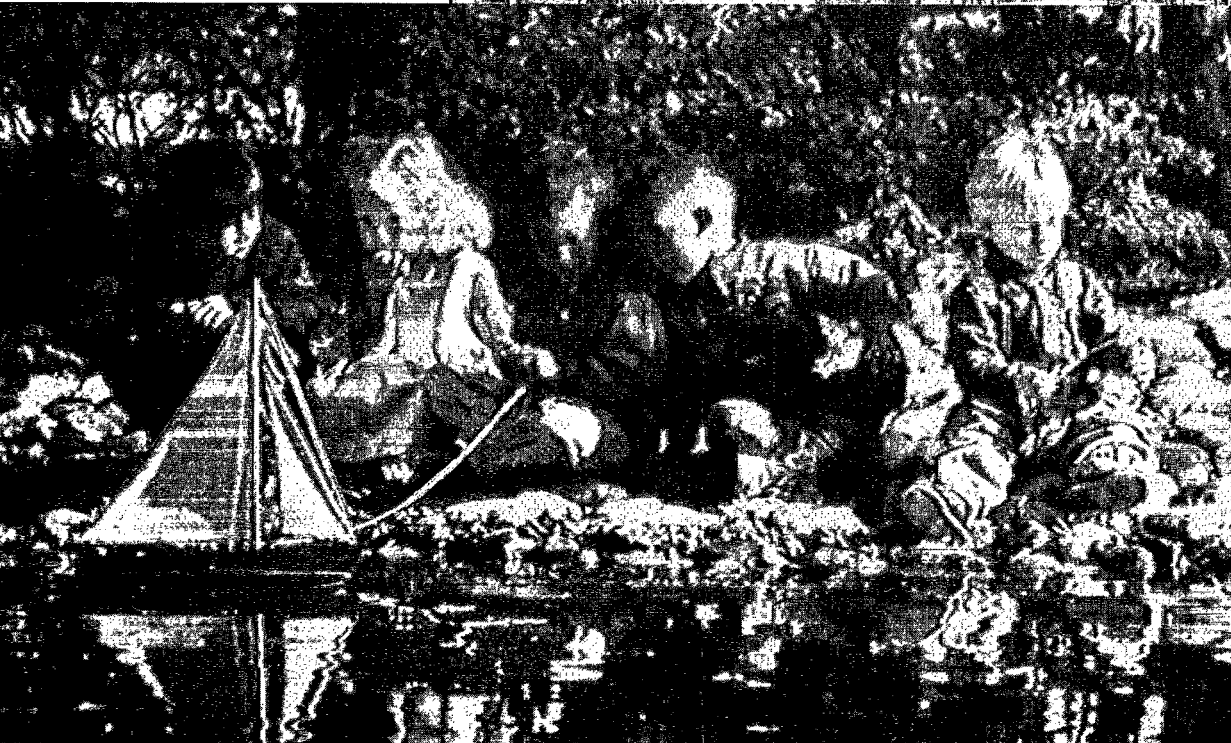
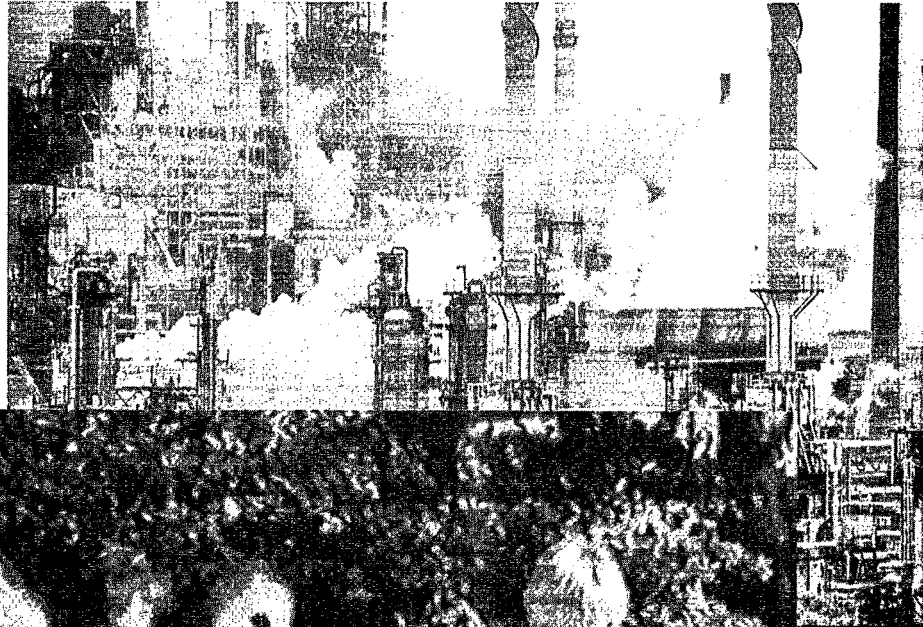




Environmental Health Threats To Children





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
THE ADMINISTRATOR

September 1996

Dear Reader:

EPA's report on *Environmental Health Threats to Children* presents the latest information on a major issue concerning today's families -- how children's health is directly and uniquely affected by our environment. Today, we recognize that children face an array of complex environmental threats to their health -- from asthma-inducing air pollution to toxic chemicals. This report describes how and why children are affected by these threats.

The report also details the Clinton Administration's substantial efforts to protect children from environmental health threats. These actions range from signing new laws that explicitly protect children from pesticides and provide safer drinking water, to expanding families' right-to-know about lead-based paint and other environmental pollutants, to issuing tough new standards for industrial air pollution. I firmly believe that we can best protect the health of all Americans and our environment by protecting our children.

Also contained in this report is EPA's *National Agenda to Protect Children's Health from Environmental Threats*, in which we call for a national commitment to ensure a healthy future for our children. We call on national, state and local policy makers -- as well as each community and family -- to learn about the environmental threats our children face; to participate in an informed national policy debate on how together we can best reduce health risks for children; and to take action to protect our nation's future by protecting our children.

EPA is committed to providing the American people with as much information as possible about environmental issues affecting children's health. This report is a major step forward in educating the nation about what we can do to ensure for our children a healthy environment and a healthy future.

Sincerely,

A handwritten signature in cursive script that reads "Carol M. Browner".

