



Ensuring a Healthy Environment for All Children: The Need for Research, Policy, and Urgent Action

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August 24, 2016

Protecting Our Children

“There can be no keener revelation of a society’s soul than the way in which it treats its children”

- Nelson Mandela, former President of South Africa

- “Children are our most valuable resource”

- Herbert Hoover, 31st US President

- “The public health community’s voice has always been vital; with climate change, our obligation to speak for children’s health and to act to protect it is as clear as ever.”

- Gina McCarthy, EPA Administrator



Our Environment





Our Environment



Our Environment



Our Environment



Our Environment



Children's Environmental Health Network

- ▶ U.S. National non-profit organization

Our Mission:

To protect the developing child from environmental hazards and to promote a healthy environment

Our Goals:

- ▶ Promote peer-reviewed research
- ▶ Educate and Train
- ▶ Promote sound child protective policies
- ▶ Better identify opportunities to improve children's environmental health using a cross-sector approach





Why Focus on Children?

Children are not just “little adults”



- They eat more food, drink more water, and breathe more air than adults
- They crawl on the floor and put things they pick up in their mouths
- All of their systems -- nervous, reproductive, hormonal -- are still growing and developing
- They cannot metabolize toxicants as well as adults



Brief History

- ▶ 1980's - More focus on environmental health impacts to children
 - ▶ Creation of the Childhood Lead Poisoning Prevention Program - CDC
 - ▶ Kids in the Environment Project was founded
- ▶ 1990's - Growth of a Movement!
 - ▶ Children's Environmental Health Network (CEHN) founded
 - ▶ Key partnerships - AAP, WE ACT, Inc., NRDC,
 - ▶ NRDC - Published "Intolerable Risk: Pesticides in Our Children's Food"
 - ▶ National Research Council Study - "Pesticides in the Diets of Infants and Children" confirmed NRDC report
- ▶ Regulations on pesticides in foods do not adequately protect children!





24 Years of Protecting Children's Health

- ▶ Advances in research, but much more needed
- ▶ A few policy successes, but not much specific to protecting children
- ▶ Increased resources and partners, but not coordinated
- ▶ 85,000 known synthetic chemicals
- ▶ Chemicals commonly used are **not adequately tested** for their impact on human health
- ▶ Bottom Line: Children are still not as protected as they need to be!





How Are Children Exposed?

- ▶ **Ingestion** (what we eat and drink)
 - ▶ Food & beverages
 - ▶ Soil & dust
- ▶ **Inhalation** (what we breathe)
- ▶ **Skin absorption, Eye contact**
- ▶ **Pre-natal exposures**



