



# Overview of EPA's Work on Children's Environmental Health

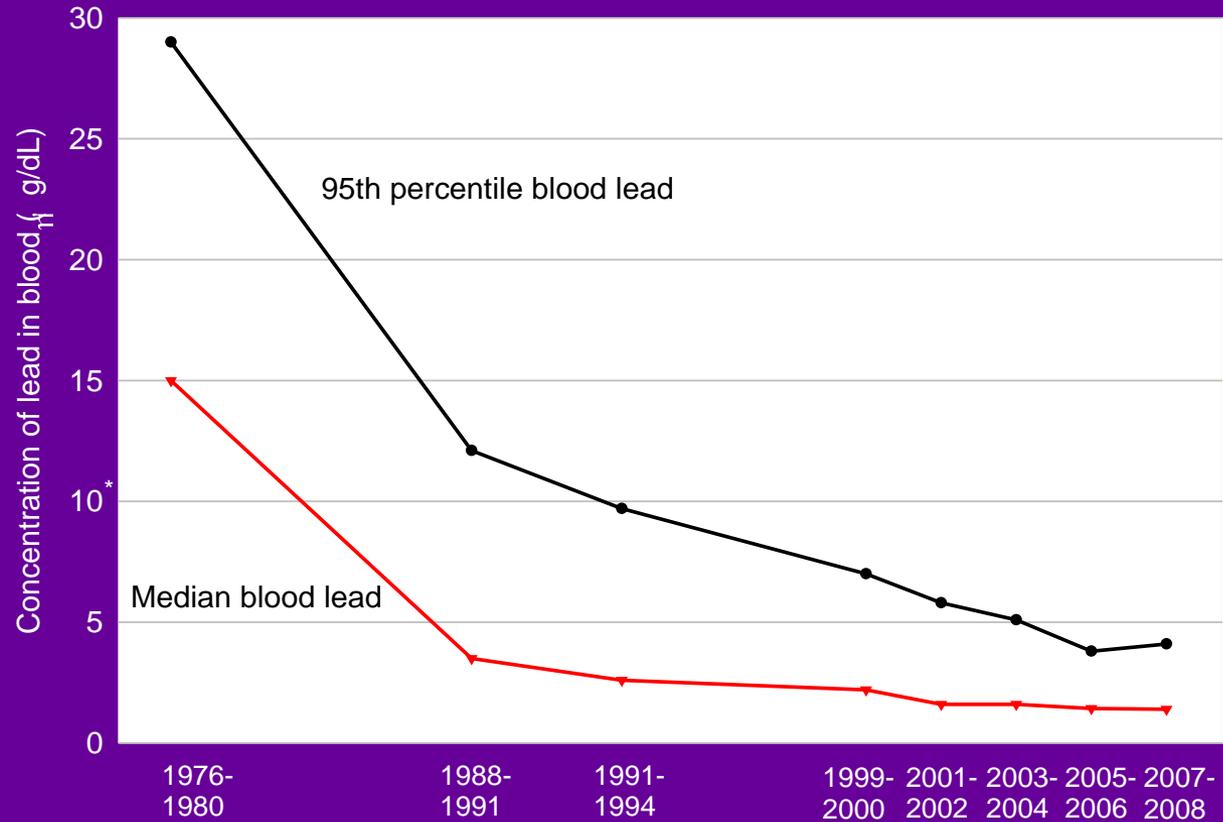
National Advisory Council for Environmental Policy & Technology  
January 20, 2011