Carol M. Browner



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Executive Summary

Protecting Our Children Is Fundamental

Protecting our children is one of the Clinton Administration's highest priorities. Healthy children and strong families are fundamental to the future of our nation. Protecting our environment is critical to our children's health today, and lays the groundwork for a healthier future for their generation, and for generations to come. As a nation, we must remain vigilant about protecting our children from environmental hazards—which we now recognize pose many unique threats to children's health. This report outlines the status of children's environmental health; sets forth Environmental Protection Agency (EPA) accomplishments in protecting children from environmental health risks; and puts forward EPA's agenda that challenges the nation to ensure our children's healthy futures.

Children Are Particularly Vulnerable to Environmental Health Risks

For several years, the Clinton Administration has recognized and worked to improve our understanding of how children are at increased risk from many environmental threats, compared to adults. Children are particularly at risk from environmental hazards in three ways:

- Because children's systems are still developing—including rapid changes in growth and development, immature body organs and tissues, and weaker immune systems in infancy—they are more susceptible to environmental threats.
- Because children eat proportionately more food, drink more fluids, and breathe more air per pound of body weight, and because they play outside more, they are more exposed to environmental threats.
- Because children are least able to protect themselves, their behavior—such as crawling on the ground or the floor—exposes them to different environmental hazards.

Children Face a Wide Array of Environmental Hazards

Children today face significant and unique threats from a range of environmental hazards. Government and its partners have never faced a more complex challenge in protecting children. Environmental health hazards that threaten children range from asthma-inducing air pollution and lead-based paint in older homes, to treatment-resistant microbes in drinking water and persistent industrial chemicals that may cause cancer or induce reproductive or developmental changes. Just as the nation rose to meet the challenge of uncontrolled industrial pollution over the past 25 years, so too should we now commit to meet this new and critical challenge for our future.

The Clinton Administration Has Acted to Protect Children from Environmental Risks

The Clinton Administration has made great strides in protecting children. The Administration's new policy ensuring consideration of special environmental threats to children in the development of risk assessments, as well as its research agenda focusing on food pesticides and other exposures unique to children are among the many efforts the Clinton Administration has made to improve protection of children's health, based on cutting-edge science.

The centerpiece of EPA's effort has been Administrator Carol M. Browner's national policy, announced on October 23, 1995, to consistently and explicitly take into account health risks to children and infants from environmental hazards when conducting assessments of environmental risks. This new policy directly responds to issues raised by the National Academy of Sciences 1993 report, *Pesticides in the Diets of Infants and Children*, and is an extension of Administrator Browner's efforts to make children's health a priority throughout the Agency.

The Clinton Administration also has made children's health issues a high priority across all of EPA's work, including: drinking water protections; toxic waste clean-ups; toxic air pollution reduction; protections for rivers, lakes and streams; safety controls for toxic chemicals used at home; lead poisoning prevention; enforcement of environmental laws; and, most critically, use of the best scientific research to answer the many questions that remain about how children's health is affected by environmental hazards.

Responding swiftly to recommendations in the National Academy of Sciences 1993 report, the Clinton Administration took unprecedented steps to protect the health of children from the risks posed by pesticides in their food. The Administration committed to ensuring the safety of foods our children eat by considering children's unique exposures and risks, and by reducing the overall use and risks of pesticides in the United States. EPA has intensified its efforts to: reduce the use of high-risk pesticides; increase the research and testing needed to learn more about children's exposure to pesticides in food; and establish new standards to protect children and infants from dietary health risks posed by pesticides. EPA also is expanding its assessment of the effects from substances on children's neurological, endocrine, and immune systems.

More Remains to be Done

The array of environmental threats facing children today—and the uncertainties in the adequacy of current protections derived principally to protect adults—will require great care and commitment to address. We recognize that children's environmental health issues are a

top priority and must become a central focus of all EPA's efforts.

We thus challenge our partners in industry, governments, Congress, academics, health professions and interest groups to commit to adopt and help to implement EPA's

National Agenda to Protect Children's Health From Environmental Threats.

To meet this challenge, the Administration will:

1. As a national policy, ensure that all standards EPA sets are protective of the potentially heightened risks faced by children, and that the most significant current standards be re-evaluated as we learn more;
2. Identify and expand scientific research opportunities on child-specific susceptibility and exposure to environmental pollutants so that the best information can be employed in developing protections for children;
3. Develop new, comprehensive policies to address cumulative and simultaneous exposures faced by children—analogous to the goal of EPA's Common Sense

Initiative—moving beyond the chemical-by-chemical approach of the past;

4. Expand community right-to-know—building on successes under the current law and expanding the available tools through a Family Right-to-Know Initiative—to allow families to make informed choices concerning environmental exposures to their children;
5. Provide parents with basic information so they can take individual responsibility for protecting their children from environmental health threats in their homes, schools, and communities;
6. Expand educational efforts with health and environmental professionals to identify, prevent, and reduce environmental health threats to children; and
7. Commit to provide the necessary funding to address children's environmental health issues as a top priority among relative health risks, as started in the President's Fiscal Year 1997 Budget.

EPA's National Agenda to Protect Children's Health from Environmental Threats will, together with the efforts of our partners, ensure that children receive the protection they need and deserve, and help our nation fulfill its obligation to protect future generations.

EPA's National Agenda to Protect Children's Health from Environmental Threats

I. The Problem

The Clinton Administration has recognized and worked to improve its understanding of how children are more at risk from many environmental threats than adults. Children are particularly at risk from environmental hazards in *three* ways:

- **Because children's systems are still developing, they are more susceptible to environmental threats.** Children move through several stages of rapid growth and development, from infancy through adolescence. Exposure to toxic substances can affect fetal, infant, and childhood growth, impairing development of their nervous systems, and causing abnormal development because of hormonal or immunologic effects. Infant immune systems are less well developed, so, for example, they may be less able than healthy adults to recover rapidly from microbes found in drinking water, such as *cryptosporidium*.
- **Because children eat proportionately more food, drink more fluids, breathe more air, and play outside more, they are more exposed to environmental threats.** Children eat more calories, drink more water and breathe more air per pound of body weight than adults do, and thus may ingest more pollutants per pound of body weight. They eat far larger amounts of certain foods for their body weight than adults. Their immature skin and body tissues risk greater damage from the sun, and can more readily absorb many harmful substances.
- **Because children are least able to protect themselves, their behavior exposes them to different environmental hazards.** Children's natural curiosity and tendency to explore leaves them open to health risks adults can more easily avoid. When young children crawl on the ground or the floor or play outside, they are more exposed to potentially contaminated dust and soil, lead paint, household chemicals, garden chemicals, and other potentially hazardous substances.