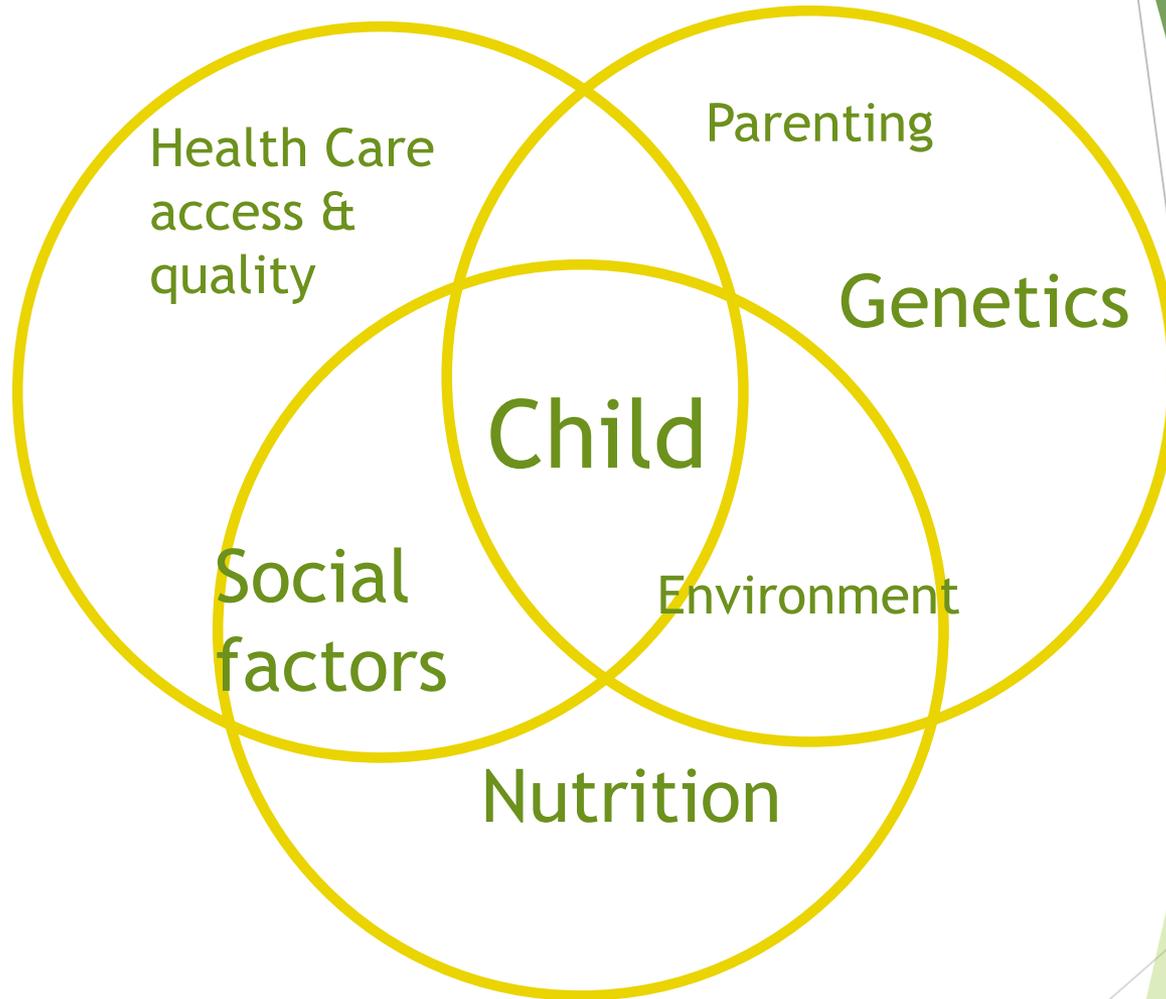


Today's Emerging Pediatric Health Challenges

- ▶ Early onset
- ▶ Chronic Illnesses
- ▶ Possibly first generation to see a shorter life expectancy than parents due to their poor health status



Olshansky, S. J., Passaro, D. J., Hershow, R. C., et al. (2005). A potential decline in life expectancy in the United States in the 21st century. *N Engl J Med*, 352, 1138-1145.





Is The Environment To Blame?

