



By Carolyn Raffensperger

## EPA Failure 'Defies Common Sense'

The states are getting uppity when it comes to protecting public health. In another end run around U.S. EPA, California (following the lead of the European Union) has just banned two flame retardant compounds. In a similar move, 10 states and a territory have petitioned the U.S. Department of Housing and Urban Development to comply with federal law by improving its pest management in thousands of public housing developments across the nation.

The states have learned the lessons of tobacco. Act on the weight of the evidence when it indicates harm; use biological principles rather than wait for exact epidemiological data points; and animal evidence is sufficient to demonstrate the potential harm.

The states are also mindful of the huge cost of providing health care for environmental diseases and may consider tobacco-like suits against companies that are jeopardizing public health. In taking these precautionary actions they are honoring their public trust responsibilities to protect the commonwealth for this and future generations.

California's flame retardant story begins with a scientist working for California EPA, Myrto Petreas, who tested harbor seals and human female breast tissue for the presence of polybrominated diphenyl ethers (PBDEs) between 1989 and 1998. In that short span of time the levels had increased 100 times in the seals. As Petreas was completing the seal study, the Swedes released a study of breast milk that demonstrated that PBDE levels were doubling in humans every two to five

years. Of course the \$64,000 question is, "So what"?

The "so what" is that we have a history of persistent bioaccumulating compounds which cause human health damage. And a key biological principle is that bioaccumulating compounds are *prima facie* problems. Evidence that chemicals like DDT or PCBs are accumulating serve as serious warnings and tell us that an emergency search for alternative green chemicals and a ban of the bioaccumulating compound are in order.

But proving harm is complicated. Evidence that PBDEs cause harm first began to accumulate in the mid-1980s at NIEHS's National Toxicology Program in a high dosage feeding study on mice. The mice developed liver cancer. However, the studies were ignored because human bioaccumulation had not been demonstrated.

Four years ago, Swedish, U.S., and Italian scientists revisited the mouse question and found that 10-day-old mice fed PBDEs suffered neurological damage including impaired learning and memory. The concentrations fed to the mice were still in excess of what humans are exposed to, but not by much.

The story of PBDEs reads like *déjà vu* all over again. Tobacco, and many other chemicals — lead in gasoline, asbestos, DDT, CFCs — followed the same pattern in science as the PBDEs. First, evidence that some harm is occurring, then active denial by industry, finally, years after the first warning, widespread consensus that the harm is real and substantial.

The tobacco story is particularly telling. Between 1945 and 1954 scientists demonstrated that the incidence of smoking and lung cancer rose together, tar caused cancer in mice, the greater the exposure, the greater the risk. And they had a case-control study. But the epidemiologists were still missing the nail in the coffin: the biological mechanism by which tobacco causes lung cancer. Since the researchers were missing this one piece of information, the tobacco lobbyists could sit in front of Congress and say with straight faces that there was no proof that tobacco caused cancer. The biological mechanism of how tobacco

caused lung cancer wasn't uncovered until the 1990s. Between 1954 and the 1990s there wasn't proof, but there was a hell of a lot of evidence that smoking caused lung cancer.

Absent "proof" on new threats, California is not alone in taking precautionary action to protect its populace. The 10 states and territory — California, Connecticut, Illinois, Massachusetts, Minnesota, Mississippi, New Mexico, New York, Oklahoma, Rhode Island and the Virgin Islands — petitioned HUD to use Integrated Pest Management in public housing as required under the Federal Fungicide, Insecticide, and Rodenticide Act. FIFRA says, "Federal agencies shall use Integrated Pest Management techniques in carrying out pest management activities and shall promote Integrated Pest Management through procurement and regulatory policies and other activities." According to the Attorneys General, "Integrated Pest Management employs a variety of pest control methods including regular inspections, preventative action — installation of screens, repair of structural damage, and improved sanitation — and the use of physical and mechanical controls. Chemical controls are used as a last resort."

Since 1.3 million families live in HUD-funded developments, using Integrated Pest Management techniques would significantly reduce exposures of an at-risk population. The state attorneys general argued that "children are particularly vulnerable to the harmful effects of pesticides because of their developing neuromuscular systems. Because they spend significant time crawling and playing on the floor, children are more likely than adults to come into direct contact with pesticides. Exposure to pesticides in the womb and during the first years after birth is linked to increased risks of cancer and injury to developing brain and nervous systems."

As Connecticut Attorney General Richard Blumenthal said: "This federal agency's failure to comply with the law defies common sense and good conscience."

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