

Special Report

National Environmental Health Association Position on Children's Environmental Health

Adopted July 2, 1997

Editor's note:

One of NEHA's responsibilities is to speak up on issues of concern to our members, and one way of doing this involves adopting positions. At NEHA's recent Annual Educational Conference in Washington, D.C., NEHA's Council of Delegates (upon recommendation of your board of directors) voted to officially adopt positions on Children's Environmental Health, Global Climate Change and Endocrine Disrupters.

In this issue, we present NEHA's Position on Children's Environmental Health. Papers on the other two positions mentioned above will appear in subsequent issues.

By publishing these positions in your journal, we strive to keep you (the member) informed about where we stand as your association on critical issues to environmental health. Furthermore, if you and/or your colleagues have the opportunity to advance any of these positions, we encourage you to do so, and hope that these papers are of both use and interest to you.

Background and General Discussion

"Protecting our environment is critical to protecting our children's health."

—Carol Browner (1)

In 1988, the Agency for Toxic Substances and Disease Registry (ATSDR) published *The Nature and Extent of Lead Poisoning in Children in the United States: A Report to Congress* (2). This document, which discussed the potential for lead contamination to disproportionately affect the health of our nation's children, represented one of the earliest efforts to identify environmental health threats to children and call for their reduction. With the institution of ATSDR's Child Health Initiative in April 1996 and the publication of the U.S. Environmental Protection Agency's (U.S. EPA's) *Environmental Health Threats to Children* in September 1996, the nation's research and policy communities began to focus on children as specific

susceptible populations for a multitude of environmental insults (3).

Purpose

The purpose of this position paper is to review current information on the status of children's environmental health, with particular emphasis on the implications for environmental and public health. Further, this paper reviews and provides support for the National Agenda to Protect Children's Health from Environmental Threats. It is intended to be used as a basis from which environmental and public health practitioners and colleagues in related fields can initiate discussions of children's environmental health with policy makers at all levels—local, state, national, and worldwide.

Problem Statement

Children are different; that is, they are not "little adults." Children one through five years of age eat three to four (or more) times as much food per pound of body weight as the average

American adult. The air intake of a resting infant is twice that of an adult (2). In their first six months of life, children drink seven times as much water pound per pound as the average adult (4). Because children eat more calories, drink more water, and breathe more air per pound of body weight than do adults, they are exposed to more pollutants per pound of body weight (3).

Children's systems are still developing; therefore, they are more susceptible to environmental threats. Exposure to toxic substances can affect growth of fetuses, infants, and children. In addition, such exposures may impair development of children's nervous systems and cause abnormal development because of hormonal or immunologic effects. Finally, infant immune systems are less well developed; thus, they may be less able than healthy adults to recover rapidly from exposure to microbes such as cryptosporidium (3).

Increasingly, statistics are being reported that point out the dangers confronting children:

- Ten million children under 12 years of age live within four miles of a hazardous waste dump (1).
- An estimated 50 percent of all the pesticides a human being ingests in a lifetime are ingested in the first five years of life (5). Each year, at least 100,000 children accidentally ingest pesticides (1). Each year, U.S. EPA receives an average of 24,000 calls to the Pesticide Hotline, primarily from parents concerned about dietary or household risks to children from pesticides (3). In addition, pesticides can pass into breast milk, thus placing many infants at increased risk of exposure not only to the pesticide but to its metabolites.
- U.S. EPA estimated that in 1995, 30 million Americans drank water from systems that were in violation of public health standards. Almost 13 million Americans are served by water systems that may not adequately protect against microbial contaminants. Contaminated surface waters also place children at risk. From January to September 1994, some 1,500 fish advisories were posted; 73 percent of the advisories were for mercury contamination, which poses a particular threat to a child's developing nervous system (3).
- Although there has been an 80 percent reduction in blood lead levels in the past 20 years because of the ban on leaded gasoline, over one million U.S. children under the age of five years still have elevated blood lead levels (1). As many as 1.7 to 2.0 million children are at risk for lead poisoning (3,4). In addition, an estimated 874,000 U.S. children have brain damage caused by lead exposure (6).
- Asthma is the most chronic childhood illness in the United States, affecting some 4.8 million children below the age of 18 years. Between 1980 and 1993, asthma alone accounted for 3,850 deaths among people under 24 years of age. Asthma deaths increased in children and young people by 118 percent between 1980 and 1993. In addition, more than 25 percent of the nation's children live in areas that do not meet national air quality standards. Inadequate air quality can cause or contribute to respiratory illnesses, including asthma (3). Asthma has become the leading cause of hospital admissions of children to hospitals and has increased by 28 percent between 1980 and 1993 (4,3).
- Child labor laws are nearly 60 years old (created as a part of the Fair Labor Standards Act of 1938), yet children at work-places all across the country are being killed and injured at rates much higher than are their adult counterparts. Child

labor violations have been steadily increasing in the last 15 years. In July 1995, NIOSH reported that in 1992, 64,000 adolescents 16 and 17 years of age required emergency treatment for work-related injuries. Approximately 70 adolescents died from work-related injuries during the same period. Yet 41 percent of these deaths occurred during work prohibited by federal child labor laws (7).