Today's health concerns are multi-factorial

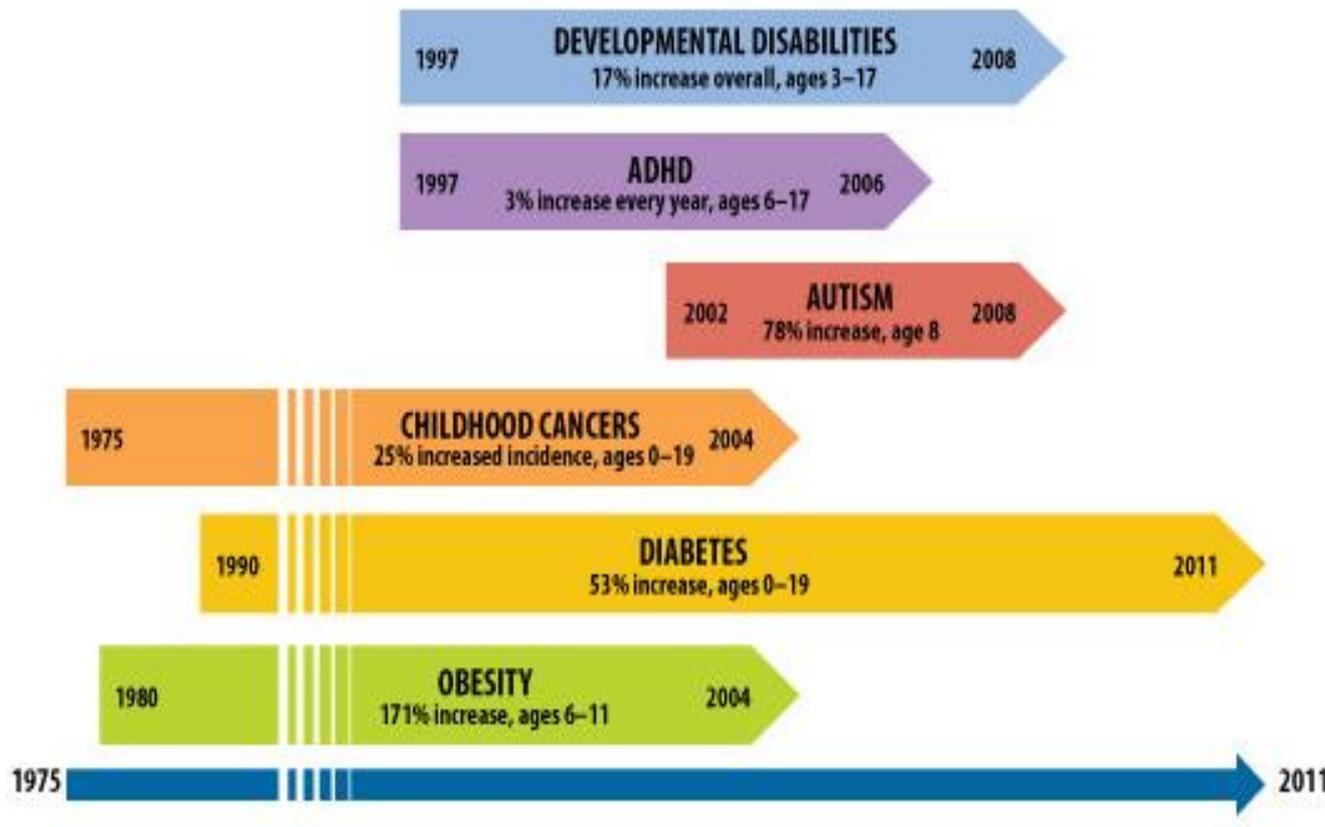
A child's environment is one of factors that shapes his/her health, development and future

