Environmental Health at School:

Ignored Too Long

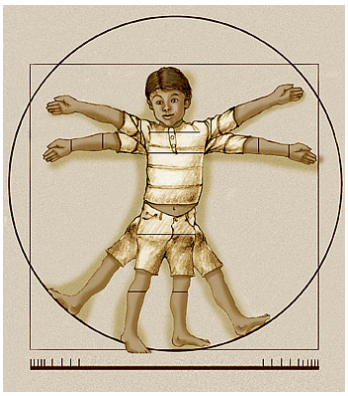
Panel and Facilitated Workshop

November 2015

Full Report

Sponsored by:

HEALTHY SCHOOLS NETWORK



ENVIRONMENTAL HEALTH AT SCHOOL: IGNORED TOO LONG

Hosted by: Healthy Schools Network

W.K. Kellogg Foundation

The Healthy Schools Network's event is supported by the W.K. Kellogg Foundation (WKKF). WKKF supports children, families and communities as they strengthen and create conditions that propel vulnerable children to achieve success as individuals and as contributors to the larger community and society.

National Institute of Environmental Health Sciences

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Education Facilities Clearinghouse

The Education Facilities Clearinghouse (EFC) provides a website of best practices and provides technical assistance and training to schools and school divisions - from Pre-K to higher education - on a range of facility topics. The EFC is a program of the George Washington University and the Graduate School of Education and Human Development and is funded by the U.S. Department of Education.

The California Endowment

The California Endowment, a private, statewide health foundation, was established in 1996 to expand access to affordable, quality health care for underserved individuals and communities, and to promote fundamental improvements in the health status of all Californians. Headquartered in downtown Los Angeles, The Endowment has regional . offices in Sacramento, Oakland, Fresno and San Diego, with program staff working throughout the state. The Endowment challenges the conventional wisdom that medical settings and individual choices are solely responsible for people's health. The Endowment believes that health happens in neighborhoods, schools, and with prevention. For more information, visit The Endowment's Web site at www.calendow.org

Mid-Atlantic Center for Children's Health and the Environment

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for their advice and assistance in designing the agenda for
"Environmental Health at School: Ignored Too Long"
through five facilitated conference calls and through other insightful contributions.

Organizing Committee

Claire Barnett, MBA, *Healthy Schools Network*
Jerome Paulson, MD, FAAP, *Professor Emeritus, George Washington University*
G. Victor Hellman, Jr., Ed.D., *Education Facilities Clearinghouse*
Donna Mazyck, MS, RN, NCSN, *National Association of School Nurses*
Nse Obot-Witherspoon, MPH, *Children's Environmental Health Network*

Ex Officio Members

Laura Anderko, PhD, RN, *Georgetown University, Mid-Atlantic Center for Children's Health and the Environment*
Chip Halverson, ND, *Co-Founder National Education Association Healthy Schools Caucus*
Lloyd Kolbe, PhD, F*ormer and Founding Director, U.S. Centers for Disease Control & Prevention, Division of Adolescent & School Health*

Ruth Etzel, MD, PhD, *US Environmental Protection Agency, Office of Children's Health Protection*
(Designee: Khesha Reed)
David Rowson, *US Environmental Protection Agency, Indoor Environments Division*
(Designees: Brenda Doroski & Michelle Curreri)
Patrick Breysse, PhD, *Centers for Disease Control and Prevention, National Center for Environmental Health (NCEH), Agency for Toxic Substances and Disease Registry (ATSDR)*
(Designee: Tim Hack)

Ellen Braff-Guajardo, *W.K. Kellogg Foundation*
Judi Larsen, *The California Endowment*
Liam O'Fallon, *National Institute of Environmental Health Sciences*
Kim Gray, *National Institute of Environmental Health Sciences*

Facilitators

Dana Goodson, *RESOLVE*
Kim Rustem, *RESOLVE*

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Executive Summary

On November 9-11, 2015, Healthy Schools Network, with funding support from the W.K. Kellogg Foundation, Education Facilities Clearinghouse, California Endowment, Mid-Atlantic Center for Children's Health and the Environment, and National Institute of Environmental Health Sciences, convened the first national facilitated workshop on environmental health at school at The PEW Charitable Trusts in Washington, DC.

This novel gathering assembled knowledgeable parents, experts, and advocates from multiple fields to develop research and policy recommendations for addressing environmental health hazards (including, but not limited to, indoor air pollution, PCBs, molds, and chemical mismanagement and spills) commonly found in the nation's 130,000 PK-12 schools and child care facilities. These risks place more than 55 million children who occupy these facilities across the country at risk every day. A full list of workshop participants can be found in Appendix 1.

As the first national discussion on children's environmental health in schools, the workshop was not facilitated to full consensus. However, some broad areas of consensus emerged from the common statements and experiences of many attendees, which led to the recommendations for new policies and research in children's environmental health listed below. Support for these recommendations should not be attributed to any specific person in attendance or the organization they represent.

Overall, participants could agree that children's risks and exposures at schools and in child care facilities are truly public health issues that require public health solutions. Recommendations include the need for collaborations across the sectors to develop preventive measures and identify a host of primary, secondary, and tertiary prevention actions that keep all children safe.

Summary Report (14pp) **and Presentations:** http://healthyschools.org/clearinghouse.html

Disclaimer
Opinions and recommendations are those of the individuals attending and not necessarily those of their organizations or public agencies.

Problem Statement

Children are uniquely vulnerable to environmental health hazards, such as those commonly found in this nation's 130,000 PK-12 schools), the places where some 55 million children spend the most time when not at home. The hazards can adversely affect all children's ability to learn, as well as their short-term and long-term health. (These hazards include, but are not limited to, indoor air pollution, PCBs, molds, chemical mismanagement and spills, etc.) School personnel, who are outnumbered by children by about 10-1 in schools, can access an array of public and private occupational health supports, such as worker health and safety training, workplace inspections, bargaining contracts, and occupational health clinics, none of which is designed for use by children. Thus, all children should be considered at risk for learning and health problems due to the unexamined and unaddressed environmental health hazards in their schools and the lack of public health services for children at risk or with suspected exposures at school.[1]

Parent Case Report 1:
A NYS parent reports: "My son was healthy in elementary school but when he moved up to the middle school he became ill, and then I found out that school teachers and other children were sick too. I heard there were high levels of radon in the building and carbon monoxide as well which is very dangerous. Why is it that the teachers can get help from (state –funded) occupational health clinics but children, who out-number adults at school, have no help from public agencies? I thought the purpose of schools was to help develop children into healthy, independent adults! Now that he has moved up, he is healthy again, but there are still kids sick at the middle school."

In light of the benefits of a physically healthy learning environment, and given that all states compel children to attend school, the lack of coordinated policy and research approaches regarding children's risks and suspected exposures in schools has **profound justice, equity, ethical and cost implications** that have not adequately been addressed and that impact children's health and ability to learn every day.[2] While the US Constitution leaves the responsibility of education to the states, health and environmental responsibilities are shared federal-state-local issues.

How should we identify, prevent, and track risks and children's suspected exposures? How can we benchmark prevention efforts? The recommendations stemming from this novel workshop are anticipated to have impacts on multiple fields: children's health, health care, environmental public health, education, environment, indoor environments, and building sciences.

[1] Paulson: THS 2015: EPA State School Environmental Health Guidelines: NACCHO Children's Environmental Health Policy
[2] Baker L, Bernstein H. The Impact of School Buildings on Student Health and Performance. McGraw-Hill, 2012.

Parent Case Report 2:
A Tennessee Parent reports: "It took four years of hard work to get my school to stop spraying hospital-grade disinfectants around children at lunch. Worse, children were asked to do the spraying. After documenting and reporting this, I was banned from visiting my child's school; it took five months for a lawyer to get the ban revoked."

Under ideal circumstances, child care centers and PK-12 schools would be distraction-free zones providing safe, healthy, nurturing, and academically challenging environments for all children, and safe, healthy, and supportive environments for all employees. But these facilities fall far short of this ideal, and are in fact harming the health, safety, and learning of their occupants. We know that many child care centers and PK-12 schools face many other challenges, as the children they shelter are often seeking a safe haven from violence; physical, psychological, or sexual abuse or bullying at home or in the community; or substance abuse among friends, neighbors, or family members.

The work being done by Healthy Schools Network related to the meeting described in this document and the follow-up work to come cannot solve all the problems plaguing children inside and outside of schools. However, evidence supports the conclusion that child care centers and PK-12 schools that do not protect children's health from environmental hazards can never be true houses of learning.

The panel and public forum were not facilitated; no notes were taken.

Panelists with organizers of the November 2015 panel and facilitated workshop.
Left to right: Speaker Ruth Etzel, MD; Organizer/Speaker Jerome Paulson, MD; Organizer Claire Barnett; Speaker Suzanne Condon, MSM; Organizer Laura Anderko, PhD; Speaker Bill Fisk, MS.
Missing from photo: Speaker John Howard, MD

Speakers and their presentations were as follows. The presentations are on the web at http://healthyschools.org/clearinghouse.html and in Appendix 2.

- John Howard, MD, MPH, JD, LLM, Director, National Institute for Occupational Safety and Health (NIOSH), addressed "NIOSH and Schools" and introduced the NIOSH research process and highlighted NIOSH's concern about "hybrid" workplaces, that is, work sites where employees whose interests can be addressed by NIOSH programs and Occupational Safety and Health Administration (OSHA) regulations share space with other occupants: schools, hospitals, and airplanes were cited as examples. He also identified opportunities for integrating children's environmental health in to the NIOSH research program.

- Ruth Etzel. MD, PhD, Director, US EPA Office of Children's Health Protection (OCHP), described children's unique vulnerability to environmental health hazards and outlined US EPA's multiple roles in promoting children's environmental health in schools and in child care facilities. EPA has a long history of guidelines and grants to address school environments, on topics including indoor air, radon, molds, safer pest control, design, and PCBs, and a newer authorization carried out by OCHP, which issued a 2011 guideline on school siting and 2012 guidelines and grants for state agencies to advance green and healthy school environments.

- Suzanne Condon, MS, former Associate Commissioner and Director, Bureau of Environmental Health, State of Massachusetts Department of Health, described opportunities for action under the Affordable Care Act (ACA) and other federal programs to integrate children's environmental health into federal and state public health tracking.

- William Fisk, MS, Senior Scientist and Leader, Indoor Environment Group, Lawrence Berkeley National Laboratory, University of California at Berkeley, introduced the robust literature and emerging research on indoor air topics that could impact children in schools and in child care facilities. Of particular interest was his own recently published research on the impacts of indoor carbon dioxide (CO_2) on adult productivity and more recent research on adult executive functioning and what that might mean for children.

