

## **A Call to Action: The Impact of School Environments on Children's Health**

### **Synopsis of NASN Annual Conference Presentation**

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This presentation focused on how the increasing use of synthetic chemicals expose children, who are particularly vulnerable, to potentially hazardous substances in a variety of environments (the air they breathe, the water they drink, the food they eat). The presenter works with the Children's Environmental Health Network, a non-profit organization with its mission being to "protect the fetus and the child from environmental health hazards and to promote a health environment where children can thrive." I thought this was particularly topical for us as school nurses because we know that healthy environments contribute to the growth of healthy bodies and minds.

The world had become a Petri dish of chemicals, with an estimated 80,000 chemicals in use globally. Particularly frightening is that most of these chemicals have not been evaluated for health effects on the developing systems of children. We know that children are not just "little adults" and their nervous, reproductive, immune and respiratory systems are uniquely vulnerable to exposed environmental chemicals. Such environments have changed in recent decades. What is not known is what exactly children are exposed to and the health effects of these chemicals on developing systems.

Concerns at the school level include not only chemical use and management, but indoor air quality, outdoor air pollution, school design, construction, and renovation as well as water, and other exposure concerns (lead, asbestos, and mercury). With the student growth that many districts are experiencing, there is also the concern about the use of portables and adequate ventilation.

As I sit in a damp health room inside a 30 year- old school, indoor air quality immediately comes to mind. In fact, the prevalence of asthma is increasing due to the obvious viral infections and allergens, air pollutants, smoke, mold, and radon. Therefore, it comes as no surprise to hear that asthma related illnesses is the leading cause of school absenteeism. I found it interesting to hear that radon is the second leading cause of lung cancer.

Outdoor issues include air pollution, UV exposure, noise, soil ingestion, and playground equipment. Some of the older playground equipment may contain wood that has been soaked in arsenic as a means of pressure treating. Ingestion of lead (found in old paint, on the ground, and in the water) can contribute to decreased IQ, learning disabilities and ADHD, decreased height, and delayed onset of puberty. Interestingly enough, the real reason that lead was abated from gasoline was to increase the effectiveness of catalytic converters, not because of environmental concerns. Hearing this made me think about all the diesel buses I see idling on the bus ramps every day!

There are some disparities among our children. Some children are disproportionately impacted due to genetic predispositions and socio-economic factors which might lead to

a higher or lower exposure. As a result, African-American children and those in lower income communities suffer from higher rates of asthma and higher rates of lead poisoning (in fact, asthma prevalence is 38% higher in African-American children than white children); Hispanic children are disproportionately exposed to dangerous pesticides and polluted air because of migrant farming; African-American children between the ages of 1 and 5, still account for the highest rates of lead poisoning.

As far as a call to action, the Institute of Medicine recommends that environmental justice and specific environmental hazards be the focus of educational efforts to improve understanding among community residents and health professionals. As school nurses we need to be on constant lookout for policy opportunities such as improving public warnings about bad air days, supporting mercury warnings in fish, being spokespersons for playground safety issues such as arsenic treated wood, promoting smoke-free environments, lobbying for better remediation of lead hazards in housing and schools, promoting integrated pest management in schools, public buildings and day care settings, advocating for school and child care setting sightings (keeping a minimum distance from pollution sources) , promoting increased air quality testing, and becoming proactive in the elimination of unnecessary school bus idling. It is naïve to assume that children's best health and well-being are being taken into consideration when some policies are made. Challenges for change include the lack of health tracking and not having a national recording standard for asthma and lead related illnesses.

In conclusion, school nurses are in an amazing unique position to gather information to fill gaps in knowledge of health impacts and exposures. The need for preventive protection of our children's health is vital and it will take a comprehensive public health approach with key influential leaders to make change.