

Lecture Hall

Session Abstracts

National Environmental Health Association (NEHA)
72nd Annual Educational Conference & Exhibition

Children's Environmental Health

Tuesday, June 24

8:00 – 8:50am

How to Conduct Investigations for Environmental Asthma Triggers

Mark H. Chamberlain, NEPA/Planning Training Coordinator, Dept. of Interior National Training Center, AZ

Asthma is a chronic disease that affects your airways. If you have asthma, the inside walls of your airways become inflamed. The inflammation makes the airways very sensitive, and they tend to react strongly to things that you are allergic to or find irritating. When the airways react, they get narrower, and less air flows through to the lung tissue. This causes symptoms like wheezing, coughing, chest tightness, and trouble breathing, especially at night and in the early morning.

Asthma cannot be cured, but most people with asthma can control it so that they have few and infrequent symptoms and can live active lives. People with asthma, especially young children, can die from an asthma attack. Asthma is the number one reason why children miss school and the number 1 emergency room admission for children. A key component of controlling a child's asthma is knowing the environmental sources trigger an asthma attack and then reducing those triggers in your environment.

9:30 – 10:20am

The Effect of Green Rehabilitation of Low-Income Housing on Children's Environmental Health: Recent Findings from Minnesota

Susan Aceti, Program Manager, National Center for Healthy Housing, MD

The association between housing and health has been well known for over a century. This presentation will examine how incorporating Green Building and healthy housing principles into housing renovation programs affects public and environmental health in measurable, specific ways. This study is one of the first efforts to quantify the health outcomes of building green, with a focus on low-income disadvantaged populations. With funding from the Blue Cross Blue Shield Foundation of Minnesota, the U.S. Environmental Protection Agency and Enterprise Community Partners, this project examines health outcomes in residents of the Viking Terrace low-income housing development in Worthington, MN. Green improvements include improved ventilation with fresh air delivery to apartments, low-VOC materials, IPM, improved moisture management, radon testing, energy-efficient windows, and other features. Residents' health was assessed via a questionnaire adapted from CDC's National Health Interview Survey. A visual assessment protocol was adapted from the Public Housing Assessment System from the U.S. Department of Housing and Urban Development. Interviewers visited and called residents to invite them to enroll in the project. Once a resident enrolled, the interviewer administered the questionnaire, conducted a visual assessment and provided basic training on healthy homes. Staff from the

University of Minnesota's Center for Sustainable Building Research conducted ventilation measurements and environmental testing. Preliminary results show that 29% of children had improved overall health and 64% spent more time playing outside. Seventy-three percent of those interviewed reported increased comfort and 63% reported easier cleaning after the renovation. In adults, 37% reported improved health. Ventilation and radon studies showed need for improvements and mitigation, now underway. Future reports will include VOC measurements, radon, longitudinal visual inspection and health status over a two-year period. A brief review of the health criteria of several leading green building rating systems (e.g., Green Communities and LEED), and a review of the evidence linking housing hazards and health issues (e.g., asthma, lead poisoning, respiratory disease, mental health, injuries, cardiovascular disease) will be presented. This project demonstrates that low-income housing can be renovated using Green principles that promote energy conservation, sustainability and public health and safety.

11:00 – 11:50am

How to Integrate “Healthy Homes” Practices and Principles into Your Current Work

Ruth Ann Norton, Executive Director, Coalition to End Childhood Lead Poisoning, MD

Mary Jean Brown, ScD, Chief of the Lead Poisoning Prevention Branch, CDC, GA

This workshop will involve a presentation/speaker for approximately 2/3 of the time. The presentation will provide an overview of the Coalition's Healthy Homes approach, which was developed after both researching national best practices of Healthy Homes as well as conducting hands-on program administration. The discussion will cover what environmental health elements are addressed, what interventions are involved, who conducts the interventions and when, how homes and families are identified, and how the Coalition has convened a strong local Healthy Homes partnership base.