Facilitated Workshop

Tuesday, November 10 and Wednesday, November 11, 2015

Reality Check: Community-Based Panel

Two parents and a community-based environmental justice attorney presented their extraordinary challenges in trying to prevent harm to children from uncontrolled renovations of an occupied school, from the mishandling and misuse of highly toxic disinfecting products by kindergartners, and from the proposed siting of an all-new school on a known toxic dump site using Federal Emergency Management Agency (FEMA) funds.

In each case, presenters identified the kinds of risks and exposures to children, the extensive efforts they took to address these, the continuing impacts on their lives, and the lists of state and federal agencies that declined to assist them.

Reality Check Panel *stuns attendees. Advocates/parents discuss the impact of renovating an occupied school (Oklahoma); the misuse of disinfecting products on cafeteria tables (Tennessee); health and justice efforts to prevent building a new school on a toxic site with federal funds (New Orleans).*

See the speakers' presentations in Appendix 2.

- Kimberly Voss (OK) described her long struggle to understand and to cope with the serious effects of uncontrolled school renovation fumes and particulates on her daughters, one with multiple disabilities and one without. She listed over a dozen state and federal agencies and elected officials whom she believed failed to provide assistance.

- Monique Harden, Esq., Advocates for Environmental Human Rights (LA), described her organization's efforts to prevent the demolition of a historically black high school and its reincarnation on a known toxic dump site, supported by FEMA funds.

- Daniela Kunz (TN) described how, as a volunteer cafeteria monitor, she observed kindergartners spraying their tables, food, and each other with a hospital-grade disinfectant, then her multiyear effort to stop the practice, which resulted in a ban (later reversed) on her entering school property.

The Reality Check panelists and workshop participants identified several challenges parents and advocates face when trying to address environmental health hazards affecting children in schools and child care facilities.

- ***Parents' inability to secure independent assistance and/or preventive interventions from agencies when children are at risk or have exposures:*** At the federal level, regulatory agencies lack statutory authority to respond to child or parent complaints and intervene in schools to address known environmental health hazards affecting children.

    - For example, the Occupational Safety and Health Administration (OSHA) sets regulations for workplace safety for adult workers; thus, it is not directly responsible for children in schools and child care facilities. While the National Institute for Occupational Safety and Health (NIOSH) within the Centers for Disease Control and Prevention (CDC) is responsible for conducting research and providing health hazard evaluations and guidance to protect *employees* in their workplace, such as schools, from environmental health hazards, the agency lacks statutory authority to offer any similar assistance to a parent or child with the same child care- or school-based exposures.

A School damaged by flooding after Hurricane Katrina.

    - EPA regulates PCBs, if found in schools, and has issued regulations on asbestos, drinking water quality, and lead-safe renovations in schools and child care facilities. It has also disseminated voluntary guidance and has provided limited grants to address school environments, including on topics such as radon, indoor air quality (IAQ), integrated pest management (IPM), design, drinking water, building siting. The agency has also provided guidance for state agencies on setting up a comprehensive statewide interagency program to address school environments. It has some regulations but by law EPA cannot require states, local schools, or local and/or state health departments to adopt guidelines. However, in the last two decades, more than 30 states have enacted laws

regarding IAQ in schools and IPM in schools, often consistent with EPA's guidelines.[3]

- The federal Department of Education has no mechanism for receiving or responding to complaints and is not authorized to address environmental health hazards in child care or PK-12 schools. It has never had any in-house staff expertise on school facility management or on pediatric environmental health.

- To compound the problem, in some states and localities, public health agencies either believe that they lack the statutory authority and/or lack the capacity to intervene or respond to a child or parent complaint, if the type of environmental hazard or risk being reported does not fall directly within their purview, such as kitchen inspections. Hospitals are also unable to intervene or support a parent complaint in many localities because they have no expertise in children's environmental health and are not provided the appropriate legal authority for access.

School field treated with wrong chemicals.

- ***Lack of child-protective policies and programs in states and localities:*** Participants were aware that some states and localities have instituted environmental health programs and policies for school facilities that often reflect various US EPA guidelines or that have features that could be adapted as models by other states and localities. These target improving school facility environmental conditions, but not providing services for children at risk or with exposures. Also, parents and children living in states that lack basic effective policies and programs for preventing environmental health risks in school facilities have even less recourse. This landscape of inconsistent state-by-state policies, coupled with the evidence that the poorest children always have the school buildings in the worst condition, leaves many children at greater risk than others.

- ***Culture of "local control" and resistance to oversight among school districts:*** Several participants identified the challenge of schools forcefully advocating for more state funding and simultaneously seeking to avoid state regulations, as well as dealing with reluctant school administrators, personnel, superintendents, and school boards, who dismiss parent and child complaints about existing environmental health hazards. In addition, there is little to no job protection for school personnel who might speak out and no publicly operated or supported social and technical supports for parents who

[3] THS 2015

have identified environmental risks in their schools, such as that pioneered by Healthy Schools Network, leaving parents at risk of facing serious repercussions for reporting issues: for example, being banned from their child's school.

- ***Lack of knowledge/training of school personnel about risks present in schools:*** Several participants also acknowledged that in their experience, education leaders and other school and child care personnel often lack the knowledge or training to identify environmental health risks to children in schools, the effects of those potential exposures, or the benefits of greener and healthier facilities and are unaware of the corrective actions to take. Without this knowledge or training, some school staff may inadvertently take steps that add to problems, and even the most caring of school personnel may not have the clout or the authorization to protect children from environmental health risks.

Keynote Address: Environmental Health at School: Ignored Too Long

Jerome A. Paulson, MD, FAAP, Professor Emeritus of Pediatrics, George Washington University School of Medicine & Health Sciences and Professor Emeritus of Environmental & Occupational Health, George Washington Milken Institute School of Public Health, provided a detailed outline and update to his published paper *Who's In Charge of Children's Environmental Health at School?*

Attendees discuss Dr. Jerome Paulson's presentation.

Attendees were urged to read the paper and *Towards Healthy Schools 2015*, a state-of-the-states data and policy analysis, in advance of this workshop. See Appendix 2 for the presentation.

Key comments included:

- ***Environmental health risks in child care centers and schools:*** The Pew Environmental Health Commission defines environmental health as "those aspects of human health, including quality of life, that are determined by interactions with physical, chemical,

biological, and social factors in the environment. It also refers to the theory and practice of assessing, correcting, controlling, or preventing those factors in the environment that may adversely affect the health of present and future generations." Therefore, environmental health risks in child care facilities and schools can be described as physical, chemical, biological, and social issues and include, but are not limited to, IAQ issues; inadequate lighting; the presence of pests and pesticides; elevated noise levels; exposures to radon, asbestos, lead, and PCBs; water contamination; mismanagement of chemicals; unsafe cleaning processes and products; and school siting issues.

- ***Challenges:***

    - ***Currently, no systematic data collection efforts exist on child care, PK, K-12 school buildings, or environmental health risks:*** In June 1996, the Government Accountability Office (GAO) released a report, *School Facilities: America's Schools Report Differing Conditions*, presenting the results of a one-time nationwide survey of the facility conditions of nearly 10,000 schools and site visits to 10 school districts.[4] More recent information comes from the self-reported data collected between the years of 2012 and 2013 for the National Center for Education Statistics' report *Condition of America's Public School Facilities*. Based on survey responses, 53% of public schools need to spend money on repairs, renovations, or modernization to bring buildings into good condition. "Among public schools with permanent buildings, the environmental factors in permanent buildings were rated as unsatisfactory or very unsatisfactory in 5-17% of schools." Likewise, ratings of unsatisfactory or very unsatisfactory were reported for the environmental factors in portable buildings in 10 to 28% of the schools.

      Despite these findings, no systematic, annually occurring, nationally representative data collection effort exists. This makes it difficult to track the physical conditions of public school facilities and the presence of environmental health risks, implement necessary interventions, and measure progress to prevent and reduce environmental risks to children in schools. There are no similar studies of child care facilities in the literature.

    - ***The Family Education Rights and Privacy Act (FERPA) prevents data-sharing efforts between public schools and public health departments:*** FERPA is a federal law that protects the privacy of student education records and prohibits schools from disclosing student records to other non-exempt parties without parental consent. Student records often include important health information that could be used by public health departments to begin tracking and evaluating

[4] U.S. General Accounting Office, "School Facilities: America's Schools Report Differing Conditions" (June 1996), available at http://www.gao.gov/assets/230/222833.pdf.

the impact of environmental health risks on student health, as well as evaluating the success of interventions. However, public health departments are not considered exempt parties and so do not have legal access to this data.

- ***Some common facility problems are addressed, but remain unresolved:*** Some efforts have been made at the federal and state levels to address environmental health risks in schools; however, these efforts are not enough to resolve the problems. EPA developed voluntary guidelines, recommendations, and programs for schools and state and local governments to address some of the environmental risks in and around schools. These include a voluntary program to reduce the infiltration of fumes and carbon monoxide from idling school buses into classrooms; voluntary siting guidelines that, among other things, recommend that schools not be located on un-remediated brownfields or on or near Superfund sites; a voluntary school chemical cleanout program to improve the use and storage of toxic and explosive products in schools; a voluntary program to remove lead from drinking water; recommendations for radon testing; and recommendations for testing and improving indoor air quality as a part of the IAQ Tools for Schools program and the Healthy School Environments Assessment Tool (Healthy SEAT). Also at the federal level, the Asbestos Hazard Emergency Response Act (AHERA) requires public school districts and nonprofit schools to inspect buildings for asbestos, develop management plans, and take actions to prevent or reduce asbestos hazards; however, frequent noncompliance leaves children at risk. EPA's Lead Safe Renovation Rule also applies to all educational facilities that have children ages six and under present.

  More than thirty states have implemented programs and policies for regulating indoor air quality in schools, some of which require school districts to follow EPA's *IAQ Tools for Schools* protocols, and also require schools to implement integrated pest management (IPM) strategies to reduce pests and pesticide use. Also, a growing number of states and districts have polices regarding the use of green cleaning products or have adopted advanced school design standards (Collaborative for High Performance Schools (CHPS) or the US Green Building Council's Leadership in Energy & Environmental Design (LEED) standards).

  Children living in states without these programs and policies, or where those are purely voluntary or where they are never enforced, remain at additional risk.

- ***Federal agencies do not have legal authority to establish or enforce mandatory standards for school buildings or to prevent or reduce environmental health risks to children:*** The US Constitution grants the responsibility of education to the states. However, health and environment are shared federal-state-local responsibilities. But the Department of Health and Human Services and the US Environmental Protection Agency have severely limited authority over environmental conditions of schools and child care facilities, and none to intervene for children at risk or with exposures.

