Emerging concerns with PCBs in schools draw hundreds to SRP webinars

By Sara Mishimandani

An international group of more than 300 people gathered, via webinar, April 21 and April 28, to discuss the issues related to the presence of polychlorinated biphenyls (PCBs) in schools. The webinars were part of the NIEHS Superfund Research Program (SRP) Risk e Learning seminar series. In the last ten years, PCBs have been detected in many school buildings built before the late 1970s, due, in part, to fluorescent light ballasts and interior and exterior caulk containing PCBs.

"The webinar series was the result of a multiagency working group, coordinated by SRP, that identified PCBs in schools as a potential problem that may have implications for many school systems nationwide," said Heather Henry, Ph.D., SRP program administrator. "The webinar was an opportunity to bring more attention to this issue."

NIEHS and U.S. Environmental Protection Agency (EPA) staff, SRP grantees, and international partners explained the issues and presented approaches to reducing environmental PCB exposure in schools. Each two-hour session allowed researchers, risk assessors, members of state and local governments, and members of federal agencies from around the country and around the world to discuss exposure assessment and PCB-associated health risks.

Henry introduced the speakers and moderated the second session, which focused on identifying and reducing health risks from PCBs in schools. (Photo courtesy of Steve McCaw)

Overview and exposure assessment

PCBs are semivolatile chemicals, manufactured in the U.S., and used widely in products such as paints and cements, fluorescent light ballasts, sealants, and adhesives. According to Mark Maddaloni, Ph.D., EPA regional risk assessment coordinator, although PCBs were banned from use in the U.S. more than 30 years ago, they still exist in old products and buildings built before 1979. They also linger in groundwater and soil.

Kent Thomas, Ph.D.,
(http://www.epa.gov/heasd/staff/thomas.html)
a research physical scientist in the EPA National Exposure Research Laboratory, detailed EPA findings on the sources and levels of PCBs in indoor environments - schools in particular. He described the current knowledge and uncertainties that need to be overcome to allow for better mitigation, or reduction, of these contaminants. Thomas also provided information and EPA resources on testing for PCBs, renovating and removing PCB-containing caulk, and additional resources for parents and teachers.

Peter Thorne, Ph.D.,
(http://www.medicine.uiowa.edu/edTraining_Affiliations_apr.aspx?appointment=biosciences&id=psthorne)
director of the NIEHS-funded Environmental Health Sciences Research Center at the University of Iowa, discussed human exposure to PCBs, including routes of exposure and approaches to reducing exposures. Using examples from the University of Iowa Airborne Exposures to Semivolatile Organic Pollutants study, funded jointly by SRP and an NIEHS Environmental Health Sciences Core Center grant, Thorne discussed development of a model to better understand PCB exposure in various environments.

Identifying and reducing health risks

During the second session, University of Iowa researcher Gabriele Ludewig, Ph.D.,
(http://cph.uiowa.edu/ehsrc/members/member-detail.asp?memberId=30)
provided an overview of the mechanisms of PCB toxicity, addressing airborne PCB exposures at levels found in school environments.

EPA toxicologist Geniece Lehmann, Ph.D., discussed evaluating the health risks of PCBs in indoor air and described critical areas of research needed to better evaluate risks for inhaled PCBs. According to EPA,
(http://www.epa.gov/epawaste/hazard/tsd/pcbs/pubs/effects.htm)
PCB exposure has been associated with a reduction in IQ, increased risk of attention deficit disorder, and hormonal and immune disruptions, among other health problems. PCBs are also known to cause cancer in animals and are considered possible carcinogens in humans.

The final presenter, Niklas Johansson, Ph.D., of the Swedish Environmental Protection Agency, shared an international

experience on reducing PCB exposure risks. Sweden enacted legislation addressing nationwide identification, removal, and destruction of PCBs used in open applications, such as buildings and construction sites. Johansson discussed the successful identification and removal of PCBs in buildings and construction sites in Sweden, and how it can be done elsewhere.

Archives of both the April 21
(http://www.clu-in.org/conf/tio/PCBsinSchools1_042114/)
and April 28
(http://www.clu-in.org/conf/tio/pcbsinschools2/)
presentations, including supporting slides, can be found on the EPA Clean-up Information website.

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