- "Leukemia and brain cancer, the two most common forms of cancer among children, are on the increase. Although the death rates from childhood cancer are down because of better treatment, the incidence of acute lymphocytic leukemia, the most common form of childhood cancer, has increased by over 20 percent over the past two decades. It is not known whether toxic environmental exposures are responsible for the increasing frequency of childhood cancer" (4).
- Eighty percent of a person's lifetime exposure to potentially damaging ultraviolet light occurs before the age of 18 years. Ultraviolet rays pose a threat to children because severe sunburns experienced in childhood increase the likelihood that an individual will develop 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 (3).

Children have more future years of life ahead of them than do most adults; therefore, they have more time to develop any chronic diseases that may be triggered by early environmental exposures. Many diseases that are triggered by exposure to volatile organic compounds, as well as leukemia caused by benzene, breast cancer caused by certain endocrine disrupters such as DDT, and possibly some chronic neurologic diseases such as Parkinson's disease and Alzheimer's disease are now thought to be the product of multi-stage processes that require many years to evolve. Toxic exposures sustained in childhood appear more likely to lead to these diseases than the same exposures encountered during adulthood (4).

It should also be noted that children's behavior exposes them to different environmental hazards than adults. Children may magnify their exposures to toxicants in the environment by (1) typical hand-to-mouth behavior, which increases ingestion of any toxicants in dust or soil, and (2) play activities close to the ground, which also increase their exposure to toxicants in dust and soil as well as to any toxicants that form low-lying layers in

the air, such as certain pesticide vapors (2).

Recommended Action

The National Environmental Health Association (NEHA) fully endorses and supports both the Child Health Initiative and the National Agenda to Protect Children's Health from Environmental Threats (2,3). The agenda includes the following points:

1. As a national policy, ensure that all standards set by U.S. EPA 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—analogue to the goal of U.S. 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 of their children.
5. Provide parents with basic information so that 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.
7. Commit to providing the necessary funding to address children's environmental health issues as a top priority among relative health risks, as stated in the President's Fiscal Year 1997 Budget.

Method of Implementation

Upon adoption, NEHA should disseminate this paper as widely as possible by release to the membership, publication in the *Journal of Environmental Health*, provision of copies of this paper to affiliates to share with their members, and provision of copies of this paper to similar professional associations for their review. Affiliates and members should be encouraged to provide comments to legislators based on the information contained herein, or to provide a copy of this document as augmentation to their own comments.

Fiscal Impact

The committee foresees the only fiscal impact on NEHA with the adoption of this paper to be the cost of making and mailing copies. The fiscal impact of the problem will be felt mainly by the parents of children exposed to environmental threats. In addition, state and local environmental and public health programs will be affected by implementation of childhood exposure hazard prevention programs.

(This paper was prepared by Laura Thacker, R.S., Director, Racine Health Department, Racine, Wisconsin; and Ginger L. Gist, Ph.D., D.A.A.S., Senior Environmental Health Scientist, Agency for Toxic Substances and Disease Registry)

References

1. Browner, C. (February 21, 1997), Address to the Children's Environmental Health Network Conference, Washington, D.C.
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3. U.S. EPA (1996), *Environmental Health Threats to Children*, Washington, D.C.: Office of the Administrator.
4. Landrigan, P.J. (July 6, 1995), Report Card Shows Need to Better Protect Our Children From Health Threats in the Environment," press conference.
5. National Research Council, Committee on Pesticides in the Diet of Infants and Children (1993), "Pesticides in the Diets of Infants and Children," Washington, D.C.: National Academy Press.
6. Needleman, H. (February 21, 1997), Address to the Children's Environmental Health Network Conference, Washington, D.C.
7. Smith, S.L. (1995), "In Harm's Way: Child Labor in the 90s," *Occupational Hazards*, November:23-26.

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KEYNOTE SPEAKER

Carol Browner, EPA Administrator (subject to availability)

SESSION SPEAKERS

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