As a result, protections for children from environmental health risks differ state by state and from locality to locality, creating a landscape of disproportionate risks and impacts for children across the US. In contrast, NIOSH and OSHA (and or the state-adopted occupational safety and health programs for workers) do have authority to address worker health and safety concerns through regulations, onsite health evaluations, and research.

- ***Potential Solutions:***

  - ***Implement a Rapid Response and Prevention Program:*** Participants encouraged the group to think about designing a program that improves the ability of schools and the local and state health departments to respond quickly to identified problems, coupled with a prevention approach using routine inspections to identify and address conditions that contribute to environmental health-related illnesses. This program should include mandatory education and training efforts for teachers, school administrators, and school personnel (e.g., custodial staff) on how to prevent environmental health risks in schools. Participants also believed that performance standards could be established for personnel and all response and prevention programs in order to track environmental health risks and measure the effectiveness of interventions.

Inadequate, dirty janitorial closet.

  - ***Maintain local control of implementation, but grant states the power to intervene and enforce:*** Several participants emphasized that local school districts and local public health departments should be the parties responsible for identifying and addressing environmental health risks in education facilities and to children in schools. States should have oversight, however, and the power to intervene and enforce state laws to hold the local schools responsible to children and parents. Several participants emphasized the need for establishing incentives and disincentives to encourage school staff to make decisions that protect children from environmental health risks.

  - ***Establish a clear, transparent system for reporting and responding to parent complaints:*** Several participants suggested establishing a single point of contact

for parents to report their complaints, e.g., state health departments. These departments could establish memorandums of understanding (MOUs) with their regional Pediatric Environmental Health Specialty Units (PEHSUs). If a state does not establish such a system, the regional PEHSU could be the designated first point of contact.

- ***Facilitate and support case reports, data collection, and data-sharing efforts:*** Participants emphasized the need for data sharing across sectors (schools and various state agencies, as well as public health departments and PEHSUs) in order to track environmental health risks, measure the effectiveness of interventions, measure impacts on children's health, and hold schools and governments accountable for improving children's environmental health in schools.

- ***Develop a clear, strong national communications strategy:*** Participants emphasized the need for a strong national communications strategy in order to garner support for systemic policy changes.

- ***Undertake a national review of children's environmental health risks in schools and child care facilities:*** Participants also saw a need for a national review of children's environmental health risks in schools and child care facilities. There is a need to review current data, identify data gaps, and summarize that information. Such an undertaking might be done by the US President's Task Force on Environmental Health & Safety Risks to Children, or a body within the National Academy of Sciences. Congress, a federal agency, or a private entity could commission a study to collect new data on the frequency of all environmental health risks to children in schools or child care facilities.

- ***Engage school boards, principals, school administrators, teachers, custodians:*** Participants also suggested engaging the education community in the development of an overall strategy for facility improvements and to increase their knowledge about reducing risks to children.

Presentation: Environmental Health of School Facilities

Barbara Bice, RA, Southern Region Representative, National Council on School Facilities' Board of Directors, gave a presentation on the environmental health of school facilities; key comments from her presentation and the subsequent discussion are summarized below. See Appendix 2 for the presentation.

Key comments:

- ***Annual facility operating and capital costs for all 100,000 public PK-12 schools in the US:*** One hundred billion dollars is spent annually on operating and capital costs of public PK and K-12 school facilities. Of that $100 billion, $40 billion is spent on utilities,

operations, maintenance, and repair, $10 billion is spent on debt services, and $50 billion is spent on new construction, modernization, and capital renewals. Capital spending fluctuates with the national economy. Deferred maintenance costs for public schools in the US are estimated at $542 billion.

- ***States and localities play vital roles in the planning, design, construction, operation and maintenance of school facilities:*** In 2010, 73% of total PK-12 capital outlay expenditures came from local sources and 27% came from state sources. None came from federal sources. State contributions vary drastically state by state—11 states contributed no funding to pay for capital outlay expenditures, 14 states contributed less than 20%, 12 states contributed between 20% and 50%, and 13 states contributed over 50%.

Breakout groups discuss overcoming barriers to environmental health in schools.

- ***The National Council on School Facilities (NCSF) supports states in their development of safe and healthy school facilities:*** NCSF was organized two years ago and is composed of the current heads of state-level educational facilities agencies, departments, commissions, and authorities from 16 states (but is also open to leaders from all 50 states, Washington, DC, the Bureau of Indian Affairs, the Department of Defense, and US territories). NCSF's kickoff initiatives include a partnership with the 21st Century Fund and US Green Building Council to produce the "State of the States" report on funding for school facilities, a partnership with the Education Facilities Clearinghouse to produce a series of seven planning training videos for schools, and a partnership with the US Census of Governments and National Center for Education Statistics (NCES) to develop consistent data definitions for expenditures for school facilities.

- ***Maryland's Green and Healthy Schools Program:*** Bice described the Green and Healthy Schools program created in Maryland. Maryland has 24 countywide public school systems, which include approximately 866,000 students and 1,400 schools. Local Boards of Education are considered independent entities and have authority over the

management of school facilities, including developing school specifications, hiring engineers, and awarding construction contracts. Under the Green and Healthy Schools program, the state of Maryland has adopted a collaborative approach to ensuring that schools are safe, healthy places where children can learn and play. First, with regard to primary school facilities, the Maryland Department of Education Division of Business Services works closely with other state agencies, federal agencies (e.g., EPA and CDC), and advocacy organizations to understand state-level trends occurring in school facilities, educate local school boards and the state legislature about these trends, and define state priorities for addressing harmful trends across the state. Second, new school construction is approved and overseen by the state superintendent and the Interagency Committee on School Construction. All proposed sites must undergo an environmental assessment, which is then reviewed by state agencies, and receive final approval from the Interagency Committee before construction can begin. The Interagency Committee is also responsible for conducting a survey of maintenance needs in schools every seven years. Third, the Maryland State Department of Education School Facilities Branch is responsible for reviewing and approving construction plans and developing facilities and planning guidelines for local school boards.

Some participants commented that, with over a dozen state agency programs engaged with the Maryland Division of Facilities, there is no apparent road map, or entry point, or agency designated to respond to parents, such as the case examples from this workshop's Reality Check panel.

- ***Broad, collaborative networks are important to improving environmental health in public school facilities:*** Several participants noted the importance of collaboration between federal, state, and local governments and advocacy organizations in advocating for and improving environmental health in public school facilities across the country. A coordination of efforts among all the diverse stakeholders is necessary, a step recommended in EPA 2012 guidelines and grants to state agencies to address green and healthy school environments.

- ***Need for mandated, routine inspections and assessments of school facilities:*** Several participants noted that while many voluntary programs exist for preventing and responding to the environmental health risks that exist in school facilities, mandated and routine assessments of schools' environmental health are lacking. Participants suggested requiring that school facilities undergo two assessments per year to prevent and respond to the presence of environmental health hazards.

Facilitated Plenary Discussion: Identifying Environmental Health Exposures In or Near Schools and Child Care Facilities

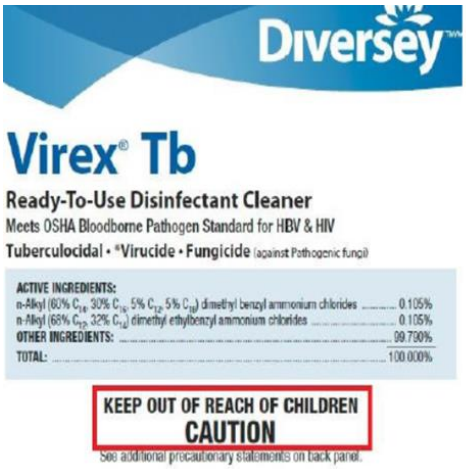
Participants identified key risks to children in schools and child care facilities, along with potential responses.

- ***Typically developing and at-risk children face different levels of risk:*** Participants noted that while all children face risks from environmental health hazards at school or in child care, a subset faces higher risk because of their elevated sensitivities or differential exposures to those hazards as a result of preexisting medical conditions, disabilities, etc.

- ***Potential responses:*** Participants made the following suggestions with regard to responding to and mitigating the environmental health risks children face in schools:

    - ***Establish federal standards requiring schools to notify parents and guardians in a timely fashion when maintenance, renovation, or construction is taking place within schools:*** Occupant health protections in schools under renovation are requirements for schools in New York State, Maryland, and several other states.[5] This could be similar to some requirements for the prior notification of the intended use of pesticides enacted in several states.

    - ***Establish federal standards for an item about the environmental health risks and conditions present in schools that are likely to affect children's ability to learn or to stay in school, including in Individual Education Plans (IEP) under the Individuals with Disabilities Education Act (IDEA), Section 504 of the Rehabilitation Act, and/or under the Americans with Disabilities Act (ADA):*** More research and further dialogue are needed to determine the best ways that children who may be impacted by environmental factors can be protected and accommodated. This could create an incentive for schools to address environmental health risks if they are held liable for environmental health hazards that affect a child's learning; at the least, it could serve as a way of making school personnel aware of the need to address environmental health hazards because some children will be adversely affected by their presence. In addition, individual environmental sensitivities (including to factors such as noise, lighting, heat, overcrowding, infectious



Hospital-grade disinfectant within reach of elementary students using the cafeteria.

[5] THS 2015.

diseases, and chemicals) should be recognized as a qualification for disability accommodations.

- ***Share information from NIOSH and OSHA written citations or reports and recommendations to schools regarding employee complaints about environmental health hazards in schools with state and local health agencies and with parents:*** When NIOSH is considering an adult worker Health Hazard Evaluation at a school or child care facility, it should work with EPA and CDC's Agency for Toxic Substances and Disease Registry (ATSDR) and the Pediatric Environmental Health Specialty Unites (PEHSUs), which could then address risks to children attending that facility and share information with concerned parents.

- ***Use financial incentives to encourage schools and health departments to take action on environmental health risks at or near schools and child care facilities.***

- ***Provide whistleblower protections to school personnel who report hazards and/or support parents who report hazards.***

- ***Improve data collection efforts around environmental health risks to children in schools:*** Participants suggested several ways to improve the collection of epidemiological information in existing tracking:

    - Integrating questions on environmental health risks into CDC's National Health and Nutrition Examination Survey (NHANES) and Behavioral Risk Factor Surveillance System (BRFSS) survey. These surveys collect nationally representative data.
    - In order to understand specific risks to children, CDC could oversample parents with school-aged children, as well as older students.
    - In 2016, the Department of Education Office of Civil Rights will be including chronic absenteeism data in the Civil Rights Data Collection. Participants suggested integrating questions around school facilities into that survey as well as enriching the detailed questions on the physical environment on the CDC's School Health Policies and Practices Study (SHPPS).
    - A participant also suggested including school-based health centers in future data response and tracking efforts because these centers have access to school and medical data and are often located in higher-risk schools, allowing for additional analysis of the risks affecting children with special needs. In order to do so, nurses and in-school healthcare providers should be trained to identify factors in schools that may contribute to acute health symptoms. Participants also emphasized the need to conduct an analysis of all existing data collection efforts and

systems that could be used to track environmental health risks to children in schools (including ATSDR, the National Center for Environmental Health (NCEH), National Institute of Environmental Health Sciences (NIEHS), EPA, and US Department of Education systems) to figure out how to integrate already existing systems. This could be done as a pilot study.