II. Environmental Health Threats to Children

We now recognize the **magnitude** of these health threats to our children. Asthma, for example is now the leading cause of hospital admissions for our nation's children. Children face a wide array of major environmental health threats, including these areas:

- **Lead poisoning** is a top environmental health hazard for young children, **affecting as many as 1.7 million children age five and under**, according to Centers for Disease Control and Prevention (CDC) data. Although lead-based house paint has long since been taken off the market, children living in older homes are threatened by chipping or peeling lead paint, and excessive amounts of lead-contaminated dust. **More than 80 percent of U.S. homes built before 1978—some 64 million—contain lead paint.** Lead poisoning in children causes IQ deficiencies, reading and learning disabilities, impaired hearing, reduced attention spans, hyperactivity, antisocial behavior, and other problems.
- **Pesticides** pose a risk for children both as household chemicals and in food, particularly because children consume higher amounts of fresh produce than adults. Some pesticides can cause cancer, central nervous system damage, or respiratory illness. **Each year, more than 100,000 children accidentally directly ingest pesticides.** EPA receives an average of 24,000 pesticide hotline calls each year, two-thirds of which are from parents concerned about pesticides' dietary or household risks for children.
- **Asthma** deaths are on the rise in children and young people, **increasing by a dramatic 118 percent between 1980 and 1993**, according to the CDC. Many of the most common air pollutants can cause or contribute to respiratory illnesses, including asthma, which is now the leading cause of hospital admissions for our nation's children. **More than 25% of the nation's children live in areas that don't meet national air quality standards.**
- **Drinking water contaminants** pose a risk to children, particularly to infants, who drink more fluids per pound of body weight—and who may be more vulnerable to the effects of microbial contaminants like *cryptosporidium*. EPA estimates that last year, a total of **30 million Americans drank water from systems that violated one or more public health standards**—and roughly 13 million of them are served by systems that do not filter their water and thus may not adequately protect against microbial contaminants. In Milwaukee in 1993, hundreds of thousands of residents became severely ill and 100—including children—died after the drinking water became contaminated with *cryptosporidium*.
- **Polluted waters** not only affect children when they swim in our lakes and streams, but also when they eat certain freshwater fish. Hundreds of beaches are closed

each summer due to raw sewage and other contamination. All over America, warning signs are posted near thousands of rivers, lakes and streams, raising special concerns that pregnant women, children, and others with sensitive or compromised immune systems should not eat fish caught in the water because of contamination. From January to September 1994, some 1,500 fish advisories were posted—with 73 percent of them related to mercury contamination. Exposure to high doses of methyl mercury during pregnancy and the first few months of life may pose particular threats to a child's developing nervous system.

- **Toxic waste dumps** are a neighborhood blight and a health hazard to our communities, especially to our children. Parents should not have to worry that their children will be exposed to toxic waste when playing in their neighborhood, yet one in four Americans—including 10 million children under the age of 12—lives within four miles of a toxic waste dump and our cities are littered with thousands of abandoned industrial sites.

- **PCBs, or polychlorinated biphenyls**, were banned by EPA in 1976 because they cause cancer; some 20 years later, however, this toxic chemical continues to persist in the environment, often in contaminated fish. Children whose mothers have high levels of PCBs when pregnant may develop learning disabilities and experience delayed development.

- **Second-hand tobacco smoke** dramatically affects children. A recent CDC study estimates that children exposed to tobacco smoke in their homes have 16 million more days of restricted activity, 10 million more days of bed confinement, and miss 7 million more school days annually than other children, primarily due to acute and chronic respiratory conditions.

- **Overexposure to the sun's harmful ultraviolet light** can damage children's skin as they spend time playing outdoors. The American Academy of Dermatology

estimates that up to 80% of a person's lifetime exposure to potentially damaging ultraviolet light occurs before the age of 18. Ultraviolet rays pose a threat to children because severe sunburns experienced in childhood increase the likelihood of developing malignant melanoma, the most deadly kind of skin cancer. Last year there were an estimated one million new cases of skin cancer in the United States.

Children also face several environmental risks that we are just beginning to understand more fully:

- **Potential Effects on the Endocrine System from Pesticides and Industrial Chemicals:** In recent years, increasing scientific and public attention has been focused on the potential effects of synthetic chemicals on the hormone system. These chemicals—which have been labeled "endocrine disruptors"—may pose a major health concern for children. Although there is considerable scientific uncertainty, it is clear that a number of chemicals, including organochlorine pesticides such as DDT and chemicals such as PCBs, can cause endocrine disruption in wildlife and laboratory animals. Because very low levels of chemicals that block or mimic reproductive and thyroid hormones can determine the course of prenatal development, concern exists about the potential for birth defects and alterations of normal growth and development in children. Endocrine disruptors may also play an important role in reproductive cancers.

- **Potential Effects from Particulate Matter Air Pollution:** Epidemiological studies indicate that exposure to particulate matter—fine particles in the air, such as soot or dust—at levels below the current national ambient air quality standard can be associated with adverse effects on public health. Studies have identified children as a sensitive population to particulate matter, both in general and for those with respiratory illness. Reports of restricted activity days, school absences, increased respiratory symptoms, and decreased lung function have all been associated with children's exposure to particulate matter.

III. The Clinton Administration Has Acted to Protect Children from Environmental Health Risks

The Clinton Administration has achieved important progress in improving environmental health protection for our children. From its new policy emphasizing the need to ensure that environmental threats to children are considered when conducting risk assessments, to its research agenda focusing on food pesticides and other exposures that are unique to children, the Administration has been on the cutting edge of protective science.

Under President Clinton's leadership, EPA and other federal agencies are making children's health considerations a priority in all of their work to protect public health and the environment, including work to: set strong environmental and public health standards and protections; educate the public and ensure the public's right to know; and conduct research to answer the many questions that remain about how children's health is affected by environmental problems.

The centerpiece of EPA's effort is the Administrator Carol M. Browner's national policy, announced on October 23, 1995, to consistently and explicitly take into account the health risks to children and infants from environmental hazards when conducting environmental risk assessments. This new policy directly responds to issues raised by the National Academy of Sciences 1993 report, *Pesticides in the Diets of Infants and Children*, and is an extension of Administrator Browner's efforts to make children's health a priority throughout the Agency.

A. Applying the Best Science to Protect Our Children's Future

The Clinton Administration has worked conscientiously to ensure sound scientific underpinnings for its policy initiatives on protecting children. It is critical that the best science be applied to these problems; that the research be of the absolute highest integrity and caliber; that it be on the cutting-edge in sophistication, allowing for consideration of the special mechanisms that affect children as well as differences in susceptibility, and not just whether an effect to the general population occurs; and that it focus on the issues of greatest risk and concern.

