, multi-disciplinary efforts that must occur simultaneously. This Asthma and the Environment strategy focuses on improving the environment in which children with asthma live, learn, play and work. Environmental action, along with medical care, will help children with asthma live productive, active lives and may spare future generations of children from the disease altogether. The Task Force has prepared the following four goals to be accomplished in the next ten years, guided by the vision that in the 21st century, every child in America will live, learn, work, and play in environments that do not cause or worsen asthma.

GOALS OF THE ASTHMA AND THE ENVIRONMENT STRATEGY

BY THE YEAR 2005, THE NUMBER OF HOUSEHOLDS IN WHICH CHILDREN ARE REGULARLY EXPOSED TO SECONDHAND SMOKE WILL BE REDUCED TO 15%.¹

BY THE YEAR 2010, ASTHMA HOSPITALIZATION RATES IN CHILDREN WILL HAVE FALLEN TO NO MORE THAN 10 HOSPITALIZATIONS PER 10,000 PEOPLE.² (Healthy People 2010 DRAFT)

BY THE YEAR 2010, EMERGENCY DEPARTMENT VISITS WILL BE REDUCED TO NO MORE THAN 46 PER 10,000 PEOPLE.³
(Healthy People 2010 DRAFT)

BY THE YEAR 2010, NO MORE THAN 10% OF CHILDREN WITH ASTHMA WILL EXPERIENCE ACTIVITY LIMITATIONS.⁴
(Healthy People 2010 DRAFT)

1 Baseline: 29% in 1994. Source: Biennial Radon and ETS Survey of the Conference of Radiation Control Program Directors and EPA.

2 Baseline: Hospitalization rate per 10,000 population in 1993-94: 18 for total population; 50 for children 0-4 yrs of age and 18 for children 5-14 yrs. Source: Healthy People 2010 Draft

3 Baseline: Emergency room visits 71 per 10,000 population for total population in 1992-94; 121 for children 0-4 yrs of age and 81 for children 5-14 yrs. Source: Healthy People 2010 Draft

4 Baseline: Activity limitation for persons with asthma: 22 percent for overall population in 1992-94. No children-specific data available. Source: Healthy People 2010 Draft

VISION FOR THE 21ST CENTURY

Every child in America will
live, learn, work, and play
in environments that do
not cause or worsen
asthma.

GUIDING PRINCIPLES

Federal agency actions can provide leadership and direction in reducing environmental risks to protect children who have asthma or are at risk of developing it. Recommendations put forward in this strategy are predicated on the principles that federal action must have:

1. A focus on efforts to better understand and eliminate the disproportionate impact of asthma in minority populations and those living in poverty.

Poor and minority children are much more likely than white, non-Hispanic children to visit an emergency room, to be hospitalized, or to die from asthma, although the rising prevalence of asthma has affected all populations. The reasons for this disparity are not known, although environmental exposures and limited access to quality medical care may all play a role.

The focus on eliminating disparities across racial and ethnic groups has to be considered in all efforts to prevent asthma and its health impact; however, because of the importance of this issue the Task Force has included a specific recommendation in this strategy to examine, understand, and ultimately eliminate disparities.

2. An emphasis on partnerships and community based programs.

A successful effort to reduce childhood asthma will depend in part on the level of success achieved in enlisting all sectors of society in efforts to implement effective programs to prevent and manage the disease. Federal agencies have already forged effective partnerships with many health and professional organizations, corporations, and foundations to conduct training, educate health care providers and the public, and to implement a wide range of prevention activities at the national, state, and local levels.

Expanded partnerships both within government and between government and the private sector are needed. With increasing knowledge about the primary causes of asthma and triggers of asthma attacks, the challenge for the 21st century will be to integrate new research findings into effective environmental, medical and educational programs. Partnerships will be critical to implementing this broad vision of asthma control. In particular, community-based programs should integrate asthma control activities into existing systems such as schools, child care, youth programs, workplaces, primary health, and job training programs.

The challenge for the 21st century will be to integrate new research findings into effective environmental, medical and educational programs.

3. A commitment to setting measurable and consistent goals for childhood asthma under the Healthy People 2010 program.

Health objectives are now being developed for the year 2010 and represent a significant revision of the goals set for the year 2000. These objectives will set the nation's health agenda for increasing years of healthy life and reducing disparities among the entire American population. Draft objectives currently encompass an expanded set of asthma-related objectives for improved clinical management as well as a series of environmental objectives addressing known asthma triggers such as indoor allergens, secondhand smoke and outdoor air pollution. The goals embodied in the final Healthy People 2010 document will serve as the tools to measure progress towards control of asthma.

4. Investment in evaluation of programs to identify those strategies that are most effective in reducing the burden of asthma so that they may be replicated.