- ***Develop a robust surveillance system for identifying and tracking environmental health risks in schools:*** Participants emphasized the need to develop a surveillance system for school and child care facilities that is built on the tenets of continuing quality improvement, build consensus around which health outcomes to track in order to develop a surveillance system, and develop an action plan for measuring progress and implementing corrective actions.

Public Health Panel: Children's Environmental Health—The Needs and Perspective of State and County Health Departments

The following speakers gave presentations from the perspective of state and county health departments. The presentations are in Appendix 2.

- Clifford S. Mitchell, MS, MD, MPH, Director, Environmental Health Bureau, Prevention and Health Promotion Administration, Maryland Department of Health and Mental Hygiene.
- Angelo J. Bellomo, REHS, QEP, Director, Environmental Health Division, Los Angeles County Department of Public Health (DPH).

Cliff Mitchell and Angelo Bellomo

The speakers and participants discussed the current and potential public health monitoring and the enforcement capacity of state and county health departments with regard to schools and child care facilities, current environmental health training and needs, and the constraints that agencies are working within regarding environmental health in schools.

There was an informal consensus of the meeting that children's risks and exposures at schools and child care are truly a public health issue for public health professionals to address. Further, public health is about prevention, and to that end, the overall discussion should identify primary, secondary, and tertiary prevention steps.

- ***Examples presented:***

    - ***The Los Angeles County Health Department conducts comprehensive assessments of proposed school sites:*** California state law requires public health departments to review and approve proposed school sites. LA County established "buffer/ exclusion zones" prohibiting new schools from being located within 500 feet of freeways, other schools, housing, or other sensitive land-use sites. The county also recommended that construction of new schools within 1500 feet of a freeway, housing, or other sensitive land-use sites should include mitigation to reduce exposures (e.g., air filtration on HVAC systems and placement of outdoor recreational facilities as far as possible from the emission source). School board officials were also provided with a list of "high-risk" existing schools within their districts located within 500 feet of freeways.

    - ***The LA County Health Department has a comprehensive risk mitigation pilot project for toxic exposures:*** The LA County Toxic Threat Strike team (composed of representatives from the public health, public works, and fire departments, along with the county counsel and district attorney offices) is working in two highly burdened communities to reduce toxic risks. Utilizing CAL Enviro Screen 2.0, toxic risk rankings are based on pollution (e.g., ozone concentration, pesticide use, solid waste sites, and groundwater threats) and population characteristics (prevalence of children and elderly, rate of low-weight births, poverty, race and ethnicity, etc.). Risk reduction measures include notifying agencies, industry, and communities about existing risks, focused enforcement and site cleanup, protective criteria for permit decisions, enhanced environmental monitoring, and financial assistance. The expected outcomes for the pilot project include earlier engagement of community and local agencies, focused health-based efforts to reduce toxic exposures, improved conditions and reductions in cumulative risk, improved regulatory and local planning decisions via adoption of health-protective policies, and actions by facility operators to reduce toxic emissions and associated liability.

- ***Potential environmental public health prevention services:***

    - ***Local and state surveillance and measurement of children's environmental health:*** Participants noted that local and state health departments could develop new baseline data on children's environmental health, ascertain diagnoses of environmental health exposures, and measure progress related to preventing or mitigating environmental health exposures.

    - ***Data collection and monitoring:*** Conversations are needed on the kind of data that should be collected regarding environmental health risks in schools and how these data can be collected efficiently. The public health and education

communities should collaborate to determine the type of data that should be collected to monitor the impacts of environmental health on student achievement.

- ***Evaluation of and communication of exposure risks in schools:*** Public health departments could evaluate exposure risks and communicate the results to parents and school officials. This could help to protect the children most at risk.

- ***Improved design criteria for healthy and sustainable schools exist in various places, including at the US EPA Design Tools for Schools, US Green Building Council (USGBC - LEED) and the Collaborative for High Performance Schools (CHPS.net).***[6]

Water damaged, moldy ceiling tiles.

- ***Role of monitoring technologies:*** A participant suggested using technologies to help improve environmental health monitoring systems. Sensor technologies and data collection systems are becoming more sophisticated and cheaper and this could allow for real-time monitoring of environmental health risks.

- ***Current enforcement:***

  - ***Lack of enforcement measures:*** Guidance to facilitate school district adoption of voluntary environmental health compliance programs should be backed by independent enforcement and inspection measures.

- ***Potential enforcement:***

  - ***Complaint-based investigations could be performed by state and local health departments:*** A rapid response system should be included in this system.

  - ***Routine, regular inspections:*** State and local health departments could identify health and safety standards and conduct routine (unannounced) inspections to

[6] Post-meeting editors' note: A national report analyzing how the design specifications of each standard take into account children's needs for healthy indoor learning spaces is needed.

assess compliance. Potential environmental health inspections could encompass injury and illness prevention, asbestos management, fire/life safety, campus security, chemical safety, pest management, lead paint management, restroom facilities, indoor environmental quality, facilities maintenance, violence prevention, emergency preparedness, traffic and pedestrian safety, science lab safety, construction safety, and off-site exposure. Those schools in noncompliance could be required to implement a corrective actions plan (which is sent into the local and/or state health department) to achieve compliance. The Los Angeles County Office of Environmental Safety Facility Inspection Program could be used as a model. In addition to conducting routine inspections of schools twice per year and issuing corrective action citations, the county also developed a health and safety compliance scorecard for informing school board members, enforcing compliance, benchmarking school districts within the county to identify underperformers, and measuring overall county-level improvements year to year.

- ***Training needs:***
    - ***Training of both school personnel and of public health staff is needed for addressing environmental health issues in schools.***
- ***Health agency constraints:***
    - ***Lack of statutory authority:*** In some places, decision-making authority over schools and the environmental health in schools rests at the local level, which makes it difficult for state health departments to intervene. More collaboration is needed between state and local government departments and school officials.
    - ***Lack of consistent champions in schools:*** This makes it difficult to sustain environmental health programs and momentum within schools, absent any external oversight or formal inspections.
    - ***FERPA constraints on public health researchers/departments:*** The Family Education Rights and Privacy Act (FERPA) inadvertently prevents critical health data from children's school records from being shared with public health departments and public health researchers. Sharing data could improve the understanding of and subsequent interventions for environmental health risks in schools. FERPA could be amended to exempt public health departments in order to provide them easier access to this essential data, and then data could be shared with individual identifiers removed.
    - ***Administrative and technology barriers that inhibit data sharing:*** Due to the vast disparities in local and public health departments across the US, some

health departments still use paper records for monitoring exposures, making it difficult to easily share information across localities.

- ***Workforce needs:*** Public health departments are in serious need of staff with backgrounds in clinical toxicology and environmental medicine.

- ***Funding and resources:*** Public health departments have become particularly constrained as a result of longstanding declining budgets. Departments could undergo a priority-setting exercise to reallocate funding towards programs that are showing success in order to free up funds for environmental health programs in schools.

Parent Case Report 3:

SN is an 8 year old boy who attends a public school in a county of one of the mid-Atlantic states. His mother called the Mid-Atlantic Center for Children's Health and the Environment because of problems with respiratory distress while at school and no problems at home. The mother was able to supply pictures of various sites within the school that appeared to have mold; and she reported numerous anecdotes from other parents and school personnel about health complaints that those individuals associated with exposure *to what they believed were mold. The mother was also told by school personnel that although they had concerns about their own health and know of staff members who had left the school, they were unwilling to confront the system with the problem. The child's physician found no problem other than the wheezing and consultation with several pediatric specialists found no other problem. The mother was requesting transfer to another school building and was refused. The Mid-Atlantic Center provided a letter recommending the transfer. The mother was initially rebuffed and then came into possession of a draft letter to her which acknowledged the long-standing mold and moisture problem in the building. The final letter had that information removed. Suddenly, the school reversed course and agreed to transfer the child.*

Full Workshop Facilitated Discussion: Recommendations

Based on the breakout discussions and the input from the public health panel, participants identified a suite of potential policy and research recommendations (including possible pilot projects) for federal, state, local, and school officials, as well as other stakeholders, such as advocacy organizations and research institutions.

- ***Communication and advocacy efforts*:** Advocacy organizations should coordinate a strategy to demonstrate the urgent moral, ethical, and legal imperative to care for children where they live, learn, and play and to integrate children's environmental health into education and into public health.

- They should convey the message that environmental health considerations should be taken into account in siting, designing, constructing, renovating, and maintaining educational facilities and that education personnel and officials should receive training in environmental health considerations relevant to schools and child care facilities.

- Advocacy groups should communicate a sense of urgency to lawmakers and the public about the 55 million-plus children at risk due to the current failure to take environmental health considerations into account. CDC's Whole School, Whole Community, Whole Child frame (which does not address school environments or school facilities) could offer a model for a unified approach to integrating the care and health of facilities into the school environment.

- It was also the sense of the workshop that, while there are scores of national organizations concerned about traditional "school health," this new effort is distinct from it. As a result, it should be known as "Environmental Health at School," as the panel and workshop are titled.

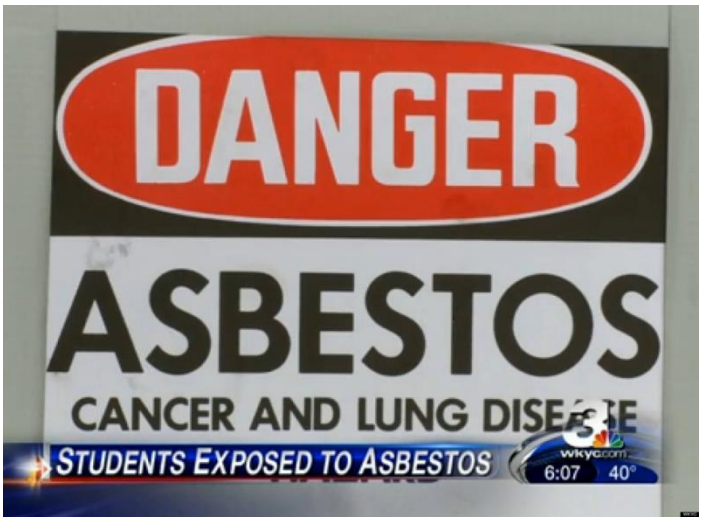
- To support these efforts, a national network of stakeholders should be created to engage champions in states and localities and leverage congressional support. Foundations could be engaged to support these efforts. Advocates should make the case for why it is important to solve this problem by identifying cases based on solid data and by arranging for people to tell their stories to members of Congress and attend regular hearings on Capitol Hill, creating a drumbeat. Advocacy organizations should also identify model districts and/or states to promote as environmental health champions. This kind of advocacy approach could create the conditions needed for child-protective policy opportunities and state-level pilots.