- ▶ Is it the cause of all woes? No
- ▶ Does it play a role? Yes



Increase in Environmental Health Concerns

Children's Health Harms on the Rise, 1975–2011

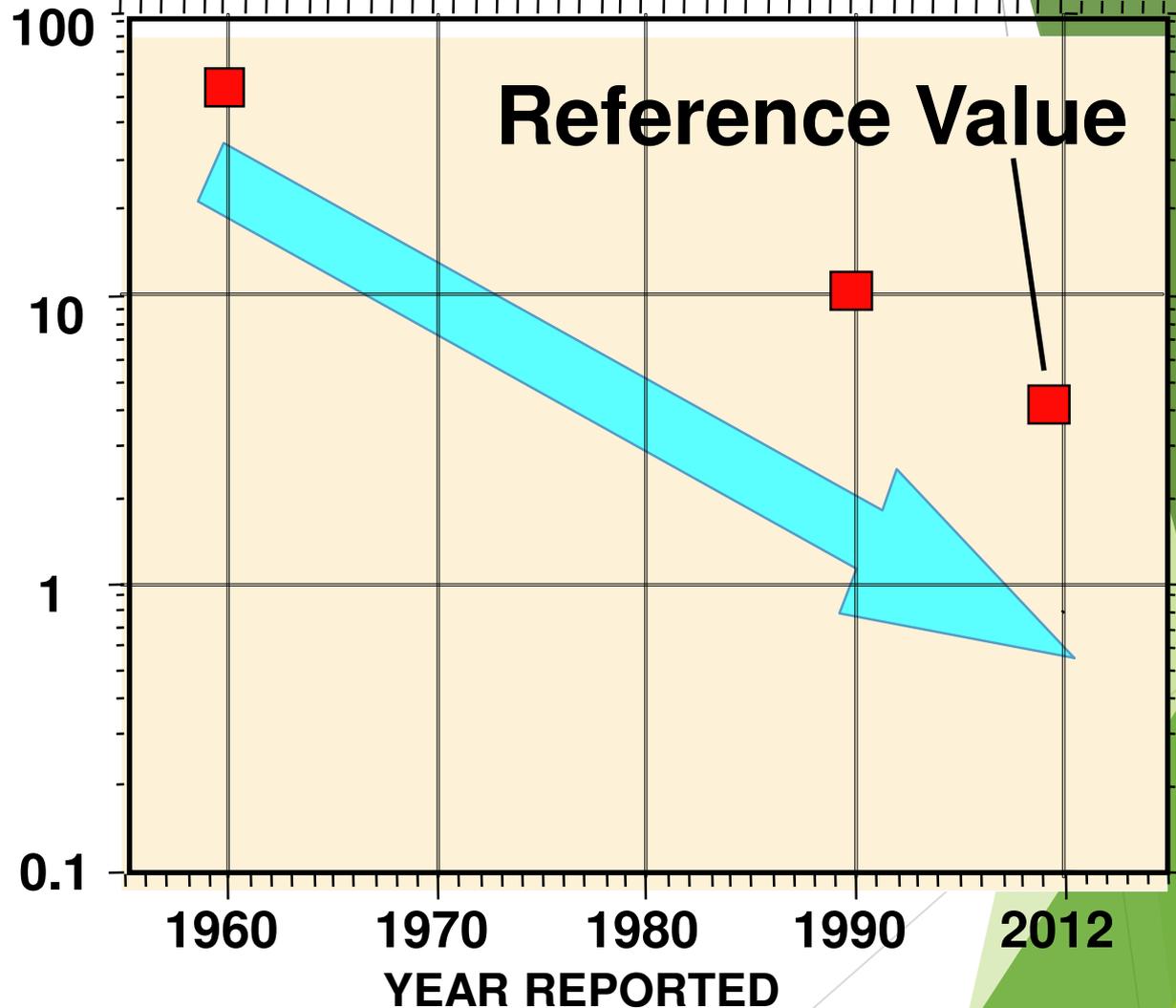


Children's Environmental Health



- ▶ Learning disabilities have increased 191% between 1977 and 1994
- ▶ Autism:
 - ▶ Today: 1 in 68 (2014)
 - ▶ Up from 1 in 700 children
 - ▶ 30-40% of that is better diagnosis

DECLINING THRESHOLD OF HARM - LEAD



Note: Exposures expressed in micrograms/deciliter (blood lead)

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Today's Emerging Pediatric Health Challenges

Lead

- ▶ ~500,000 children aged 1-5 years with blood lead levels above the reference value of 5mcg/dL

Asthma

- ▶ In 2009, >10% school-age children had asthma

Obesity

- ▶ One quarter of 2-5 year olds and one third of school-aged children/adolescents are overweight or obese

Centers for Disease Control and Prevention. Childhood Lead Poisoning. Retrieved from <http://ephtracking.cdc.gov/showChildhoodLeadPoisoning.action>

Akinbami, L. J., Moorman, J. E., Bailey, C et al. (2012). *Trends in Asthma Prevalence, Health Care Use, and Mortality in the United States, 2001–2010*. Retrieved from www.cdc.gov/nchs/data/databriefs/db94.pdf.

Centers for Disease Control and Prevention. Overweight and Obesity. Retrieved from <http://www.cdc.gov/obesity/data/childhood.html>

Centers for Disease Control and Prevention. *Asthma's Impact on the Nation*. May, 2012. Retrieved from www.cdc.gov/asthma/impacts_nation/default.htm.



Asthma

- ▶ Study conducted (also applied to lead) to determine the percentage of a particular disease category that would be eliminated if environmental risk factors were reduced to their lowest feasible levels.
 - ▶ Called the EAF, or environmentally attributable fraction
- ▶ 30% EAF for pediatric asthma.
- ▶ Environmentally attributable costs ranging from \$.7billion - \$2.3 billion.
- ▶ Air pollution study showed a increase monthly of 1 unit ($\mu\text{g}/\text{m}^3$) $\text{PM}_{2.5}$ lead to a \$123 increase in charge to a patient hospitalized, and a \$47 increase in costs.