Emblematic of EPA's efforts has been the development of a cluster of new risk assessment and testing protocol guidelines. These help ensure that assessments are conducted using a consistent set of standards and a framework that requires a focus on the unique factors exhibited by infants and children. EPA has recently proposed new guidelines for assessing cancer-causing substances and neurotoxicological effects. Guidelines for evaluating reproductive toxicity will be issued later this year. EPA has also recently proposed new test guidelines

for the evaluation of chemicals that focus on developmental toxicity and reproductive toxicity testing. All of these require a sophistication in scientific evaluations that looks at the impacts of environmental agents on mechanisms that specifically may affect infants, children, fetuses, and the ability to bear children.

EPA research priorities have a special focus on issues affecting children's health. From work on microbial drinking water contaminants and support for research on urban air issues, to consideration of reproductive and developmental effects of endocrine disruptors, EPA's research priorities are an important part of its agenda focused on children. Included among the Administration's efforts are:

Focusing Toxic Air Pollution Research

Asthma—both individual episodes and asthma-related deaths—is increasingly on the rise in children and young people. Ongoing research sponsored by the Administration is expected to provide new information critical to understanding how air pollution affects the development of asthma in children. A special effort funds research that focuses on the link between health effects and exposure to toxic urban air pollution. EPA is funding studies that identify whether special subpopulations—such as infants and children—are at increased health risks due to higher exposure to toxic urban air pollution, or due to their inherent biological sensitivities. These community-based efforts will examine the pattern, frequency, and magnitude of exposures in specific communities.

Defining the Risks of Microbial Contaminants in Drinking Water

To ensure that the water our children drink is safe from contaminants that pose the greatest threat to their health, our immediate priority is increasing our understanding of microbial contaminants, most notably *cryptosporidium*. A number of epidemiological surveys and day-care-center outbreaks have shown that young children, especially those under the age of two, may be more susceptible to *cryptosporidium*-related illness. EPA has launched new monitoring and treatment programs and is participating in scientific efforts to find answers about deadly parasites like *cryptosporidium*, including how we can better test for them, how people are exposed to them through water, and how to develop effective treatment programs. EPA is also working with the Centers for Disease Control and Prevention and others to assure that the risks associated with *cryptosporidium* are communicated clearly and accurately, particularly to protect those with sensitive immune systems, including infants.

Improving Scientific Knowledge About Children's Exposure to Pesticides

A 1993 National Academy of Sciences report, *Pesticides in the Diets of Infants and Children*, concluded that then-current scientific and regulatory approaches did not adequately protect infants and children from pesticide residues in food. The Academy called on EPA to make significant changes in assessing exposure to pesticides, analyzing the potential for harmful or toxic effects, and using these data to characterize actual risks. Thus, the Academy report provided a major challenge to EPA to improve the safety of our food supply and provide greater assurance that our children are protected. The Clinton Administration moved aggressively and rapidly to respond to the Academy report with a sweeping joint effort by EPA, the U.S. Department of Agriculture (USDA), and the Food and Drug Administration (FDA) to carry out the Academy recommendations.

Basing Pesticides Standards on Children's Actual Exposures

EPA is expanding its Pesticides in Children Research Program. In FY97, EPA will conduct a survey of children's exposure to pesticides through air, water, food, and dust in homes, schools, day care facilities, and other areas. From characterizing children's activity patterns to addressing toxic effects as a function of age—including response as a function of critical periods of neurological and immunological development—EPA will be better equipped to understand the special problems affecting children.

The National Academy of Sciences report recommended that EPA take into account children's unique dietary patterns when setting pesticide standards and registrations. EPA now routinely considers dietary risk to infants and children in registering and re-registering pesticides. In some cases, the Agency determines that risks to children are unacceptable, resulting in the denial of permission to use certain pesticides or voluntary withdrawal. The U.S. Department of Health and Human Services (HHS), USDA, and EPA are designing new surveys to improve our knowledge of what infants and children eat. And EPA is also improving its methods of analyzing the component parts of food as it is eaten (for example, pizza is made up of wheat, tomatoes and milk), so that exposure to pesticide residues can be estimated more reliably.

The Academy also recommended that EPA account for other exposures to the same pesticides found in children's diets, to create a more complete picture of the unique risks children face. EPA now uses an approach to risk assessment that examines children's multiple routes of exposure to pesticides at home and in schools, as well as in food. EPA also has developed a new method for assessing

acute—or short-term—exposures to toxic pesticides, improving the Agency's ability to prevent children from being exposed to pesticide residues that can cause illness after only a single serving of the food is consumed.

The National Academy of Sciences report also recommended improvements in monitoring and tracking pesticide residues on the food children most frequently eat. Since 1993, EPA, FDA, and USDA and the states of California and Florida have been developing a National Pesticide Residue Database to compile in one place all data on pesticide residues gathered from monitoring of food throughout the U.S. The Academy recommended this step to provide a more reliable picture of pesticide residues in our food. FDA and USDA food monitoring programs have been redesigned to emphasize monitoring of food that is particularly important in children's diets, such as pears, apples, tomatoes, rice, and peas.

Conducting Better Assessment of Risks Unique to Children

The National Academy of Sciences report recommended a full assessment of unique risks to children because of growth and developmental vulnerabilities. EPA is moving to require pesticide and chemical manufacturers to conduct new tests needed to assess potential toxic effects of pesticides on the immune system, the nervous system, reproduction and development, and the visual system of children.

Setting Standards Based on Combined Exposures of Chemicals with the Same Mode of Action

The National Academy of Sciences report concluded that many pesticides on the market act in the same or similar ways—both in their effectiveness as pest controls and in the health effects they cause in humans. Yet EPA regulates these chemicals one at a time. EPA has begun to phase in an assessment process that will fully capture the combined risk posed by such chemicals, starting with a special review for the triazine herbicides.