- A potential opportunity for helping to create this groundswell is to link these efforts to others in a robust implementation of the 2015 Blueprint for Protecting Children's Environmental Health: An Urgent Call to Action, led by the Children's Environmental Health Network. In addition, the national Coalition for Healthier Schools, led by Healthy Schools Network, offers a strong base of policy supporters who have successfully championed EPA funding and secured new authorizations for EPA and for the Department of Education, as well as shaped and won laws in multiple states.

- Collaborative efforts such as white papers for the incoming federal administration and visits to Capitol Hill are crucial to policy reform, as are new publications, briefings, a media strategy, and presentations at key conferences. Healthy Schools Network, collaborating with CEHN and environmental justice and disability advocates, circulated a widely read white

paper to the Obama transition team in late fall 2008, which led directly to EPA adopting a clean, green, and healthy schools initiative. Also, since short-term, local/regional pilots may be easier to get off the ground, it will be essential to engage the National Conference of State Legislatures and the National Governors Association.

- ***Legislative and regulatory changes:*** The federal government could develop minimum-level standards for protecting children's environmental health in schools and child care facilities. Federal requirements and ideas could be derived from exemplary state models and best practices. States could adopt standards for pollutants and building conditions, require regular inspections and monitoring of school facilities, develop enforcement plans to hold school officials accountable, create statewide reporting systems for receiving and responding to complaints, and identify state agencies (e.g., the state department of health) and state officials responsible for leading this charge and directing state-level environmental health programs for schools and child care.



In addition, advocates could explore mechanisms for integrating or borrowing from NIOSH and OSHA models of worker health and safety the independent protection of children in schools and child care facilities. To accomplish this, the United States Congress and state governments could take actions to afford protections to children in schools and child care facilities that are stronger than the protections afforded to adults in schools. For example, federal amendments could be made to require state educational agencies to incorporate children's environmental health into their existing school policies. Also, the CDC could strengthen the coordination of its programs to ensure that children's environmental health in schools and child care is thoroughly addressed and prioritized.

A strategy to accomplish these policy and regulatory changes could involve, among others, the National Governors Association, the National Council of State Legislatures, the Department of Homeland Security, the Federal Emergency Management Agency, the Department of Education, the White House Council for Environmental Quality, state and local health departments, school personnel, child care professional associations, universities and their schools of education, and the President's Task Force on Environmental Health and Safety Risks to Children.

Additional suggestions for important policy changes include:

- Address FERPA data collection issues by amending FERPA to exempt health information to be used by public health departments and public health researchers.

- Institutionalize and integrate children's environmental health into health impact assessments and all policies using a "health in all policies" approach.

- Integrate children's environmental health into community health needs assessments, the CDC's School Health Policies and Practices Study (SHPPS), and the preventive health component of the Affordable Care Act as ways to initiate collaborative work across program areas. Bring school nurses and school-based health clinics into these assessments and studies.

- Use Healthy Homes and Asthma-Friendly Schools programs as primary management and prevention models for state asthma programs.

- Integrate children's environmental health in schools and child care facilities into the US Department of Education's Office of Civil Rights data collection survey.

- Use civil rights statutes, the ADA, Section 504 of the Rehabilitation Act, and the Individuals With Disabilities Education Act as triggers for action on disability accommodation, chemical and other environmental sensitivities, lead poisoning, and asthma (i.e., surveillance of school environments and the health of school facilities to ensure they remain healthy and accessible for all children). Participants noted that it is important to recognize children with specific needs, but also keep in mind goals for the health of all children.

- Require that chronic absenteeism be reported to public health departments as a trigger for an immediate response. Reasons for chronic absenteeism should be included in reporting requirements; however, it is important to note that attribution can be difficult to determine. This issue could be explored within the National Collaborative for Education and Health.

- ***Commission Healthy Children, Healthy Schools* reports:** To support policy changes, one or more major new reports on the state of children's environmental health in schools and child care facilities and on recommended changes is needed. A National Academies body would do high-quality, high-traction reports. One could review the existing literature, conduct a study of the scale of children's environmental health needs in schools and child care facilities, and consider the prevention and mitigation of primary and secondary environmental health risks to children in these venues. The Institute of Medicine (IOM) report *Climate Change, the Indoor Environment, and Health* could serve as a model for this report. A new Healthy Children, Healthy Schools report could include the following elements:

Unsafe storage of chemicals in a school.

  - a synthesis of studies linking environmental health to academic performance
  - a synthesis of existing policies and programmatic interventions, along with an analysis of the interventions that have been most effective in improving outcomes
  - a cost-benefit analysis of prevention strategies
  - a study of the social and economic costs to society associated with environmental hazards in schools (this should be aligned with the social determinants of health)
  - an exploration of the relevant health equity, civil rights, and social justice concerns
  - an in-depth analysis of the causes of inadequate funding for school facilities
  - an identification of areas for further research
  - an analysis of how the federal Department of Education's Office of Civil Rights has handled environmental health issues in disability accommodation and facility access requests
  - given that all states compel children to go to school, a legal analysis of school and/or state agency liability for children's environmental health at school
  - test cases regarding accommodating children with asthma in child care facilities and schools.

At the same time, the President's Task Force on Environmental Health and Safety Risks to Children could convene a workgroup and issue a report on environmental health at school, recommending roles and needed actions for EPA, CDC, and the Department of Education to undertake to establish both a prevention and an intervention program for children in schools and child care facilities and a National Healthy Children, Healthy Schools Commission to develop and implement a coordinated, time-lined federal strategy on children's environmental health and school environments. This report could also identify characteristics of the best places to conduct pilots on a state level. Some participants shared that the President's Task Force is looking for new ideas, so this presents a good opportunity for collaboration. In addition, the White House Initiative on Chronic Absenteeism was recently announced, so participants suggested exploring how the Task Force and the Initiative could be linked.

Additional suggestions from several participants included:

- encouraging EPA or CDC to request a report from the Surgeon General
- developing a collaborative NGO white paper for the incoming presidential administration on opportunities for children's health protections and on expanding EPA's existing Clean, Green, and Healthy schools initiative and its education and training programs for school leaders.

- ***Prevention programs*:** There could be a two-tiered approach to inspections. School districts could conduct maintenance, monitoring of identified risk factors, and inspections. To accomplish this, a committee of school nurses, facilities staff, and parents or an independent, state-licensed third party entity could conduct regular walkthroughs. A regulatory authority such as state or local health departments could conduct routine regulatory inspections to assess environmental health and safety conditions in schools and child care facilities and benchmark progress. As these would be required inspections, there could be a charge for carrying them out.

    - The US EPA Indoor Environments' training modules on school environments and the Children's Environmental Health Network's Eco-Healthy Child Care training and endorsement programs, whereby child care facility owner-operators are certified, could serve as models or pilots for programs, as could Healthy Schools Network's user-friendly guides and fact sheets designed to help parents and others understand and address school environmental issues.

    - The school board, parents, and the above-described Healthy Children, Healthy Schools Commission would be notified of the assessment results, which would be disseminated broadly and posted on the Commission's website. If the school board does not act to remedy any shortcomings, the state or local health department could intervene. In order to implement such a program, more research on children's exposures is needed.

- As another possible approach, participants also suggested including environmental health considerations in the fire department's annual inspections.

- ***Identification of at-risk children:*** The below tools and mechanisms could help to identify at-risk children. The group indicated that more thought should be given to prioritizing these examples of potential mechanisms, grouped by primary, secondary, and tertiary public health prevention actions. The suggested mechanisms included:

  - ensure that at-risk children receive appropriate assistance and improve identification of those that are medically fragile
  - use surveillance systems to identify children who are affected and vulnerable
  - establish a question about child vulnerability to environmental factors on 504 and Individual Education Plan (IEP) forms
  - develop a list of children with environmental sensitivities who might qualify for a Section 504 accommodation plan, or other disability accommodations
  - require school officials to notify parents of activities occurring in schools that could present risks to all children and to children with environmental accommodations
  - capitalize on individual health care plans (IHPs, created by school nurses)
  - incorporate children's health in schools and child care facilities into the Environmental Public Health Tracking Program, possibly through a partnership with the states or the PEHSUs
  - include survey questions about environmental health risks to children in the National Health and Nutrition Examination Survey, oversample for children's exposures, and use the results to identify long-term trends
  - use the Youth Risk Behavior Surveillance System (YRBSS) to identify behavioral risk factors
  - integrate nationally unique school building identifiers into electronic medical records
  - use syndromic surveillance to receive chief complaints
  - develop recommendations for improving SHPPS (e.g., including IAQ, idling, IPM)
  - incorporate facility information into the Department of Education's Office of Civil Rights data collection and research the office's regional effectiveness in dealing with environmental health hazards in schools

Poorly labeled mercury.

- integrate environmental health into the chronic absenteeism initiative
- use information from asthma and diabetes tracking programs
- use information from blood lead monitoring programs
- establish a system for receiving and responding to complaints/documentation from school nurses
- leverage the Individuals with Disabilities Education Act (IDEA), which includes the Child Find mandate, and include environmental factors in the evaluation of the needs of vulnerable children.

- ***Intervention system:*** The following mechanisms and tools could be pursued to establish effective intervention systems across the country:

    - An independent program for children, with elements adapted from NIOSH and from OSHA worker research and protection programs might be developed to help protect children in their "workplaces" (i.e., schools, child care). Participants suggested giving more thought to what this would look like and how and when to engage PEHSUs.

    - The PEHSUs and/or state health departments could receive complaints about environmental exposures at schools and child care facilities and work with state and local health departments to conduct onsite investigations, using standardized data templates. Complaints and pediatric medical records could be tagged with a school identifier and that information would be shared on the Healthy Children, Healthy Schools Commission website along with the results of routine inspections.

    - In order to support an effective intervention program, participants suggested developing state-specific handbooks of state regulations and the rights of disabled children as a desktop reference for dealing with children's school-based risks and exposures. Healthy Schools Network commissioned and published the nation's first such handbook for New York State and New York City over 15 years ago; it can serve as a model for other states. In addition, participants noted that health care provider training on recognizing children's environmental health exposures and related outcomes is needed.

    - Additional recommendations included:

        - An ombudsman could be established as a single point of contact for parents.
        - Parents filing complaints should receive a response and be able to track the timely resolution.
        - There should be provisions for citizen suits.
        - There should be whistleblower protections.