Trends in Childhood Asthma Rates

- ▶ In 2009, over 10% of school-aged children had asthma
- ▶ 3rd leading cause of hospitalization of children under 15
- ▶ One of the leading causes of school absenteeism: in 2008, asthma accounted for an estimated 14.4 million lost school days in children with an asthma attack in the previous year
- ▶ Racial disparities seen in asthma rates as well: non-Hispanic black children were more likely to be diagnosed (22%) and to still have asthma (16%) than Hispanic (14% and 9%) or non-Hispanic white children (12% and 8%)



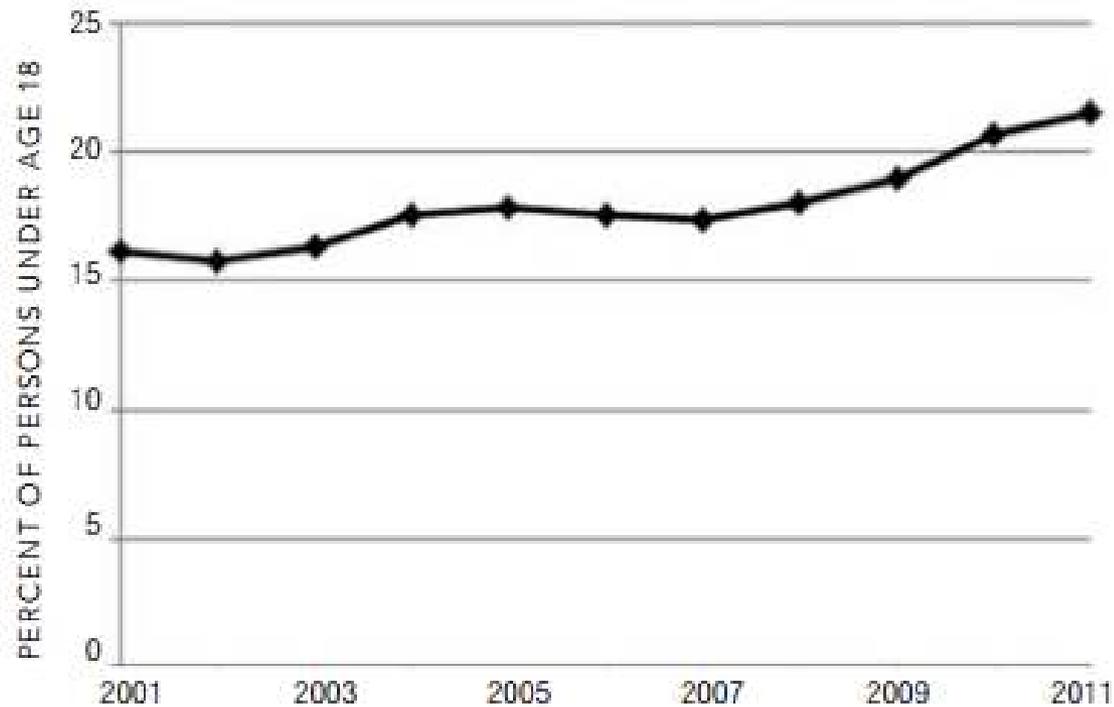


Childhood Cancer

- ▶ The leading cause of disease-related childhood death in the United States (EPA, ACS, 2012).
- ▶ Leukemia, cancer of the bone marrow and blood, is the most common of childhood cancers, causing more deaths than any other form of cancer among those under 20 years of age (CDC, 2012).
- ▶ Among children ages 19 years or younger, cancer incidence rates increased 0.6 percent per year from 2004 through 2008 (NCI, 2012).



Children in Poverty Since 2001 in the US



America's Health Ranking 2011



Environmental Justice

- ▶ No group of people, regardless of ethnicity or socioeconomic class, should suffer disproportionately from environmental health hazards
- ▶ East St. Louis, IL, a small city next to St. Louis, MO, on the Mississippi River
 - ▶ City: 98% African-American and has one of the highest asthma rates in the U.S.
 - ▶ Monsanto, Pfizer chemical, Big River Zinc, and Cerro Copper have operated in East St. Louis or in a nearby town
 - ▶ Monsanto produced polychlorinated biPhenyls (PCBs) at their Sauget, IL plant (located in the East St. Louis area), depositing large amounts of PCB and its byproducts in the area
 - ▶ PCBs are known to cause cancer at even low levels with no safe level of exposure according to the WHO
 - ▶ Residents filed private lawsuits against these companies in 2009, but cases are still pending as of June 2014



Today's Emerging Pediatric Health Challenges

- ▶ Many health problems are multi-factorial
- ▶ Environmental factors may play a role in 25% of cases of development defects
- ▶ Some common chemical exposures increase the risk of cancer decades later

National Academy of Sciences Committee on Developmental Toxicology. Scientific Frontiers in Developmental Toxicology and Risk Assessment. Washington, DC: National Academy Press, 2000.