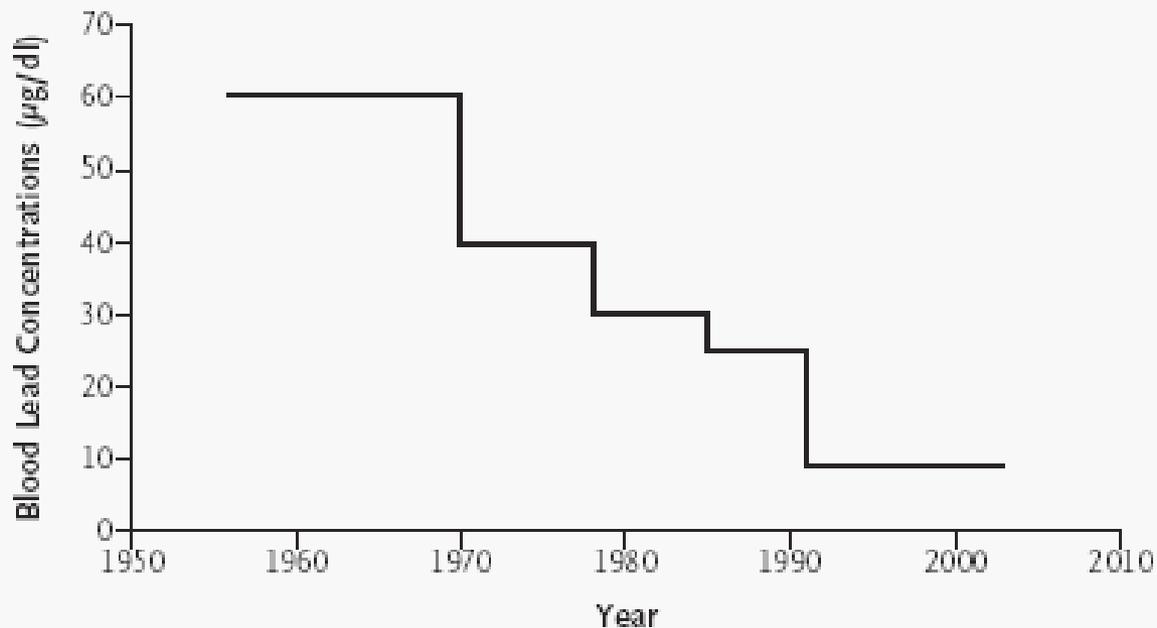
Indicator B1

### Blood lead in children ages 1 to 5 years



DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey





**Blood Lead Concentrations Considered to Be Elevated by the Centers for Disease Control and Prevention.**

To convert the values for blood lead concentrations to micromoles per liter, multiply by 0.0483. Data are from the Centers for Disease Control and Prevention, 1991.<sup>1</sup>

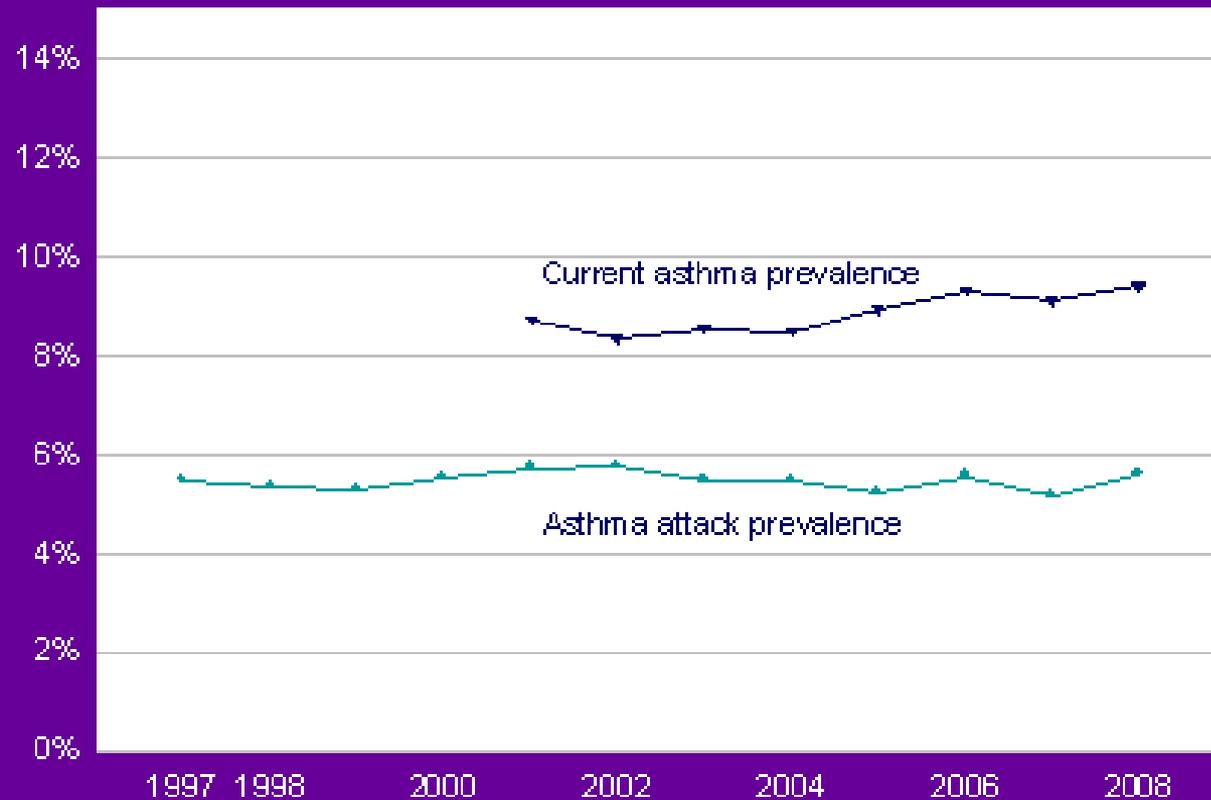
Binder S, Falk H. Strategic plan for the elimination of childhood lead poisoning. Atlanta: Centers for Disease Control, 1991.