- ***Tracking program:*** As mentioned above, a National Healthy Children, Healthy Schools Commission could be created and charged with stimulating data collection, management, and research. It could host the website containing the results of school assessments and registered complaints. The website could also offer the option to register a new complaint. The Commission could also have an enforcement role, perhaps in cases where state and local health or education departments have not intervened. Data sources that could be connected with or feed into the Commission's database include poison control centers databases, Healthy Schools Network data, the Environmental Public Health Tracking Network, and absenteeism reports.

Attendees of the facilitated workshop.

- ***Pilot studies of prevention, intervention, and tracking programs:*** Pilots could be conducted by PEHSUs, federal or state agencies in partnership with local school districts, the Association of State and Territorial Health Officials (ASTHO), the National Association of County and City Health Officials (NACCHO), and/or the Council of State and Territorial Epidemiologists (CSTE). One way to identify an appropriate location for a pilot study is to determine where there is alignment of the needed partners. It is important to realize that various state agencies each have different kinds of information about sites, schools, and environmental issues and risks: e.g., pollution control might know of a chemical spill or misuse or toxic site; health departments about indoor air, asthma, drinking water, or poor sanitation at schools; education departments about test scores and absenteeism; labor, State OSHA Programs, and occupational health services about worker health and safety; and emergency squads about ambulance runs and or fire safety; yet none of these disparate data sources are yet being collected and compared to identify where the risks to school children are greatest or the frequency of certain types of issues, which could lead to targeted preventive actions.

- ***Training/education/guidance programs:*** Participants identified training needs and potential programs for four audiences: parents and guardians, teachers and principals,

health care providers, and public health professionals. The proposal for each audience is described below.

Participants suggested that regional training pilots could be facilitated by PEHSUs, federal agencies (CDC, EPA, and National Institute of Environmental Health Sciences (NIEHS)), state collaborations, and academic institutions. For each set of stakeholders, they should be disseminated not only in places that are easy to access and have a lot of resources, but also in medium and difficult environments.

- **For parents/guardians:** PEHSUs and federal agencies, local and state health departments, and ATSDR regional representatives could play a role in providing training for parents and guardians. Information and training materials such as those hosted by Healthy Schools Network can provide a model. The trainings could be offered through the PTA/PTO or provided in parent handbooks, FAQs, and other written materials. Participants noted that CDC's healthychildren.org has a set of resources for its school health program. The trainings could cover general health information (including topics such as temperature, moisture, and ventilation), specific concerns for children at greater risk (sensitive populations), and whom to call.

- **For teachers and principals and others:** Educational unions or employee associations could enhance and target environmental health training for teachers and other school personnel (custodians, nurses, principals, child care operators, etc.). It could be incorporated into core curriculum and continuing education (CE) opportunities could be offered. There could also be in-services from local health departments, and the information could be offered through employee handbooks. The training could cover communication training, why "environmental health" and healthy facilities are important, and what not do (e.g., use of deodorizers or certain cleaning products).

- **For health care providers:** PEHSUs or federal agencies could offer training to health care providers through grand rounds, publications through official organizations, and online mechanisms. The training could be a Continuing Medical Education (CME) requirement. It could include how to recognize where there is a school- or child care-based problem, how to take an environmental health history, whom to call (e.g., local and state health departments, PEHSUs).

- **For public health professionals:** PEHSUs or federal agencies could provide local public health professionals with a network/mentorship program for sharing best practices, graduate trainings, and an environmental health certificate (CEH) or continuing education. Local public health professionals could access trainings and information through networks/mentorships, graduate training/CE courses, and meetings of local public health departments, associations, and NACCHO.

Workshop Summary and Next Steps

Healthy Schools Network closed the workshop by informing the group that a meeting summary, including their suggestions and recommendations, would be developed, revised by the members of the organizing committee and breakout group leads, and shared with the participants by the end of December. The additional goal is to share the report and its recommendations with a larger group of stakeholders at a national gathering organized by Healthy Schools Network, proposed for late spring 2016. The Network's executive director, Claire Barnett, encouraged any participants interested in contributing to the national gathering to get in touch with her.

In concluding, Ms. Barnett thanked Healthy Schools Network's project consultant Jerome Paulson, MD, her Board of Directors, the attendees, meeting sponsors, presenters, and members of the organizing committee for their participation and contributions to the success of the meeting.

Appendix 1: Attendees

Organization	Name
Advocates for Environmental Human Rights (New Orleans, Louisiana)	Monique Harden, JD, Co-Director & Attorney
Association of State and Territorial Health Officials (ASTHO)	Kerry Wyss, MEM, Director, Environmental Health Kathleen Dolan, MHS, Senior Analyst, Environmental Health
Centers for Disease Control and Prevention, National Center for Environmental Health (NCEH) and Agency for Toxic Substances and Disease Registry (ATSDR)	Bill Cibulas, PhD, MS, Acting Associate Director for Science & Senior Advisor for Public Health (designee for Patrick Breysse, Director)
Center for Effective Government	Ron White, MS, Director of Regulatory Policy
Children's Defense Fund	Kathleen King, Deputy Director of Child Health Policy
Children's Environmental Health Network (CEHN)	Nsedu Obot Witherspoon, MPH, Executive Director Kristie Trousdale, Program Manager
Consultant, formerly with Massachusetts Department of Public Health	Suzanne Condon, MSM
Council of State and Territorial Epidemiologists (CSTE)	Melissa Murray Jordan, MS, Senior Environmental Epidemiologist, Florida Department of Health
County of Los Angeles Department of Public Health	Angelo Bellomo, Deputy Director for Health Protection
Education Facilities Clearinghouse	G. Victor Hellman, Ed. D, Research Project Director
Environmental Law Institute	Tobie Bernstein, JD, Senior Attorney & Director of Indoor Environments & Green Buildings Program
Healthy Schools Campaign	Mark Bishop, Vice President of Policy
Healthy Schools Network	Claire Barnett, MBA, Executive Director
Indiana University School of Public Health	Lloyd Kolbe, PhD, Emeritus Professor of Applied Health Science
Lawrence Berkeley National Laboratory at University of California at Berkeley	William Fisk, MS, Senior Scientist and Leader, Indoor Environment Group, Lawrence Berkeley National Laboratory, University of California at Berkeley
Maryland Department of Health and Mental Hygiene	Clifford Mitchell, MD, Director, Environmental Health Bureau, Prevention and Health Promotion Administration
National Council on School Facilities, Board of Directors	Barbara Bice, Regional Board Member from Maryland

Mid-Atlantic Center for Children's Health and the Environment at Georgetown University (MACCHE)	Laura Anderko, PhD, RN, Director and Professor, Robert and Kathleen Scanlon Chair in Values Based Health Care, School of Nursing & Health Studies
National Association of City and County Health Officials (NACCHO)	Jennifer Li, MHS, Director for Environmental Health & Health & Disability
National Association of School Nurses	Donna Mazyck, MS, RN, NCSN, Executive Director Shirley Schantz, RN, Ed D, Director of Training
National Education Association (NEA) Healthy Schools Caucus	Chip Halverson, ND, Co-Founder and Member
National Institute for Occupational Safety and Health (NIOSH)	John Howard, MD, JD, MPH, Director
Natural Resources Defense Council	Erik Olson, Senior Strategic Director for Health & Food
Oklahoma Parent	Kim Voss
Pediatric Environmental Health Specialty Unit's Network and the American Academy of Pediatrics	Jerome Paulson, MD, Professor Emeritus of Pediatrics, School of Medicine & Health Sciences & Professor Emeritus of Environmental & Occupational Health, Schools of Public Health & Health Services
School-Based Health Alliance	Erin Ashe, Program Manager (designee for Andrea Shore, Director of Programs)
Tennessee Parent and Parents for School Safety	Daniela Kunz
Center for Cities + Schools at University of California Berkeley	Jeff Vincent, PhD, Deputy Director
US Environmental Protection Agency (EPA)	Ruth Etzel, MD, PhD, Director, Office of Children's Health Protection (OCHP) Khesha Reed, Associate Director, OCHP; Brenda Doroski and Michele Curreri (designees for David Rowson, Director, Indoor Environments Division, Office of Radiation and Indoor Air)
Funders	
Grantmakers In Health	Colin Pekruhn, Program Director
W.K. Kellogg Foundation	Ellen Braff-Guajardo, Program Officer, Healthy Kids Team
Facilitation Team	
RESOLVE	Dana Goodson, Mediator Kim Rustem, Program Associate

Healthy Schools Network staff support: Claire Barnett, Executive Director; Lauren Jesmer, Program Manager; Graduate Interns Kate Topalis (Georgetown) and Alison Baxter (Rockefeller College, University at Albany)

Consultant to Healthy Schools Network Jerome A. Paulson, MD

Cover Design: Primeau-Fahey Studios

Appendix 2: Speakers and Presentations

Kick-Off Panel and Public Forum:

- John Howard, MD, MPH, JD, Director, National Institute for Occupational Safety and Health and the Administrator of the World Trade Center Health Program, US Department of Health and Human Services.
  http://healthyschools.org/documents/Howard_NIOSH_and_Schools.pdf

    - *Biography:* John Howard serves as the Director of the National Institute for Occupational Safety and Health and the Administrator of the World Trade Center Health Program at the US Department of Health and Human Services in Washington, DC. He first served as NIOSH director from 2002 through 2008, and again from 2009 to the present. In 2015, Dr. Howard was re-appointed to an unprecedented third six-year term by Dr. Thomas Frieden, the Director of the Centers for Disease Control and Prevention. Prior to his appointment as Director of NIOSH, Dr. Howard served as Chief of the Division of Occupational Safety and Health in the California Department of Industrial Relations, Labor and Workforce Development Agency, from 1991 through 2002. Dr. Howard received his Doctor of Medicine from Loyola University of Chicago in 1974, his Master of Public Health from the Harvard School of Public Health in 1982, his Doctor of Law from the University of California at Los Angeles in 1986, and his Master of Law in Administrative Law from the George Washington University in Washington, DC. in 1987. Dr. Howard is board certified in internal medicine and occupational medicine. He is admitted to the practice of medicine and law in the State of California and in the District of Columbia, and he is a member US Supreme Court bar. He has written numerous articles on occupational health law and policy and serves as a professorial lecturer in environmental and occupational health in the Milken Institute School of Public Health at The George Washington University in Washington, DC.