Asthma intervention programs and related activities need to be fully evaluated to determine those techniques which are successful and should be replicated. Evaluation should be incorporated in the planning of all programs and should include:

- identification of desired health outcomes of the program;
- measurement of effectiveness of the intervention activities and processes used to implement them;
- identification of unforeseen obstacles;
- assessment of the cost-effectiveness of the program;
- a prediction of long term sustainability of the program.

RECOMMENDATIONS

I. RESEARCH

Strengthen and accelerate focused research into the environmental factors that cause or worsen childhood asthma.

EXPAND RESEARCH INTO THE ENVIRONMENTAL FACTORS THAT CONTRIBUTE TO THE ONSET OF ASTHMA IN CHILDREN.

Though progress has been made in understanding what causes asthma, there is currently insufficient scientific information to establish specific guidelines and recommendations for public health practices to prevent the onset of asthma in children (i.e. primary prevention).

In order to establish primary prevention guidelines, the top priority for research is to determine the causes of asthma in children and particularly the role of the environment. To understand what causes asthma, research must identify the basic cellular and molecular mechanisms that cause airway inflammation and sensitization and, in particular, the interaction of environmental exposures and genetic susceptibility.³² In addition, clinical and epidemiologic studies are needed to examine the relationship between environmental exposures and the onset of asthma.



Because of promising preliminary work on the relationship of indoor allergens and asthma onset, as well as the much greater proportion of time that children spend indoors, greater emphasis on examining the relationship of indoor exposures to the development of asthma is warranted. Exposures to high levels of allergens in the indoor environment have been shown in some studies to be associated with the subsequent development of asthma.³³ However, few studies have examined the importance, by geography, of particular allergens. In studies evaluating the role of indoor allergens on exacerbations of asthma, different allergens, such as those associated with cockroaches, dust mites, and mold, have been implicated in different cities. This suggests that different allergens can exacerbate asthma, and that different allergens may be capable of inducing the new onset of asthma.

In one study,²⁶ avoiding exposure to dust mite and food allergens early in life was found to reduce the risk of developing asthma in the first year of life. However, this effect was not statistically significant at 2 to 4 years of age. Whether such allergen avoidance strategies are feasible and effective in reducing the development of asthma is not known.

The complex interactions between outdoor air pollutants and allergens and the development of asthma have not been adequately evaluated. Because adult-onset asthma is known to be associated with occupational and home based¹⁴ exposures to volatile organic compounds (VOCs), including formaldehyde, ethylene oxide, and isocyanates, further work to assess the possible etiologic role of specific pollutants in childhood asthma is appropriate. VOCs are also known to exacerbate adult asthma.¹⁵

EXPAND AND ACCELERATE RESEARCH TO DEVELOP AND EVALUATE ENVIRONMENTAL STRATEGIES THAT WILL IMPROVE THE QUALITY OF LIFE FOR CHILDREN WITH ASTHMA.

It is well established that inhaled allergens, irritants and outdoor pollutants provoke asthma symptoms. Research is needed to identify if other environmental exposures are significant. Further, the relative importance of various exposures is not well understood. Cost effective strategies for reducing exposures are not well developed.

Patient education strategies in certain populations have profound impacts on reducing the frequency and severity of exacerbations and improving the quality of life for children. But many of these programs are not responsive to the cultural, ethnic, and economic diversity of the American population. Innovative strategies are urgently needed for reaching a wide range of children and their families, for tailoring recommendations for reducing environmental exposures to their needs, and for providing support to follow the recommendations.

2. PROGRAMS TO IMPROVE PUBLIC HEALTH

Implement public health programs that improve use of scientific knowledge to prevent and reduce the severity of asthma symptoms by reducing environmental exposures.

PROMOTE CLINICIAN AND PATIENT IMPLEMENTATION OF NATIONAL GUIDELINES FOR REDUCING ENVIRONMENTAL RISKS THAT WORSEN ASTHMA.

Despite uncertainty about the causes of the increase in asthma prevalence rates, much can and should be done to prevent severe illness and death from asthma and improve the quality of life of persons with asthma. Experts convened by the National Asthma Education and Prevention Program (NAEPP) coordinated by the National Institutes of Health (NIH) have reviewed the

scientific literature and produced guidelines for managing asthma. These include specific recommendations for controlling environmental factors that contribute to asthma severity.

While there is consensus that NAEPP guidelines define the best diagnosis and management practices for asthma, dissemination of the guidelines must be expanded and adoption improved. Many clinicians do not include advice about environmental control in their patient education. Among families who do receive recommendations, adherence is generally low. Asthma is highly variable, and families need help establishing priorities for environmental control measures that will be suitable for their individual child's asthma and their family circumstances. Effective public health programs can provide this education and support.

For children without access to quality health care, appropriate instruction on the environmental triggers of asthma is impossible or severely limited. Emergency rooms or urgent care facilities may serve as the only source of primary care for such children. These settings should be recruited to provide the kind of education and links to chronic disease management services that are essential to reducing the severity and frequency of asthma attacks.