### Indicator D1

## Percentage of children ages 0 to 17 years with asthma



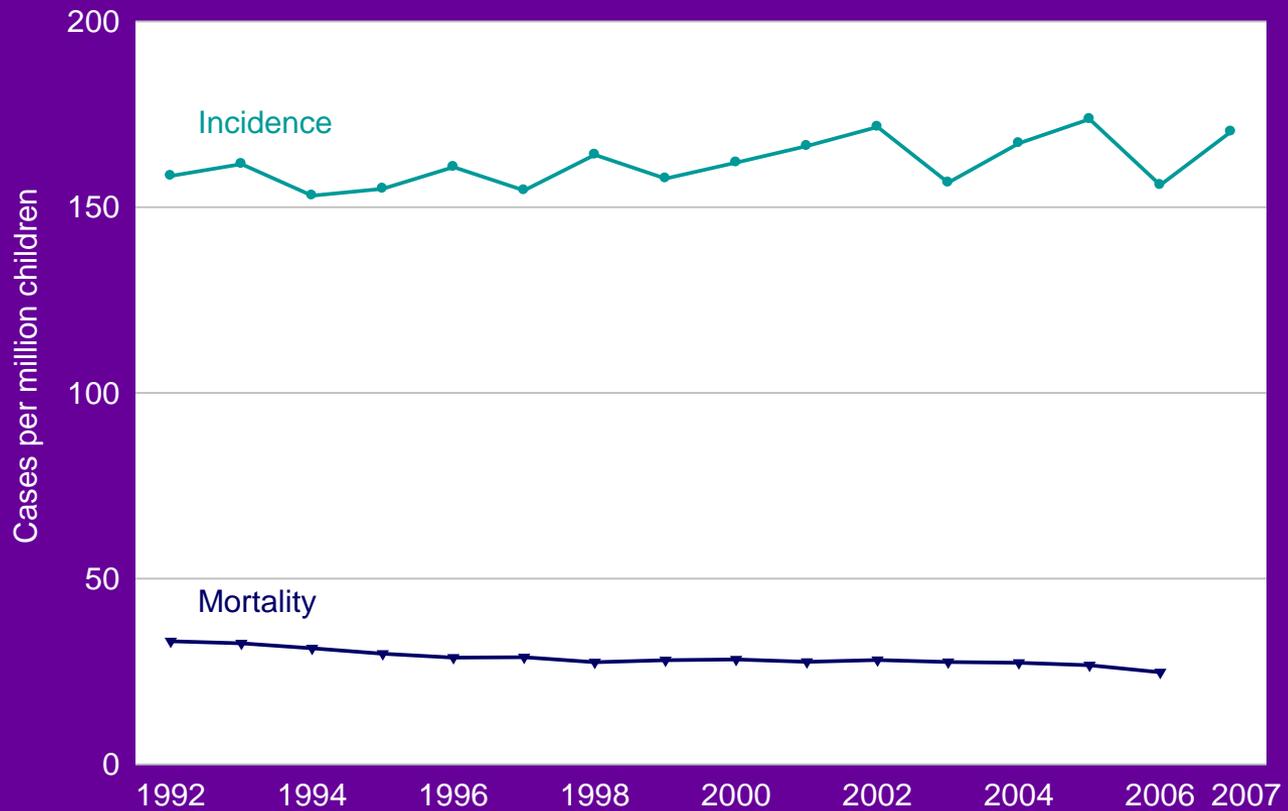
DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey





Indicator D5

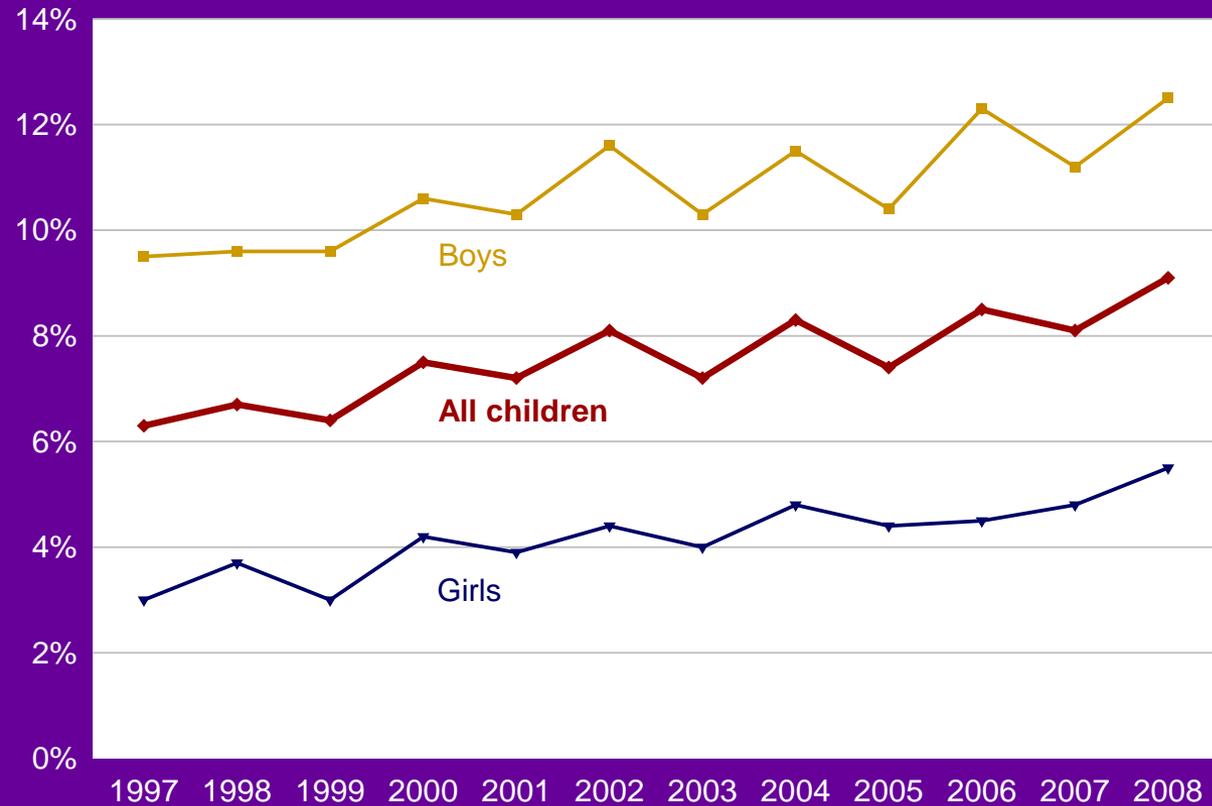
### Cancer incidence and mortality for children under 20 years