Researching Potential Effects on the Endocrine System from Pesticides and Industrial Chemicals

In recent years, increasing scientific and public attention has been focused on the potential effects of synthetic chemicals on the hormone system. EPA has acted to ban many of these chemicals—including DDT and PCBs—and has already taken many steps to regulate over 95% of known sources of dioxin in the U.S. In addition, the Clinton Administration is involved in important research to try to better understand increasing reports of reproductive, developmental and other problems linked to some chemicals, including processes that may uniquely affect children. The Administration is continuing to develop a national research strategy, developing new strategies—

with the involvement of stakeholders—for areas like pesticide and chemical screening, testing and controls. EPA's research in FY97 will focus on important questions to determine: classes of chemicals that may affect the endocrine system; how much exposure produces adverse effects; how humans and wildlife are exposed; effects actually occurring in humans and wildlife; and the combined effects of exposure to multiple endocrine disruptor chemicals.

Improving Scientific Knowledge About Fine Particle Air Pollution

In FY97, EPA will significantly expand its research program on particulate matter air pollution. Research will be conducted to identify the way in which particles affect human health, the critical exposure concentrations, and the sizes, chemical compositions, and sources of particles responsible for health effects. Research also will begin to investigate technologies and control practices to reduce fine particles.

Improving Scientific Knowledge About Mercury

Mercury in its organic form can produce a variety of health effects depending on the amount and timing of exposure. Data from both humans and experimental animals indicate that methylmercury disrupts the development of nervous systems, and is of particular concern during the prenatal and postnatal period. These effects may occur at lower levels of exposure for children and fetuses.

EPA is examining the extent of these environmental concerns. A draft report to Congress on mercury, including analysis of exposure routes and risk characterization, is undergoing peer review by EPA's independent Science Advisory Board. EPA also is closely monitoring the findings of ongoing human studies related to exposures to methylmercury and their impact on nervous system development. EPA will be refining its Oral Reference Dose to set a standard for exposure.

B. Setting Strong Standards and Taking Tough Actions to Protect Children's Health

The Clinton Administration has made great strides in focusing EPA's efforts on matters of significant consequence to children's environmental health and in setting environmental standards that will be adequately protective. Among the Administration's accomplishments are:

Protecting Children from Toxic Lead Poisoning

One of the greatest steps in protecting children's health was EPA's ban on lead in gasoline twenty years ago and the Consumer Product Safety Commission's ban on lead

in paint—resulting in a 98% reduction in lead levels in the air and protecting millions of children from serious, permanent learning disabilities by helping to reduce blood lead levels by 75 percent, according to CDC data.

Today, however, lead poisoning is still a leading environmental health hazard for young children, affecting as many as 1.7 million children age five and under—one out of every 11. Although lead-based house paint has long since been taken off the market, children living in older homes are threatened by chipping or peeling lead paint, or excessive amounts of lead-contaminated dust. More than 80 percent of homes built before 1978 contain lead paint. Even at low levels, lead poisoning in children can cause IQ deficiencies, reading and learning disabilities, impaired hearing, reduced attention spans, hyperactivity and other behavior problems. Pregnant women poisoned by lead can transfer lead to a developing fetus, resulting in adverse developmental effects.

To address this most pressing remaining need in lead poisoning prevention, EPA works with the U.S. Departments of Housing and Urban Development (HUD) and Health and Human Services (HHS) to ensure that the nation's housing is "lead safe." The Clinton Administration has expanded this initiative to include: the control of hazardous lead paint in housing where children live; research on lead poisoning and lead abatement; training and certification of lead removal workers to ensure effective abatement; public education on the health risks posed by lead paint, particularly targeted to parents and children; and enforcement efforts.

Protecting Children from Pesticides

Going beyond the recommendations of the 1993 National Academy of Science's report, the Clinton Administration launched a major effort to improve the safety of food for children, while the work to carry out the Academy's recommendations is underway. These efforts include three major components:

- **Strengthening Pesticide Standards to Limit the Health Risk to Infants and Children:** In August 1996, President Clinton signed an across-the-board strengthening of our nation's food safety laws (Food Quality Protection Act) which included three important Administration-recommended reforms: a stronger health-based standard to limit the risks of pesticide exposure; special protections for infants and children; and expansion of the consumer's right-to-know about pesticide risks.

- **Reducing the Risks—and Minimizing the Use—of Pesticides Now:** To speed the reduction of pesticide risks—even while awaiting the results of new and emerging scientific data—EPA, FDA and USDA have pledged to take several steps to reduce pesticide use overall. These include: ensuring the availability of cost-effective methods of integrated pest management as an alternative to

traditional pesticides; encouraging the use of biological pesticides and other alternatives; and working to achieve the goal that 75 percent of U.S. agricultural acreage will use some form of integrated pest management by the year 2000. Through a cooperative partnership, EPA is working with more than 40 pesticide users—including growers, utilities, and non-agricultural associations—to reduce environmental health risks from pesticides through laboratory research and improved management systems. Many of these partnerships are with growers of foods that children eat frequently, including potatoes, apples, citrus fruits, pears, peaches and tomatoes.

- **Getting Safer Pesticides on the Market Faster:** EPA has greatly accelerated its reregistration program for reevaluating and reducing risks associated with the older, often more toxic pesticides currently in use. Reevaluations are being done at a rate of 40 per year and are complete for 121 pesticide chemical cases, covering 65 percent of pesticide use in the U.S. In 1995, EPA significantly increased its registrations of new, "safer" or reduced risk pesticides. Twenty-four new active ingredients that are biopesticides or reduced-risk pesticide ingredients were approved for use, quadrupling the rate of approval of safer pesticides.

Protecting Infants from Microbial Contaminants in Drinking Water

Drinking water contaminants pose a particular risk to infants, who drink more fluids per pound of body weight—and whose immature systems may be more vulnerable to microbial contaminants such as *cryptosporidium*. To ensure that drinking water is safe for children, our immediate priority is control of microbial contaminants. The Clinton Administration has taken a number of steps to reduce health risks from microbial contaminants in drinking water systems across the nation:

- **Successfully proposed the first-ever state revolving fund to help achieve safer drinking water through funds that go straight to the states for loans to communities to upgrade and improve their drinking water treatment facilities;**

- **Targeted safety standard development and available resources to focus on contaminants in drinking water that pose the greatest threats to public health, such as microbial contaminants, including *cryptosporidium*, and on special populations such as the elderly, children, people with HIV/AIDS, and others who are most at risk from unsafe drinking water.** In August 1996, Congress passed new safe drinking water legislation which includes these principles based upon Administration recommendations.

- **Required that large water systems test source water—and, in some cases, treated water—for *cryptosporidium*.** Data from this 18-month test, along with information

collected by EPA, will help develop new safety rules and standards to protect further against *cryptosporidium* and other microbials; and

- **Launched the *Partnership for Safe Water* with the nation's water suppliers in March 1995, to achieve voluntary improvements in surface water filtration plants around the nation.** Filtration substantially reduces—but may not entirely eliminate—*cryptosporidium* contamination.