- Ruth Etzel, MD, PhD, Director, Office of Children's Health Protection, Environmental Protection Agency and Senior Advisor to the Administrator.
  http://healthyschools.org/documents/Etzel_Final.pdf

    - *Biography:* Ruth A. Etzel, MD, PhD is Director of the Environmental Protection Agency's Office of Children's Health Protection and a senior advisor to the Administrator. Previously, Dr. Etzel was a Professor of Epidemiology at the University of Wisconsin–Milwaukee. She received her MD from the University of Wisconsin School of Medicine and completed residencies in Pediatrics and Preventive Medicine in Chapel Hill, North Carolina. Dr. Etzel was selected for the prestigious Robert Wood Johnson Clinical Scholars Program, and during her fellowship discovered that protection from environmental contaminants was integral to keeping children and their families healthy. She received her PhD in

Epidemiology from the University of North Carolina School of Public Health. She was a pioneer in studying the health effects of exposure to secondhand smoke among infants; her work led to nationwide efforts to reduce indoor exposures to tobacco, including the ban on smoking in US airliners. As a Commissioned Officer in the United States Public Health Service, Dr. Etzel served in numerous public-sector leadership positions including Centers for Disease Control and Prevention (Founding Chief of the Air Pollution and Respiratory Health Branch), Department of Agriculture (Director of the Division of Epidemiology and Risk Assessment), and Indian Health Service (Research Director at the Alaska Native Medical Center). She is a courageous leader in bringing health risks to children to public attention and working collaboratively towards solutions. In 1989, after a small child developed acrodynia (mercury poisoning) from breathing mercury vapor from paint containing mercury that had been applied to the walls inside his house, she made a compelling case to US Environmental Protection Agency for the removal of mercury from interior latex paints. In response, the EPA quickly reached an agreement with the US paint companies to stop the addition of mercury compounds to interior latex paints. Dr. Etzel served as the Senior Officer for Environmental Health Research at the World Health Organization from 2009 to 2012. She is the founding editor of the influential book *Pediatric Environmental Health* (a third edition was published in 2012). This book has helped to train thousands of doctors who care for children about how to recognize, diagnose, treat, and prevent illness among children from hazards in the environment. She co-edited the *Textbook of Children's Environmental Health,* published in 2014. In addition to being board certified in Pediatrics, Dr. Etzel is board certified in Preventive Medicine and served for nine years on the American Board of Preventive Medicine. She was a member of the National Heart, Lung, and Blood Institute's First Expert Panel on the Management of Asthma. Dr. Etzel has received numerous awards, including the 2007 Children's Environmental Health Champion Award from the US Environmental Protection Agency, the Distinguished Service Award from the US Public Health Service, and the Arthur S. Flemming Award from The Trachtenberg School of Public Policy and Public Administration at The George Washington University.

- Suzanne Condon, MS, retired from her recent position as Associate Commissioner and Director, Bureau of Environmental Health, Massachusetts Department of Public Health. http://healthyschools.org/documents/Condon_ACA_and_Schools.pdf

    - *Biography:* Suzanne K. Condon recently retired from her position of Associate Commissioner and Director of the Bureau of Environmental Health at the Massachusetts Department of Public Health. In that role Ms. Condon led a team of public health professionals, including epidemiologists, toxicologists, environmental health scientists, consultant physicians, indoor air and emergency response specialists, regulatory inspectors, Geographic Information Systems (GIS) specialists, and environmental health educators for 26 years. She holds a BS

from Bridgewater State College, and an MS from Emmanuel College. In 2003, Ms. Condon was named a Distinguished Alumna at Bridgewater State College and received the Adrian Rondileau Award for professional achievement and community service. During her tenure, the Environmental Health programs in Massachusetts have conducted nationally recognized epidemiological studies. She has also been a national leader in addressing health disparities. Ms. Condon was instrumental in establishing the MDPH Diversity Initiative and Council. She has been the recipient of the US Agency for Toxic Substances and Disease Registry special services award and a number of outstanding service awards from various organizations. She presented at the recent 2015 APHA/ATSDR webinar on state and federal partnerships in addressing environmental hazards and health effects. She served as national Chair of the ASTHO State Environmental Health Directors group from 2012-2014. Ms. Condon has appeared on numerous national news and science programs, including ABC's 20/20, CBS Nightly News, Nightline, NOVA, and ESPN 60, to name a few.

- William Fisk, MS, Senior Scientist and Leader, Indoor Environment Group, Lawrence Berkeley National Laboratory, University of California at Berkeley. http://healthyschools.org/documents/Fisk_IAQ__in_Schools.pdf

    - *Biography:* William Fisk is a Senior Scientist (mechanical engineer) and is the leader of the Indoor Environment Group. He has more than 30 years of experience in research on the interrelated issues of building energy performance, ventilation, indoor environmental quality (IEQ), and occupant health and performance. His research focuses primarily on energy efficient methods of maintaining and improving ventilation and IEQ in commercial buildings and on quantifying the impacts of building ventilation and IEQ on health and performance. He is a fellow of ASHRAE and a member of the Academy of Indoor Air Sciences, and he serves on the editorial board for *Indoor Air Journal.* He is an author of approximately 100 refereed archival journal articles or book chapters. He has BS and MS degrees in mechanical engineering.

Reality Check: Community-Based Panel:

- Kimberly Voss, Oklahoma Parent. *"Reality Check."* *http://healthyschools.org/documents/Voss_IAQ.pdf*

    - Biography: Kimberly Voss, BS, is the mother of three daughters, her oldest adult daughter having multiple disabilities. Ms. Voss is a dedicated advocate for individuals with disabilities, as well as an author, software designer, and speaker on advocacy, inclusion, and technology. She is the author *of Teaching by Design: Using Your Computer to Create Materials for Students with Learning Differences* (Woodbine House, 2005), as well as a number of software applications. All address the need for creating meaningful and appropriate instructional materials for individuals with disabilities. She has served on a number of disability-related

local, state, and national boards, including the National Down Syndrome Congress. She also served as the Board Chair of the Oklahoma Disability Law Center, Oklahoma's Protection and Advocacy (P&A) system. Her advocacy took a different direction following a toxic exposure at the public high school which two of her daughters attended. Both girls were injured by environmental exposures, eventually resulting in a series of lawsuits. Ms. Voss met with the Governor of Oklahoma and a US Senator representing Oklahoma in an unsuccessful effort to effect permanent change related to indoor air quality in schools. She has a BS in Biochemistry and in Geology from Louisiana State University. She and her husband, Harold M. Voss, Jr., MD, and her family, reside in Tulsa, Oklahoma.

- Monique Harden, JD, Co-Director and Attorney, Advocates for Environmental Human Rights (New Orleans, Louisiana). "No More Schools on Dumps: Breaking the Cycle in New Orleans, L.A." http://healthyschools.org/documents/Harden_No_More_Schools_on_Dumps.pdf?utm_campaign=share&utm_medium=copy

    - *Biography:* Since 1996, Ms. Harden has provided legal counsel and advocacy support that have helped community organizations win important environmental justice victories. In 2003, Ms. Harden, along with Nathalie Walker, co-founded Advocates for Environmental Human Rights. Ms. Harden is a graduate of The University of Texas School of Law (1995), and received a BA from St. John's College (1990). Ms. Harden has authored and co-authored numerous reports and papers on environmental justice and human rights issues. Her advocacy work has been featured in television, radio, and print news, as well as books, magazines, and documentaries.

- Daniela Kunz, Tennessee Parent and Parents for School Safety. http://healthyschools.org/documents/Kunz_Toxic_products_at_school.pdf

    - *Biography:* Daniela Kunz is married and a mother of three. She was born and raised primarily in Liechtenstein, but also lived in Italy for four years. She received her education in both Liechtenstein and Italy and obtained an Associate's Degree in Banking before immigrating to the United States in July 1996. Between 1999 and 2009, most of her time went to medical/scientific research to find the reason for her family's diagnosed heavy metal toxicity, mercury poisoning, and other chemical sensitivities, as well as researching how to protect against more environmental toxins. When her youngest son entered kindergarten in 2009, she discovered that the schools allowed practices which exposed children to chemical dangers and to pollutants in the indoor air. Since then she has become a voice for the students in her community and in Tennessee for a toxin-free school environment. In 2012 she founded her grassroots group Parents for School Safety, launched some events, and wrote editorial letters to educate school officials and the community

Keynote Address: Environmental Health at School: Ignored Too Long:

- Jerome A. Paulson, MD, FAAP, Professor Emeritus of Pediatrics, George Washington University School of Medicine & Health Sciences and Professor Emeritus of Environmental & Occupational Health, George Washington Milken Institute School of Public Health. *"Who's In Charge of Children's Environmental Health in Child Care Settings and Schools."* http://healthyschools.org/documents/Paulson_Who_s_In_Charge.pdf

    - *Biography:* Jerome A. Paulson, MD, is an internationally recognized expert on environmental problems that impact on the health of children. He has frequently testified before Congress or participated in Congressional briefings on environmental health issues including air pollution, water pollution, lead poisoning, and unconventional gas extraction (fracking). He has advised health professionals, parents, lawyers, and others on a wide range of topics including lead exposure, mercury exposure, damp buildings and mold, asthma, toxicants from an asphalt plant, exposures to radioactive materials, exposure to brominated flame retardants, and other environmental health hazards. He has lectured in numerous venues in the United States and overseas on pediatric environmental health topics including climate change, environmental health policy, reform of the Toxic Substances Control Act (TSCA), and other issues.

Presentation: Environmental Health of School Facilities:

- Barbara Bice, RA, Southern Region Representative, National Council on School Facilities Board of Directors and Chief, Maryland State Department of Education School Facilities Branch, Maryland State Department of Education. *"Environmental Health in School Facilities."* http://healthyschools.org/documents/Bice_EH_in_School_Facilities.pdf

    - *Biography:* Barbara Bice is chief of the Maryland State Department of Education School Facilities Branch and staff to the Interagency Committee on School Construction. She has 28 years of experience with K-12 facilities planning, design, construction, and maintenance and nine years of experience in higher education administration. Ms. Bice is a graduate of Syracuse University and is a licensed architect. She has written a number of facilities planning guidelines for public schools; serves on several boards, including the National Council on School Facilities and the Maryland Correctional Enterprises Management Council; and is active in the Maryland/District of Columbia Chapter of the Association of School Business Officials International.