DATA: National Cancer Institute, Surveillance, Epidemiology and End Results Program

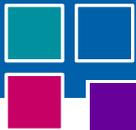


## Percentage of children ages 5 to 17 years reported to have attention-deficit/hyperactivity disorder, by gender



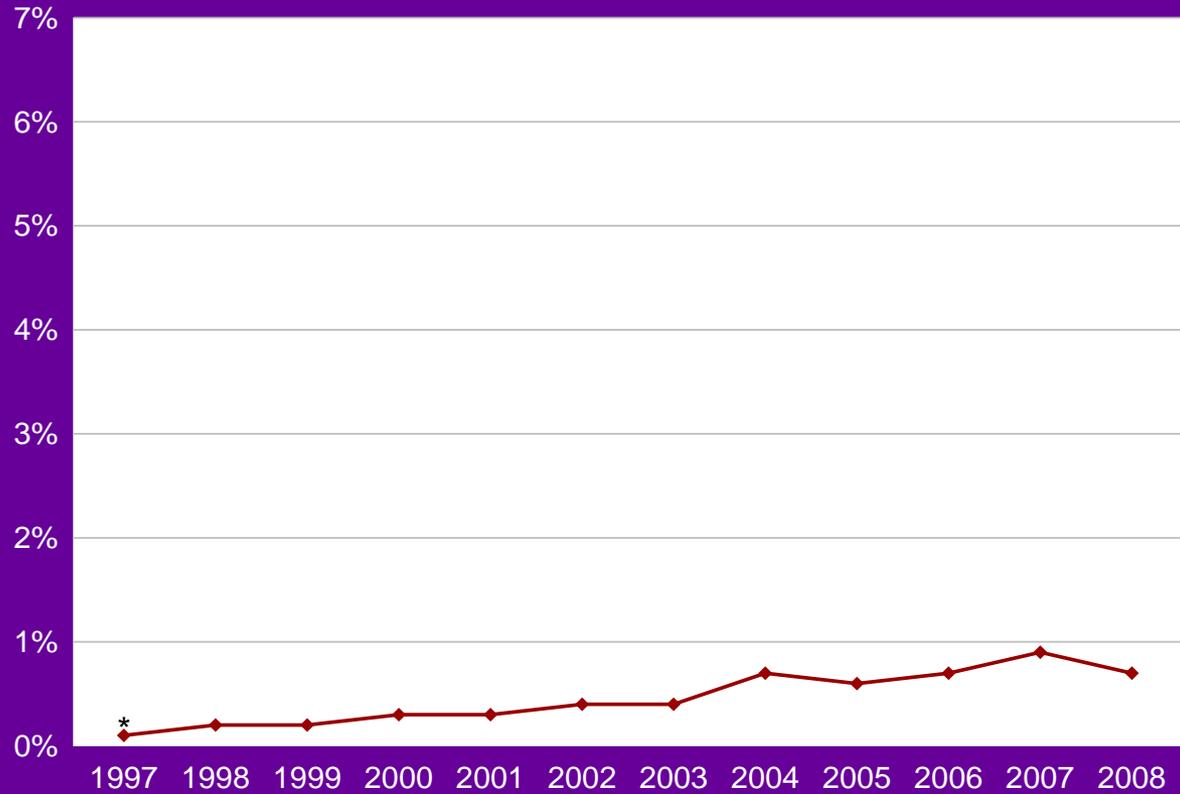
SOURCE: U.S. EPA. America's Children and the Environment.  
[www.epa.gov/envirohealth/children](http://www.epa.gov/envirohealth/children)