World Health Organization, WHO 10 Facts on Children's Environmental Health,

http://www.who.int/features/factfiles/children_environmental_health/facts/en/index.html

U.S. Department Of Health And Human Services. Reducing Environmental Cancer Risk: What We Can Do Now, 2008-2009 Annual Report , President's Cancer Panel. April 2010.



Many Sectors Shape Children's Health

- ▶ Chemical standards & regulations
- ▶ Land use & community design
- ▶ Transportation
- ▶ Housing
- ▶ Education
- ▶ And more. . .



Healthy People 2020: An Opportunity to Address Societal Determinants of Health in the U.S.
Secretary's Advisory Committee on National Health Promotion and Disease Prevention
Objectives for 2020, July 26, 2010.



Methods to Decrease Exposure to Harmful Pesticides:

Integrated Pest Management (IPM):

- ▶ An effective and environmentally sensitive way to control pests and weeds.
- ▶ Does not prohibit pesticide use but uses the strategy of 'least toxic methods first.'
- ▶ Uses techniques that pose the least hazards to people, property, and the environment.

U.S. Environmental Protection Agency. Integrated Pest Management Principles. Retrieved from <http://www.epa.gov/opp00001/factsheets/ipm.htm>.



Decreasing Exposure to Harmful Pesticides: Using IPM

- ▶ Example
 - ▶ Monroe County Schools, IN
 - ▶ 19 schools
 - ▶ 90% reduction in the use of pesticides
 - ▶ 90% reduction in pest problems
 - ▶ 90% reduction in pest control costs

Marc Lame (1998) : Monroe County School District, Indiana. IPM Specialist. Personal Communication (September 1998). EPA Pestwise Program http://www.epa.gov/pest/htmlpublications/mccsc_sucess_story.html



Decreasing Exposure to Harmful Pesticides: Using IPM

Many resources available

- ▶ Eco Healthy Child Care®
- ▶ www.cehn.org/ehcc/resources
- ▶ Or your state's Ag Extension Program





Food Quality Protection Act of 1996

- ▶ Legislation passed by Congress to manage pesticide use with a special focus on the effects of pesticide ingestion in children
 - ▶ First bill which required the EPA to use risk management for children's health
- ▶ Key Provisions:
 - ▶ Standards for pesticide residue must explicitly consider the health vulnerabilities of children and infants
 - ▶ A safety factor of 10 must be applied to adult risk levels if there's insufficient or unreliable data on children's exposure limits
 - ▶ Pesticides must be tested every 10 years for health tolerance levels
 - ▶ Incentivized the development of reduced-risk pesticides (expedited approval process)



Land Use: Child Care Facility Siting

No national standard exists for assuring that a child care facility is not located on a site that could harm children due to adjoining or previous uses.

NJ child care center in a former warehouse heavily contaminated with mercury.

[EHCC FAQ on Siting of Child Care Facilities](http://www.cehn.org/ehcc/siting) <http://www.cehn.org/ehcc/siting>



Land Use: Child Care Facility Siting

Only New York and New Jersey
have regulations on siting of child
care facilities

Tara Summers et al. Making Child Care Centers SAFER: A Non-Regulatory Approach to improving Child
Care Center Siting. Public Health Rep. 2011; 126(Suppl 1): 34–40.
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3072901/>



Implications from Climate Change

- ▶ 34% of childhood illnesses around the world are due to modifiable environmental factors (WHO)
- ▶ Casualties and trauma due to natural disasters
- ▶ Increased morbidity/mortality of illnesses due to increased temperature
- ▶ Increased risk of infectious and parasitogenic diseases due to increased rainfalls



Exposures and environments during childhood affect health across the lifespan, and children's environments are shaped by decisions across sectors.