The Clinton Administration is also working to bring clean running water to the children and families who live in the 1.4 million rural households across this country. With its *Water 2000* initiative, the Administration is working with states, companies, banks, and non-profit groups to bring safe, affordable drinking water to America's most remote and needy corners by the end of the century.

Protecting Children from Dangerous Air Pollution

Air pollution has long been implicated in childhood deaths and hospitalizations, and reduced quality of life resulting from respiratory trauma and disease. A number of studies have associated childhood exposure to air pollution (ground level ozone, particulate matter, sulfur dioxide, nitrogen dioxide) with increases in school absences, decreased lung function, and increased incidences of bronchitis and asthma. According to the CDC, **asthma is the most chronic childhood illness in the U.S., affecting some 4.8 million children below the age of 18.** Between 1980 and 1993, asthma alone accounted for 3,850 deaths among people under 24 years of age. During the same period, the annual age-specific death rate from asthma increased 118%, and the hospitalization rate increased 28%. **Currently, more than 25% of the nation's children live in areas that don't meet national air quality standards.**

EPA's air pollution control efforts, taking place largely under the Clean Air Act, are focused on protecting children and others from the harmful effects of air pollution by improving air quality in communities. The Agency develops health protective standards that set safe limits for the most prevalent pollutants, and works with the states and sources to implement those standards.

In the last three years, the Clinton Administration has put new pollution control requirements in place that dramatically lower both toxic and smog causing emissions from a variety of sources, including chemical plants, refineries, trucks and buses, large landfills, and gasoline. **When combined with efforts at the state and local level, the result has been an unprecedented number of communities achieving cleaner air for their citizens to breathe as they come into compliance with the health based national air quality standards.**

In particular, successful implementation of the acid rain provisions of the Clean Air Act have helped reduce

substantially the particulate pollution implicated in recent studies as the cause of tens of thousands of premature deaths, as well as increases in hospitalization and illness in children. However, new scientific data on the effects of smog (both ozone and particulate matter) indicate the need to continue a strong focus on reducing exposure, especially childhood exposure, to these pollutants.

Other specific air pollutants such as mercury are particular threats to children because of damage to the nervous system that can occur during fetal and childhood development, among other concerns. Since 1993, the Administration has completed or begun developing requirements that would substantially reduce the emissions of mercury from the largest sources, including municipal waste combustors, medical waste incinerators, and hazardous waste incinerators. Over the next several years, the Agency also expects to complete and issue a study on mercury emissions from other sources, including coal-fired power plants.

The Administration has also issued new, more protective controls on air emissions from incinerators that burn hazardous waste—a process that can result in emissions of dioxin, a family of toxic chemicals that causes cancer in animals. The **99% reduction in dioxin emissions** achieved by these rules has special protective benefits for nursing infants, because dioxin and other bioaccumulative chemicals concentrate at higher levels in breast milk.

The Clinton Administration has maintained a strong commitment to the phasing out of stratospheric ozone depleting substances, the primary way to limit the increase in ultraviolet radiation that reaches the earth. This commitment has particular benefits for children, as the American Academy of Dermatology estimates that up to 80% of the lifetime exposure to potentially damaging ultraviolet radiation occurs before age of 18. The likelihood of developing malignant melanoma, the most deadly kind of skin cancer, is linked to the number of severe sunburns experienced in childhood. The Administration will continue to work with the international community to complete these phaseouts.

Protecting Children from Exposure to Carelessly Dumped Toxic Waste

The Clinton Administration has moved aggressively to address the threat to children from toxic and industrial waste sites in communities. To clean up toxic waste sites, the Clinton Administration has fundamentally redirected the Superfund toxic waste cleanup program to make it faster, fairer and more efficient. Cleanups have been dramatically accelerated: **in the past two years, nearly as many Superfund cleanups were completed in each of the past two years than in the program's entire first decade.** EPA and the Agency for Toxic Substance Disease Registry are collaborating on a children's health initiative that will further enhance the prevention of exposure to

hazardous substances released from Superfund sites. Together with businesses and communities, the Administration also is cleaning up the old industrial properties—the so-called “brownfields” that lie idle in the middle of urban neighborhoods—so that they can be redeveloped and returned to a revitalized community. The President has proposed a Brownfields Tax Incentive to help leverage more than \$10 billion in private cleanups at these sites.

The Clinton Administration also is **aggressively enforcing anti-pollution laws to avoid threats to the health and safety of our children from illegal dumping of toxic waste.** Not long ago in Florida, two children died because they inhaled a toxic chemical illegally dumped near an open lot where they were playing. The Clinton Administration has consolidated and toughened EPA's environmental enforcement program to improve compliance with environmental laws and to penalize polluters who break these laws.

Protecting Mothers and Infants from Contaminated Fish and Polluted Waters

Clean water is America's first line of defense in protecting our children's health. Americans need clean safe water for drinking and swimming. Polluted waters not only affect children when they swim in our lakes and streams, but also when they eat certain fish from these areas. PCBs and mercury continue to persist in the environment, often taken up by fish. Children whose mothers are exposed to high levels of PCBs or mercury when pregnant may develop learning disabilities and experience delayed development.

The Clinton Administration has funded actions in thousands of communities across the country to protect and restore our rivers and lakes and coastal areas. The Clinton Administration also has acted to protect the nation's largest body of fresh water with its **Great Lakes Water Quality Initiative.** This landmark effort establishes consistent, common-sense, cost-effective guidelines to protect the Great Lakes—which constitute 95% of the nation's fresh water and provide drinking water for 23 million Americans. By addressing the long-term toxic pollution that persists in the Great Lakes, this initiative is protecting children and families by decreasing their exposure to toxic pollutants that can pose particular health effects on reproduction, and children's development and immune systems.

In addition to working with the states to implement the Guidance, EPA has undertaken a number of specific activities to **reduce sources of PCB and mercury contamination.** EPA has brought together all of its programs to develop an integrated strategy, and has undertaken particular efforts in the Great Lakes and to control emissions jointly with our North American neighbors. For example, EPA has been working to encourage the voluntary phase out of electrical equipment with contain PCBs.

As a result, 12 major utility companies have reported that they have removed almost 90 percent of PCBs from their equipment.