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey



Indicator ND3

### Percentage of children ages 5 to 17 years reported to have autism



SOURCE: U.S. EPA. America's Children and the Environment.  
[www.epa.gov/envirohealth/children](http://www.epa.gov/envirohealth/children)

DATA: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey





## Administrator Jackson's 2/4/10 Memo: EPA's Leadership in Children's Environmental Health

- A. Use the best science to ensure that regulations and other agency actions protect children's environmental health
- B. Establishing standards, policies, and guidance to help eliminate harmful prenatal and childhood exposures to pesticides and other toxic chemicals
- C. Coordinate community-based programs to help eliminate threats to children's health and to measure progress





## Children's Health Risk Assessment Guidance Documents & Methodologies

- Guidelines for Developmental Toxicity Risk Assessment (1991)
- Guidelines for Reproductive Toxicity Risk Assessment (1996)
- Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005)
- Guidance on Selecting Age Groups for Monitoring and Assessing Childhood Exposures to Contaminants (2005)
- A Framework for Assessing Risks of Environmental Exposures to Children (2006)
- Child-Specific Exposure Factors Handbook (2008)

See [www.epa.gov/risk](http://www.epa.gov/risk) for links



# Regulations to Protect Children's Health

- **NO<sub>2</sub>**: Strengthened the health-based National Ambient Air Quality Standard for nitrogen dioxide
  - The new 1 hour NO<sub>2</sub> standard of 100 parts per billion will protect the health of sensitive populations – including people with asthma, children and the elderly
- **SO<sub>2</sub>**: Set new standards for short term exposures to sulfur dioxide, associated with power plant emissions
  - EPA revised the primary SO<sub>2</sub> standard by establishing a new 1-hour standard at a level of 75 parts per billion
- Proposed the Clean Air Transport Rule that will require power plants in the eastern half of the country to reduce both pollutants
- Additionally, we're working on a number of other air pollution regulations:
  - standards for power plants and industrial boilers for hazardous air pollutants like mercury, cadmium and hydrogen chloride
  - national standards for ozone and particulate matter





## Future Risk Assessment Needs

1. Continued development of high throughput toxicity testing assays that utilize human cell lines to prioritize and predict early life susceptibility to carcinogens and chemical mixtures
2. Data, including biomonitoring of children <6 yrs old, to support improved estimates of exposure to infants and toddlers
3. Better methods to develop and assess epidemiology data since children will never ethically be used in direct dosing studies
4. Understanding lifestage differences in metabolism and other TK parameters
5. Understanding why asthma, neurodevelopmental disorders and other health outcomes may differ for children in socioeconomically disadvantaged communities
6. Improved childhood cancer and neurological disease surveillance linking data from longitudinal studies



# 1996 - Food Quality Protection Act

PUBLIC LAW 104-170 - AUG. 3, 1996 (1516-1519)



When setting a tolerance, the Administrator shall assess the risk of the pesticide chemical residue based on:

- I. **consumption patterns among infants and children** that are likely to result in disproportionately high consumption of foods containing the pesticide among infants and children in comparison to the general population;
- II. the **special susceptibility of infants and children** to pesticide residues, including: **neurological differences between infants and children and adults**; and effects of *in utero* exposure to the pesticide; and
- III. **cumulative effects on infants and children** of pesticide residues and other substances that have a common *mechanism* of toxicity; and

The Administrator shall ensure that there is a **reasonable certainty that no harm will result to infants and children from aggregate exposure to the pesticide chemical residue**; and shall publish a specific determination regarding the safety of the pesticide chemical residue for infants and children.