Need for Preventative Care

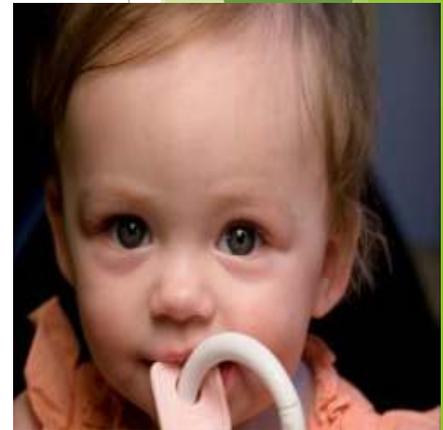


- ▶ A 2011 study showed that each 10% increase in local public health spending led to decreases in:
 - ▶ Infant deaths
 - ▶ Deaths from cardiovascular disease
 - ▶ Diabetes incidence
 - ▶ Cancer incidence
- ▶ The Urban Institute in 2011 found that the American health care system spends \$238 billion annually in “excess costs”: defined as the difference between the cost of care for people with preventable chronic diseases and those without.
- ▶ Trust for America’s Health and RWJF showed an investment of \$10 per person per year in proven community based health programs could save the U.S. up to \$16 billion a year.
 - ▶ Return of \$5.60 for every \$1 invested



Need for Chemical Policy Reform

- ▶ Federal Toxic Substances Control Act (TSCA)
- ▶ Assumes a chemical is safe until otherwise proven, zero banned since 1990
- ▶ EPA must weigh the health risks against the economic costs of banning, limiting, or phasing out a chemical
- ▶ TSCA has limitations
 - ▶ Standards based on healthy adult males
 - ▶ Does not consider developing system's vulnerabilities
 - ▶ Does not consider children's different behaviors and exposures
 - ▶ Only looks at one chemical at a time





States Making Strides

- ▶ 30 states have/are considering toxic chemicals legislation, 162 bills have been adopted by states to ban toxic chemicals from products.
 - ▶ **California** in the last 5 years has banned estrogenic BPA from baby bottles and sippy cups, and changed flammability standards
 - ▶ **Connecticut** passed the broadest BPA ban of its time in 2009, and in 2011 led the country in banning BPA in thermal receipt paper
 - ▶ **New York** passed bans on mercury in products, PBDEs in products, first in the nation to ban carcinogenic flame retardant TCEP, and leading bans on BPA in baby bottles
 - ▶ **Vermont** banned toxic phthalates, BPA, mercury, and lead in children/consumer products
 - ▶ **Maryland** banned cadmium, lead and TCEP in children's products, toxic flame retardant deca-BDE in household products, and BPA in baby bottles and formula containers



States Making Strides

- ▶ Toxic-Free Toys Act
 - ▶ Albany County Legislature's Local Law "J"
 - ▶ Will ban the sale of children's products within the county with chemicals such as:
 - ▶ Arsenic
 - ▶ Mercury
 - ▶ Benzene
 - ▶ Cadmium
 - ▶ Cobalt
 - ▶ Lead



New TSCA (Lautenberg Act)

- ▶ Until the Lautenberg Act, TSCA's basic provisions had not been amended since its enactment in 1976.
- ▶ Covers most products used in industry and commercial/consumer products
- ▶ Excludes chemical:
 - ▶ Uses in drugs, cosmetics, food and food packaging (as regulated by FDA)
 - ▶ Uses in pesticides (regulated by EPA)



New TSCA (Lautenberg Act)

- ▶ Chemicals are judged solely on health risk, including vulnerable populations
- ▶ Requires safety review of all existing and new chemicals
- ▶ Increases EPA's authority to require industry to test its chemicals (avoids past loopholes)
- ▶ Ability to keep chemical information secret is drastically reduced
- ▶ Substantially more funding for EPA, partially from industry



CEHN Addressing Children's Environmental Health Challenges



- ▶ Support of peer-reviewed research through conferences, work on advisory boards, support of increased funding for research
 - ▶ February 4-6, 2015 Research Conference, “Children: Food and the Environment”
- ▶ Conducting education and training programs to build awareness
 - ▶ Eco Healthy Child Care®
 - ▶ Health in All Policies
 - ▶ Health Care Professional Curriculum
- ▶ New vision for Children's Environmental Health in the 21st century
 - ▶ Wingspread Retreat - Blue Print for Action



Eco-Healthy Child Care®

- **A Program That :**

- Supports child care providers in creating child care settings that are as environmentally healthy as possible;
- Allows parents to chose child care facilities that are committed to creating a safer, healthier environment for children to learn and grow.