C. Expanding Community Right-to-Know and Public Education to Provide Tools for Families to Make Informed Choices

The Clinton Administration has vigorously expanded the public's right-to-know about pollutants in their community. It is essential that families and communities have the tools with which to make informed decisions concerning their environment and any potential health risks they may face and that industry disclose its toxic pollution.

President Clinton has used his powers to expand and strengthen the Community Right-to-Know laws.

The Administration in a 1993 rulemaking nearly doubled the number of chemicals on which industry must report—adding 286 chemicals. These expansions were protected against Congressional efforts to undermine them when the President issued a Pollution Disclosure Executive Order in August 1995, requiring federal contractors to meet EPA's pollution disclosure standards. In June 1996, the Administration expanded the categories of facilities required to disclose information about toxic releases by 30 percent—bringing the total to more than 31,000 facilities that must report their toxic emissions to the public.

Further expansions to community right-to-know are being planned to provide families with more complete information about toxic chemicals being released in their neighborhoods—including expanding the type of information reported to provide critical information about industry's use of toxic chemicals.

In keeping with right-to-know, EPA has also expanded public access to Agency information—particularly Internet access. Armed with this information, parents can work to reduce and prevent pollution within their neighborhood and protect the health of their children and their community's children.

The Clinton Administration successfully proposed giving every American the right to know about tap water contaminants.

In August 1996, President Clinton signed new drinking water legislation that provides strengthened protections to ensure that American families have clean, safe tap water—improvements that the Clinton Administration has called for since 1993—including provisions to improve consumer information about local tap water. The new law gives Americans access to direct, simple information about local water quality, water sources, contaminants, and whether the water poses a risk to health.

The Clinton Administration successfully recommended new measures to expand consumers' right to know about pesticide health risks.

New food safety legislation, signed by President Clinton in August 1996, provides a comprehensive overhaul to strengthen the nation's food safety system that regulates pesticides on foods—reforms that the Clinton Administration has urged since 1993. To ensure that Americans have both comprehensive health protection and the tools they need to protect themselves and their families from pesticide risks, the new law includes special right-to-know provisions that provide more public information than ever before about risks from pesticides on foods.

The Clinton Administration has taken steps to protect children from lead-based paint poisoning.

The Clinton Administration has taken steps to protect children from lead-based paint poisoning by ensuring that parents have the right to know about lead-based paint hazards when they buy or rent a home. As part of the Administration's community right-to-know efforts, EPA and HUD recently took action to require sellers and landlords to disclose any known lead-based paint to home buyers, allowing them the option of conducting a lead hazard assessment. Approximately 64 million dwellings—all built before 1978—contain some lead-based paint, although much of it can be managed and maintained safely by using simple, low-cost common sense procedures. Particularly at risk are families renovating older structures and low-income families living in dilapidated housing. Parents can unknowingly poison their children when they disrupt lead-based painted surfaces during renovations, for example. This new effort will provide the tools to assist families in avoiding lead contamination.

The Clinton Administration is moving to prevent dangerous ultraviolet light overexposure through education and information.

Ultraviolet radiation overexposure poses significant risks to children because sunburns experienced in childhood are linked to the onset of skin cancer later in life. EPA, along with the National Weather Service and the Centers for Disease Control and Prevention instituted the federal UV Index program. The Index, which is expressed as a number between 0 and 10+, is made available daily in 58 cities nationwide. Developed in cooperation with medical organizations, broadcast meteorologists, and educators, the UV Index program is giving people the information they need to protect themselves and their children from overexposure to the sun.

The Clinton Administration is providing Americans with more information about contaminated fish.

EPA has developed a database of fish consumption advisories which is available to the public. The "National Listing of Fish Consumption Advisories" includes all available information describing state-issued fish consumption advisories in the United States. Included in the database is information on the geographic location of the advisory, species of fish of concern, chemicals, and segments of the population that are affected.

In the Great Lakes, levels of bioaccumulative toxic substances in fish are lower than in the early 1970s, however, the levels still justify issuance of public health advisories regarding fish and wildlife consumption. Specific advisories are also issued that apply to vulnerable consumers, such as children and women who anticipate bearing children. EPA, the Agency for Toxic Substances and Disease Registry, the Great Lakes states and EPA's other partners will continue to research the health implications and impacts of consuming contaminated Great Lakes fish.

EPA is providing information to help parents and teachers prevent environmental risks to children.

EPA has worked to educate parents and teachers about potential environmental risks and how to avoid them. EPA has produced a number of consumer information kits on preventing exposures around the home to lead, radon, and other indoor air contaminants and pesticides. EPA has directed a number of efforts toward schools, notably the *Tools for Schools* kit for protect the indoor air environment in schools and the *Integrated Pest Management in the Schools* kit for reducing the need for and the use of hazardous pesticides.

The Clinton Administration is seeking ideas to make informational labels on toxic products clearer and more protective.

EPA recently initiated a Consumer Labeling Initiative to expand the amount of hazard and health information on pesticide and related consumer product labels, analogous to the new food nutrition labels. EPA also is working on this effort with the Consumer Product Safety Commission and the Food and Drug Administration, and a number of leading industry groups and companies, as well as parents, health professionals, and others.

IV. EPA's National Agenda to Protect Children From Environmental Health Threats:

Recommended Actions

Children today face significant and unique threats from a range of environmental hazards. Governments and its partners have never faced a more complex challenge in protecting children, due to environmental health hazards that range from asthma-inducing air pollution and lead-based paint in older homes, to treatment-resistant microbes in drinking water and persistent industrial chemicals that may cause cancer or induce reproductive or developmental changes. As the nation rose to meet the challenge of uncontrolled industrial pollution over the past 25 years, so too should we now commit to meet this new and critical challenge for our future.

The array of environmental threats facing children today—and the uncertainties in the adequacy of current protections derived principally to protect adults but that may not do enough to protect our children—will require great care and commitment to address. **We recognize that children's environmental health issues are a top priority and must become a central focus of all of EPA's efforts to protect public health and the environment.**

We thus challenge our partners in the private sector, throughout the many levels of government, in Congress, in academia, and in interest groups to commit to adopt and help to implement **EPA's National Agenda to Protect Children's Health From Environmental Threats**. To meet this challenge, the Administration will:

1. As a national policy, ensure that all standards EPA sets are protective enough to address the potentially heightened risks faced by children—so as to prevent environmental health threats wherever possible—and that the most significant current standards be re-evaluated as we learn more. It is essential that our national pollution control standards protect our nation's most valuable future resources, placing children at the center of our protection efforts, and that these standards be grounded in the best scientific information available. The Clinton Administration will move aggressively to adopt this policy. In addition, EPA will select—with public input and scientific peer review—five of its most significant public health and environmental standards to re-issue on an expedited basis under this new policy.