EXPAND SUPPORT FOR STATE AND LOCAL PUBLIC HEALTH ACTION.

Recent advances in the treatment of asthma and in identifying the environmental triggers of asthma attacks make it possible to control and prevent symptoms at a level unheard of just ten years ago. But these gains have not been realized by many of our children. Public health agencies have a critical role in helping to reduce environmental factors affecting asthma and the human and financial toll of the disease. These programs should include the following components:



- (1) Education and training
- (2) Asthma surveillance
- (3) Coalitions for prevention

REDUCE CHILDREN'S EXPOSURE TO ENVIRONMENTAL TOBACCO SMOKE AND OTHER INDOOR TRIGGERS IN THEIR HOMES.

Secondhand tobacco smoke and indoor allergens are major contributors to the incidence of wheezing in young children and play a significant role in the number and severity of asthma attacks. Reducing smoking in homes with young children will improve the health status of the estimated 2 million children with asthma who are exposed to secondhand smoke. In addition, exposure to allergens such as cockroach, house dust mite, mold, and animal dander causes many attacks of asthma that are preventable.



ESTABLISH SCHOOL BASED ASTHMA PROGRAMS IN EVERY COMMUNITY.

The educational system is a critical component of effective efforts to reduce illness due to asthma in children. Programs will be implemented in schools to assure a healthy physical environment at the school and to promote improved self-management of asthma through education.

CONTINUE TO REDUCE OUTDOOR AIR POLLUTION

The U.S. EPA set national ambient air quality standards (NAAQS) for six air pollutants in 1971, in part based on evidence of associations between air pollutants such as ozone, particulate matter, and sulfur dioxide and asthma. Since that time substantial new epidemiological evidence has been published supporting the association between levels of ozone and particulate matter and increased hospitalization for respiratory illnesses, such as childhood asthma. In 1997, NAAQS for both ozone and particulate matter were strengthened to improve the protection afforded by these standards and to help reduce the risk of ambient exposures that aggravate asthma in children.

Federal, State, local, and private sector efforts to implement the original NAAQS resulted in substantial improvements in air quality, yet notable problems remain. Following the 1990 Clean Air Act Amendments, efforts were expanded to improve nationwide air quality and reduce related health effects. In conjunction with the strengthening of the ozone and particulate matter NAAQS in 1997, EPA has taken steps to integrate implementation measures for these pollutants and to improve the effectiveness of control programs. EPA has also taken steps to inform the public about air pollution that may affect children.



3. SURVEILLANCE

Establish a coordinated nationwide asthma surveillance system for collecting, analyzing, and disseminating health outcome and risk factor data at the state, regional and local levels.

Current national surveillance permits tracking of asthma prevalence, asthma physician office visits, asthma emergency room visits, asthma hospitalizations and asthma mortality at a national level and in four geographic regions (i.e., Northeast, Midwest, South, and West) through surveys conducted by the National Center for Health Statistics. Surveillance information on asthma, with the exception of mortality data, are not available at the state or local level. This

information is needed to identify high risk populations and environmental risk factors of relevance to particular communities and to design and implement interventions that will be most suitable for, and therefore most likely to succeed, in that community. State and local health agencies also need this information to evaluate the impact of local sources of air pollution on childhood asthma in specific communities. A significantly enhanced and expanded surveillance program will be essential to study issues related to race and gender differences in asthma morbidity and mortality among children, identify gaps in providing comprehensive care, and monitor trends in asthma morbidity and mortality at the community level.

4. DISPROPORTIONATE IMPACTS ON THE POOR AND MINORITIES

Identify the reasons for and eliminate the disproportionate burden of asthma among different racial and ethnic groups and those living in poverty.

Poor and minority children are disproportionately affected by asthma, which has reached epidemic proportions in many American inner cities. Prevalence rates vary only by a few percentage points among different race and ethnic groups, yet emergency room use, hospitalization, and mortality rates vary 3- to 4-fold. Understanding the factors that contribute to the disproportionate impact of asthma on minority and lower income populations is the critical first step to reducing and eventually eliminating the disparities between rich and poor, minority and non-minority children. Such factors may include differing intensities of environmental exposures, such as exposure to cockroach antigen and access to and quality of care, among others.

Poor and minority children are disproportionately affected by asthma, which has reached epidemic proportions in many American inner cities.

IMPROVE ASTHMA MANAGEMENT FOR CHILDREN WITHIN THE MEDICAID PROGRAM.

Disease management combines prevention, intensive attention to treatment and patient compliance, and guidance for self-care. This concept has considerable promise for reducing the frequency and severity of asthma attacks. Integrating an asthma disease management initiative within the fee-for-service component of Medicaid would demonstrate the efficacy of this approach in improving children's health.

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America's Children and the Environment

A First View of Available Measures



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