- **How to Get Involved:**

- EHCC Endorsement: 2-year endorsement granted to providers who comply with at least 24 of 30 best practice techniques.
- EHCC Train-the-Trainer: a workshop for teachers, trainers, health care professionals, licensing specialists and whoever else is interested in eco-healthy child care practices



Eco-Healthy Child Care®

• **Health in All Policies: (2013-2014)**

- Association for Early Learning Leaders (AELL): Edited 12 existing standards and provided suggestions for 3 new standards – impacting 40 indicators; 25 new or revised glossary terms.
- National Association for Regulatory Administration (NARA): Strategic Planning, EH track at annual conference, quarterly webinar series.
- National Resource Center for Health and Safety in Child Care and Early Education (NRC): EH Collection of Standards

• **Health in All Policies; (2014-2015), (2016)**

- Expecting to work with National Association for the Education of Young Children (NAEYC), AELL, and NARA



Eco-Healthy Child Care®

• Health in All Policies (State Impacts):

- PA's Green and Healthy Child Care Initiative continues to use EHCC in *Keystone Stars*, its Quality Rating Improvement Program.
- VT is interested in following PA's lead and incorporating EHCC into their QRIS in 2015.
- NY – “Toxics Reduction Through Child Care Provider Engagement”- collaborative effort of Clean and Healthy New York, Inc. and the Child Care Council, Inc. Transformation of child care in NY, prompting decreases in emerging chemicals of concern. Reached out to over 12,000 child care providers, trained over 400, and provided intensive technical assistance for nearly 50.



Health In all Policies

- **Environmental Law Institute (ELI) - National Impact:**
 - ELI and CEHN - Recent report on state policies addressing environmental exposures in child care facilities. There is no other report of this kind that can help shape strategic policy efforts in the child care arena.





Wingspread Summit

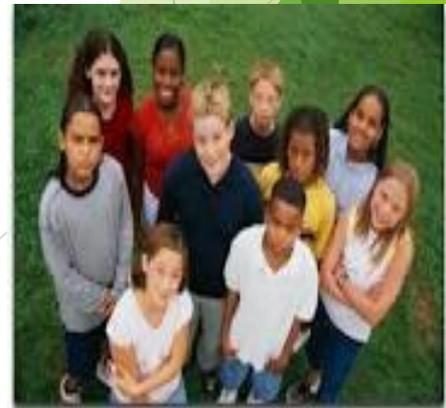
- ▶ In 2015, CEHN convened a Wingspread Retreat at the Johnson Foundation in Racine, WI
- ▶ Group of visionary leaders came together to create a vision statement and forthcoming blueprint for CEH
- ▶ Various disciplines represented: public health to economics to urban planning to business
- ▶ Blueprint and vision are used to assist forward thinking about making the economic, public health, and policy case for children





Vision Statement

- ▶ The next generation must be better off than the last – it is our moral obligation to protect and nurture our children’s health
- ▶ Vision of a society that puts children at the center
- ▶ Crucial aspects include:
 - ▶ Mobilizing greater societal understanding of CEH, with a strong priority on children and families
 - ▶ Creating knowledge essential for action and using knowledge we have now
 - ▶ Marshaling the engine of the economy to achieve environments where children can thrive
 - ▶ Building the political will in our institutions of government for child centered policies



Additional CEH Initiatives

- ▶ Healthy Babies Bright Futures
- ▶ TENDR - Targeting Environmental NeuroDevelopmental Risks
- ▶ Healthy Schools Research Agenda
- ▶ National Collaborative for a Cancer-Free Economy
- ▶ CEH Day! - Second Thursday of every October
- ▶ CEHN 2017 Pediatric Research Conference - April 5-7 in DC

Thank You!

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