2. Identify and expand scientific research opportunities on child-specific susceptibility and exposure to environmental pollutants so that the best information can be employed in developing protections for children. The Clinton Administration has worked conscientiously to ensure sound scientific underpinnings for its policy initiatives on protection children. It is critical that the best

science be applied to EPA's efforts to address these problems: that the research be of the absolute highest integrity and caliber; that it be on the cutting-edge in sophistication, allowing for consideration of the special mechanisms that affect children, and not just whether an effect to the general population occurs; and that it focus on the issues of greatest risk and concern. Because growth and development are the primary tasks of childhood, EPA's research agenda will increasingly focus on the effects on growth and development, including intellectual and physical development. EPA will also have a special focus on windows for particularly damaging exposure from environmental insults in utero and in developing infants and children.

The Administration will continue to prioritize its research to have a special focus on issues affecting children's health. From work on microbial drinking-water contaminants, to supporting research on urban air issues, to considering reproductive and developmental effects of endocrine disruptors, EPA's research priorities are an important part of its efforts to better protect children.

EPA will also coordinate these efforts with the resources of other federal science agencies and work to foster academic and private sector research in these areas. To this end, EPA will challenge Congress to work with it to establish and fund two National Centers of Excellence on Children's Environmental Health at established medical institutions to provide a critical concentration of these efforts.

3. Develop new policies to address cumulative and simultaneous exposures faced by children—analogous to the goal of EPA's Common Sense Initiative—not just the chemical-by-chemical approach of the past. Among the areas of greatest scientific and regulatory need is the ability to discern real world circumstances—including the fact that children are exposed to many chemicals all at once and through multiple routes. Just as EPA has worked to integrate its authorities and approaches to particular industrial sectors through the Common Sense Initiative, so too must it address children's health issues through a similar effort that deals with the complexities of our modern industrial world in a realistic fashion and places children at the center of those considerations.

4. The dramatic results of the current Community Right-to-Know law—yielding substantial decreases in the emissions of toxic pollutants and empowering communities to be effective partners in working with industry to protect their communities' health and safety—should be built upon. The Clinton Administration is already working with Congress to guarantee the public's right to know about contaminants in drinking water. In addition, the Administration will continue its work to expand the categories of industrial facilities that report this information and the types of information—including data on

chemical inputs and uses—that industry makes publicly available.

To enhance the usefulness of this information, it should be available for families to make informed choices about the products they use in their homes. The Clinton Administration will work with parents, scientists, the business community and the Congress to provide better information for families, so that they will have the tools to protect themselves. This proposal—the **Family Right to Know Initiative**—should provide common sense and cost-effective ways to meet the following principles:

- assist parents in assessing and avoiding unique environmental health risks to children from products and chemicals designed for child or home use;
- provide information on the whole range of environmental health risk from toxics, including cancer, developmental, endocrine and reproductive risks; and
- allow for informed consumer choices by providing improved information.

This initiative can be a major step forward in further protecting our children from environmental health risks. An informed family is best able to protect its child's health and future.

5. Call on American parents, teachers and community leaders to take personal responsibility for learning about the hazards that environmental problems pose to our children—and provide them with the information they need to help protect children from those risks at home, at school and at play. The Clinton Administration believes that an informed, involved local community will always do a better job of making environmental decisions than a distant bureaucracy—and never more so than when it comes to our children. Parents, teachers and community leaders can and should play a vital, day-to-day role in learning about the particular environmental hazards their children face in their own communities, and then use that knowledge to make more informed decisions that protect children and prevent environmental health problems.

Through its community right-to-know efforts, environmental education programs, and efforts to improve public access to information about environmental health hazards in the home, school and community, the Clinton Administration has greatly expanded the availability of information that parents, teachers and community leaders can use—in simple, everyday ways—to protect children's environmental health. This Agenda aims to take the next step: to make every effort to ensure that parents, teachers and community leaders take responsibility for learning about these risks, and to ensure that they have the information they need to take actions to protect children.

For example, through information already widely available from EPA, parents, teachers and community

leaders can: learn about the amount and type of releases of toxic chemicals in their zip code area, and work with manufacturing facilities to reduce the amount of local pollution; improve indoor-air quality and reduce pesticides risks in school buildings, where children spend most of their days; purchase less toxic pesticides for use in the yard and garden, and use techniques to reduce the use of those products; learn about and test for radon and lead paint hazards before buying or renting an older home; learn about the availability of blood tests to measure lead levels for children at risk; find out about fish advisories issued in their community to avoid eating contaminated fish; and much more.

To advance personal responsibility and understanding of this important issue, EPA will expand its efforts to reach parents, teachers and community leaders so that they are aware of the need to know—and their right to know—more about the environmental health hazards our children face. The Clinton Administration also will expand its efforts to ensure that more information is made available through toll-free numbers, Internet access, environmental education programs and other means so that adults can make careful and informed decisions that will protect our children in every local setting, from the backyard to the schoolroom to the dinner table.

6. Expand educational efforts in partnership with health and environmental professionals to identify, prevent, and reduce environmental health threats. As recognized by the Institute of Medicine and leading groups such as the Children's Environmental Health Network and the National Environmental Education and Training Founda-

tion, there is a pressing need to build routine awareness of environmental health threats into the training and medical practice of pediatric health professionals. EPA will work to expand its partnerships with these and other professional groups and other government agencies, particularly the CDC, to provide a continuing forum for exchange on these issues and to encourage development of appropriate curriculum and training materials essential for effective prevention of children's environmental health threats.

7. Commit to provide the necessary funding to address children's environmental health issues as a top priority among relative health risks, as started in the President's FY '97 Budget. The purest of intentions—or the most cynical of commitments based solely on appearances—are equally meaningless without the commitment of the resources that will be necessary to accomplish this ambitious Agenda. The Clinton Administration challenges Congress to meet this need by providing sufficient funding to EPA to carry out this Agenda. Our nation's commitment to this challenge can be measured only by the dedication of critical resources to achieve the goals outlined in EPA's Agenda. As demonstrated by the President's FY97 Budget, substantial resources dedicated to these efforts are critical. EPA's future budget submissions will contain specific line items for many of the elements of this Agenda.

EPA's **National Agenda to Protect Children's Health from Environmental Threats** will ensure that children receive the protection they need and deserve, and help our nation fulfill its obligation to protect future generations.