Public Health Panel: Children's Environmental Health–The Needs and Perspective of State and County Health Departments:

- Angelo J. Bellomo, REHS, QEP, Director, Environmental Health Division, Los Angeles County Department of Public Health (DPH). *"Perspective on Reducing Health and Safety Risks at School."* http://healthyschools.org/documents/Bellomo_EH_in_Schools2.pdf

- Biography: Angelo J. Bellomo is Deputy Director for Health Protection for the County of Los Angeles Department of Public Health. Previously he was Director of Environmental Health for Los Angeles County. Before coming to the Department of Public Health, Mr. Bellomo was Director of Environmental Health and Safety for the Los Angeles Unified School District, where he led reforms in the areas of school emergency planning, sustainable building design, and regulatory review of proposed school sites. Mr. Bellomo began his work in environmental health in 1973. In 1981, he was appointed by the Governor to serve as California's first Chief of Permits, Surveillance and Enforcement within the Toxic Substances Control Division. Mr. Bellomo has held positions in both the public and private sectors and has carried out a range of assignments dealing with the assessment of environmental risks and reforms in environmental public policy. Mr. Bellomo has served on US EPA's Children's Health Protection Advisory Committee and CDC's Board of Scientific Counselors. Mr. Bellomo currently heads the County's Toxic Threat Strike Team, formed by the Los Angeles County Board of Supervisors and directed to work with local, State, and Federal authorities to reduce the toxic risk associated with noncompliant facilities situated in close proximity to people. Mr. Bellomo's leadership in the environmental health field has been recognized by the California Legislature, US EPA, California League of Conservation Voters, and National Environmental Health Association.

- Clifford Mitchell, MD, MPH, MS, Director, Environmental Health Coordination and Prevention Medicine/Public Health Residency Programs, Maryland Department of Health and Mental Hygiene. *Oral* p*resentation not available.*

    - *Biography*: Dr. Mitchell is the Director of Environmental Health Coordination and Preventive Medicine/Public Health Residency Programs at the Maryland Department of Health and Mental Hygiene. His responsibilities include environmental public health tracking, monitoring hazardous algal blooms, coordination of environmental health activities with other state agencies, and direction of the department's preventive medicine residency program. Prior to assuming his current position, Dr. Mitchell was an Associate Professor in the Department of Environmental Health Sciences at the Johns Hopkins Bloomberg School of Public Health. While there he served as an advisor to the EnviroHealth Connections project. He has also done consulting for international, federal, state, and private entities in the fields of occupational health and indoor air quality. Dr. Mitchell holds an MPH from the Johns Hopkins University School of Hygiene and Public Health, an MD from Case Western Reserve University School of Medicine, Cleveland, Ohio, an MS from the Massachusetts Institute of Technology, Cambridge, Massachusetts, and a BA from Williams College, Williamstown, Massachusetts.

Appendix 3: Breakout Group Reports

Breakout Group 1

Topic: Expanding or Enhancing Federal and State Standards/Guidelines and Enforcement of Environmental Health in Schools and Child Care Facilities

The group rapporteur identified several gaps in current laws and policies and necessary changes. These included:

- Environmental health of children is a federal priority, but their environmental health at school and school environments is not. A fundamental shift is needed. The OSHA Act of 1970 does not grant statutory authority to any federal agency to address environmental health risks to children present in school and child care facilities; therefore, new policy is needed to grant a federal agency jurisdiction for children in schools and in child care with the intent of setting minimum environmental health standards for these facilities. In addition, these federal requirements and standards for facilities could be derived from model states.

- States could be required to identify an agency and person in charge (i.e., the state department of health) of developing standard requirements for pollutants, conducting regular facilities inspections, enforcing standards and issuing corrective actions to schools, and developing a reporting system. The experiences of Connecticut and other states could inform the development of a federal model on facilities.

To implement these necessary changes, participants from breakout group 1 suggested involving the National Governors Association, National Council of State Legislatures, Department of Homeland Security, FEMA, Department of Education, White House Council on Environmental Quality, and President's Task Force on Environmental Health and Safety Risks to Children, as well as state and local health departments, school personnel, and departments of education at colleges and universities.

To ensure compliance with environmental health standards or guidelines in schools, the group identified the following mechanisms that could be used:

- develop state and federal penalties for noncompliance
- create a parent complaint filing system
- designate a state/regional ombudsman to evaluate complaints and compliance
- develop a two-tiered approach to enforcement by requiring school districts to conduct regular maintenance and inspections of facilities and local and state health departments to conduct annual inspections of school facilities.

Participants noted that some child care facilities and all private schools could require a different set of enforcement mechanisms because they are private institutions.

These mechanisms could include:

- Incorporating environmental health standards and personnel training requirements into state departments of health and human services and departments of education licensing requirements.
- Providing public resources to child care and private schools for improving the environmental health of their facilities.

Research needs identified by participants in breakout group 1 included:

- Identifying the percentage of children at risk as a result of environmental health risks in schools.
- Developing a comprehensive summary of the landscape of state laws, activities, and enforcement mechanisms dedicated to improving environmental health in schools and child care facilities across the United States.
- Developing an updated synthesis report by a body within the National Academies of Sciences (NAS) linking environmental health to academic performance, exploring policy and programmatic interventions to improve environmental health in schools and child care facilities, providing a cost-benefit analysis of prevention strategies, and reporting the reasons for inadequate funding allocations for school facilities.

To achieve this, participants noted it was necessary for federal agencies and state agencies to develop a coordinated research approach through interagency priority setting. There is no coordinated research agenda for children's environmental health at school and in child care, and no coordinated research on the conditions of these facilities, where over 55 million children spend every day.

Breakout Group 2

Topic: Developing Prevention, Intervention, and Tracking Programs for Children's Environmental Health in Schools and Child Care Facilities

The rapporteur for breakout group 2 informed the workshop that participants identified tools and mechanisms that boards of education and local health departments could use to prevent the occurrence of environmental health risks in schools and child care facilities. These included

- Develop health and safety metrics by which facilities are evaluated and offer rewards to "high-performing" facilities.
- Require facilities to report data on environmental health risks to school district leaders and public health departments. Public health departments would then conduct assessments of the facilities and report the results to school site administrators and the general public with a summary of the corrective actions the school facility should take.

- Use new technologies to conduct regular monitoring of these facilities and couple this with routine inspections by local health departments.
- Provide public incentives to schools and child care facilities to encourage action and public funds for the development and implementation of prevention programs.
- Develop community prevention guidelines for implementing prevention programs in schools and child care facilities.
- Include environmental health in annual fire department inspections.

Participants also identified how intervention systems might be established to assist children at risk or with suspected environmental health exposures:

- Elements of the NIOSH and the OSHA programs for adult employees in workplaces could be adapted to address children in their "workplaces"—i.e., schools and child care facilities.
- The IDEA program could integrate environmental factors into children's needs assessments.
- The PEHSU network could work with state and local health departments to conduct onsite investigations, as outlined in US EPA congressional authorization.
- Public health complaints could be logged by school facility identifiers; pediatric health records could include a nationally unique school facility identifier.
- The PEHSUs could work with the Environmental Public Health Tracking Network to request the collection of environmental public health indicators.
- A model inspections form could be created and circulated to schools and child care facilities.
- A notification system could be established between schools, parents, and a national/state/local commission.
- A handbook of state regulations and rights of disabled children could be developed as a desktop reference for dealing with children's school-based risks and exposures. Participants also suggested exploring what already exists regarding putting together a handbook.
- A National Commission could be established to advance environmental health at school. One aspect might be to collect and manage a national database of risks and exposures. This could be established through a Congressional authorization or through a recommendation from the IOM or the President's Task Force on Environmental Health and Safety Risks to Children with financial support from a health foundation.

Participants also identified necessary federal, state, or local policies for establishing a prevention/intervention/tracking program in schools and child care facilities:

- Amend the Family Educational Records Privacy Act (FERPA) to exempt public health departments and public health researchers, in order to provide them easier access to children's health data.

- Use the Healthy Homes and Asthma-Friendly Schools programs as a model for the primary management and prevention for state asthma programs.
- Use disability accommodation laws, civil rights statutes, and the Americans with Disabilities Act (ADA) as triggers for legal and other action to support children with asthma at school and in child care.
- Require that chronic absenteeism be reported to public health departments as one trigger for an immediate onsite response.
- Commission an IOM report to endorse federal and state partnerships for developing pediatric prevention/intervention/tracking programs in schools and child care facilities.

In order for these efforts to be successful, participants suggested engaging parents through various mechanisms, including PTAs, NGOs, environmental justice and civil rights groups, health care providers, and school personnel.

Participants suggested that pilots could be conducted by PEHSUs, federal or state agencies in partnership with local school districts, nurses, school-based clinics, ASTHO, NACCHO, and CSTE. It was suggested that 100 pilots be conducted on a districtwide level, allowing for states to pick the districts where the pilots could be implemented.

Breakout Group 3

Topic: Developing Training/Education/Guidance for Parents/Guardians and Health Care and Public Health Professionals

The rapporteur for breakout group 3 said the group identified training and education needs for parents/guardians and health care and public health professionals. Participants suggested:

- For parents/guardians: PEHSUs/federal agencies, local and state health departments, and ATSDR regional representatives could play a role in providing training. The trainings could be offered through the PTA/PTO or provided in parent handbooks, Q&As, and other written materials (e.g., www.cdc.gov/healthyschools). There could also be a "train the trainer" model in which skilled parents train each other. The trainings could cover
    - general environmental health information (temperature, moisture, ventilation)
    - specific concerns for children at greater risk (sensitive populations)
    - whom to call.

- For teachers and principals and other personnel: Educational unions or associations could improve training for teachers and other school personnel (custodians, nurses, etc.). It could be incorporated into the education core curriculum and continuing education (CE) opportunities could be offered. There could also be in-services from state and local health departments and the information could be offered through handbooks for school personnel. Also, units could be required for licensing school leaders. Training could cover:

    - communication training
    - why this environmental health and healthy facilities are important
    - what not do (i.e., use of deodorizers, cleaning products, etc.).

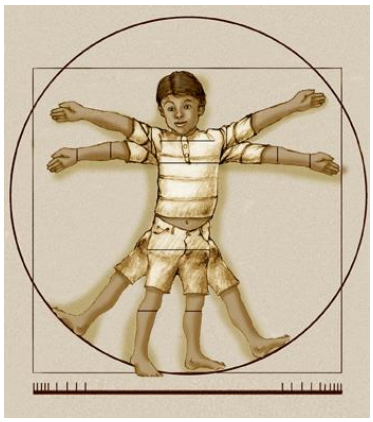
- For health care providers: PEHSUs or federal agencies could offer training to health care providers through grand rounds, publications through official organizations, and online mechanisms. The training could be required for Continuing Medical Education (CME). The training could include

    - how to recognize where there is a problem and how to take a history on environmental health school
    - the role of PEHSUs
    - local and state health departments
    - who should be called.

- For public health professionals: PEHSUs or federal agencies could provide local public health professionals with a network/mentorship program for sharing best practices, graduate trainings, and an environmental health certificate or continuing education. Local public health professionals could access trainings and information through networks/mentorships, graduate training/CE courses, and meetings of local public health departments, associations, and NACCHO.

- For pilot studies: Regional training pilots could be facilitated by PEHSUs, federal agencies (CDC, EPA, and NIEHS), state collaborations, and academics. For each set of stakeholders, they should be disseminated not only in places that are easy to access and have a lot of resources, but also in medium and difficult environments.

Appendix 4: Bibliography



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