The presentation will also examine the Coalition's two Healthy Homes Demonstration projects, extracting lessons learned and how-tos, which will focus on benchmarks, outcomes, and data collection. The first program focused on pregnant women and provided in-home interventions and education in preparation for the new baby's arrival. The second program targets families with asthma-diagnosed children to provide in-home interventions tailored to the needs of each family, as well as parent and child education by community health nurses. Both programs were designed to maximize the impact of the environmental health interventions while providing sustainable and reliable interventions. Both programs feature work by both trained environmental health workers in partnership with community health educators.

In addition, the presenter will cover some potential pitfalls of home-based children's environmental health programs. One of the failures of some Healthy Homes efforts is that they try to over-reach. While it is clear that maximizing the environmental health within a home will be of ultimate benefit to children and families, it is not always possible to identify, quantify, and provide interventions for every potential environmental health concern. Uncertainty about how to address this dilemma frequently results in inaction. Our focus will be to encourage attendees to define the parameters within which they will achieve success.

Finally, the workshop will provide guidance on how to address the nexus of environmental health hazards in the home that pertain to lead poisoning, moisture control, air quality, injury prevention and integrated pest management. These five elements were selected based upon national child safety data, environmental health measures, and available interventions.

1:30 – 2:20pm

Green Pest Management—A Strategic Plan for Schools

Dawn H. Gouge, PhD, Urban Entomologist, University of Arizona, AZ

Both pests and pesticides pose health risks for children. Some pesticides contain carcinogens, endocrine disruptors, and asthma triggers. The behavior, anatomy and physiology of children make them especially vulnerable to the effects of pesticide exposure. Integrated Pest Management (IPM) programs in Arizona schools have reduced pest presence by up to 85%, while at the same time reducing pesticide applications by up to 90%. Currently approximately 34% of the 1,043,298 students enrolled in AZ public K-12 schools, are enrolled in districts with verified IPM programs. In 2007 a national group of experts constructed a Pest Management Strategic Plan for green schools. This presentation details the most effective and safest methods for achieving the highest levels of pest management. There is often a long-term cost saving benefit associated with IPM practices. But, the long-term health benefit is by far the most important direct impact.

3:00 – 3:50pm

Lead Poisoning Creates Failing Schools and Many Other Social Problems You Never Suspected

Michael T. Martin, Research Analyst, Arizona School Boards Association, AZ

The consequences of lead poisoning are fairly well known to the public health community, but this knowledge is fragmented. When you bring this knowledge together and consider the true implications of lead poisoning, it is almost certain that lead poisoning plays a major role in the majority of so-called "failing public schools" which are almost always in lead poisoned neighborhoods. In addition, spouse abuse, child abuse, and broken families may also be a direct consequence of lead poisoning.

4:30 – 5:20pm

It's Never Too Early to Teach Environmental Health! How Puppetry Can Be an Effective Tool for Raising Environmental Health Awareness in Young Children

Robert Maglievaz, MSPH, RS, CIH, Environmental Specialist II, Volusia County Health Dept., FL

Children are more vulnerable than adults to environmental risks because their exposures are proportionally (by weight) greater than adults, their bodies are still developing, their behaviors (e.g. playing in dirt) can place them at greater risk for exposure and they have little control over their environment. Public health outreach efforts to raise children's awareness have traditionally been accomplished via generalized written materials provided to schools and parents. However, educational research has shown differentiated instruction anchored in a child's real-life experiences to be the most effective and lasting method for raising issue awareness. The use of themed puppetry has been one of the more successful examples of differential instruction in many academic areas. In partnership with several elementary schools in Volusia County, Florida, the Volusia County Health Department (VCHD) developed and tested the effectiveness of themed puppetry in increasing awareness of local environmental health issues. The VCHD created and presented a puppet show where characters encounter real-life environmental health threats from a child's perspective, experience various approaches to handling them and then discern the various outcomes of those approaches. The program was tested in the first grade classes of three schools serving communities with increased environmental risks. Pre- and post-show tests were administered to measure changes in baseline environmental health awareness. All of the classes showed gains in their awareness levels. The results confirmed puppetry as a highly effective tool for raising environmental health awareness in young children and suggests its increased use in outreach efforts involving this age group.