# Essential Principles for Reform of Chemicals Management Legislation



1. Chemicals Should be Reviewed Against Safety Standards that are Based on Sound Science and Reflect Risk-based Criteria Protective of Human Health and the Environment
2. Manufacturers Should Provide EPA with the Necessary Information to Conclude That New and Existing Chemicals are Safe and Do Not Endanger Public Health or the Environment
3. Risk Management Decisions Should Take into Account Sensitive Subpopulations, Cost, Availability of Substitutes and Other Relevant Considerations
4. Manufacturers and EPA Should Assess and Act on Priority Chemicals, Both Existing and New, in a Timely Manner
5. Green Chemistry Should Be Encouraged and Provisions Assuring Transparency and Public Access to Information Should Be Strengthened
6. EPA Should Be Given a Sustained Source of Funding for Implementation





## Healthy Homes

- Interagency Healthy Homes Working Group
  - Marketing sub-group is developing an outreach strategy to the public on creating healthy home environments
- EPA is developing voluntary Healthy Indoor Environment Protocols for Home Energy Upgrades
  - Protocols are being developed in conjunction with the Department of Energy Workforce Guidelines for Home Energy Upgrades
- Training offered through National Center for Healthy Housing
  - 5-year contract to offer 26 trainings each year
  - Including training on Bed Bugs, IPM, Health and Energy and Healthy Homes





## Healthy Schools - TSCA Title V: Healthy High Performance Schools

- Voluntary guidelines for siting of school facilities that account for—
  - the special vulnerability of children to hazardous substances or pollution exposures in any case in which the potential for contamination at a potential school site exists
  - modes of transportation available to students and staff
  - the efficient use of energy
  - the potential use of a school at the site as an emergency shelter
- Voluntary guidelines for state school environmental health programs that include—
  - environmental problems, contaminants, hazardous substances, pollutant emissions
  - natural day lighting, ventilation, heating and cooling, acoustics
  - moisture control, mold, maintenance, cleaning, pest control
  - other issues relating to the health, comfort, productivity, and performance of occupants of the school facilities

## Health Care Providers - Pediatric Environmental Health Specialty Units

- EPA and ATSDR co-fund 10 Pediatric Environmental Health Specialty Units (PEHSUs) across the country
- These PEHSUs form a network that is capable of responding to requests for information throughout North America and offering advice on prevention, diagnosis, management, and treatment of environmentally-related health effects in children
- PEHSUs work with health care professionals, parents, schools and community groups, and others to provide information on protecting children from environmental hazards
- At [www.PEHSU.net](http://www.PEHSU.net) there are many sources of information on specific threats to children's health from the environment, including links to resources for health professionals, fact sheets for health professionals and parents, and trainings





# Children's Health Protection Advisory Committee

- CHPAC is a federal advisory committee with legal authority under the Federal Advisory Committee Act
- 27 volunteers from communities, academia, industry, NGOs, state and local government
- Committee includes experts in children's environmental health from clinical, research, regulatory and advocacy groups
- Committee advises EPA Administrator on regulations, policies, programs, communication, and specific issues related to health of children





## 2009 Advice on Chemicals Management

- Improve evaluation of risks to fetuses, infants, children and adolescents
- Take action to protect children when warranted
- Use biomonitoring and modeling that evaluate exposures through unique infant and child pathways
- Obtain adequate chemical use information from chemical manufacturers



## 2009 Advice on Health Disparities

- Partner with federal and state agencies and others to address environmental health issues that disproportionately affect low-income and minority populations
- Disparities include asthma prevalence, proximity to toxic chemicals, lead and pesticide exposures
- Address the health concerns of children in inner city, rural, Native American, subsistence fisher and farm worker communities



## 2010 Advice on Draft School Siting Guidelines

- Support approaches to school siting decisions that lead to health benefits to both the school population and larger community
- Provide regional and national EPA technical support for school siting activities
- Develop additional guidelines in related areas including construction materials and operations/maintenance procedures used in new and existing schools
- Extend the school siting guidelines to additional learning environments, such as child care centers, preschools, and charter and private schools
- Establish effective coordination with multiple federal agencies





## 2010 -2011 Workgroups

- America's Children and the Environment – providing review and final comment on latest version of the indicators report
- Indoor Environments – providing insight on the quality of places where children live and learn and play.
- Prenatal Exposures – specific look at the earliest environments of children and the vulnerabilities and opportunities for EPA leadership

