

Profile

Philip Landrigan: children's health crusader

Most people don't think of Philip Landrigan when they fill up their car with fuel, but it's thanks to him that leaded gasoline has become outlawed almost worldwide. Along with Herb Needleman, professor of psychiatry and paediatrics at University of Pittsburgh, Landrigan was the first to document the effects of lead poisoning on American children, which led to the US government mandating the removal of lead from gas and paint in 1976. "It took a few years to get the lead out of gasoline, which occurred over a 20-year phasing-out period. But once we started, the effects were like turning off a faucet", said Landrigan, an expert on environmental health and paediatrics, who currently heads up the Mount Sinai Center for Children's Health and the Environment, New York City, USA. "Dr Landrigan's contributions directly led to restrictions on lead in air and lead in paint", said Michael Shannon, Chair of the American Academy of Paediatrics' Committee on Environmental Health. "In complete correlation with the reduction of lead from these sources, the blood lead level of every child, actually every American, fell by more than 40%. It was an absolutely monumental achievement."

Lead in old paint remains a contested issue, though. A number of US civil lawsuits against producers of lead paint have been dismissed, often pawning off culpability from the manufacturers to landlords. The case of Rhode Island vs Lead Paint Industry, for which Landrigan was called upon as an expert witness in 2002, also ended in a mistrial; a retrial is scheduled for this month when he may be called upon again.

Landrigan used his research on lead poisoning to persuade the US Centers for Disease Control and Prevention to create an Environmental Epidemiology Unit, which evolved into what is today the National Center for Environmental Health. "Prior to that, the CDC had been focused almost entirely on infectious diseases", said Landrigan.

After "getting out the lead", he turned his attention to cleaning up the food supply. Landrigan chaired a National Academy of Sciences Committee (1988–93), whose work culminated in *Pesticides in the Diets of Infants and Children*, a groundbreaking report that brought to light that "children are uniquely susceptible to the effects of pesticides", reported Landrigan, who says he and his wife raised their three children using "prudent avoidance". The report called for making pesticide standards ten times more stringent than they had been previously, and two major pesticides were banned from the residential market.

This work also fuelled the Congressional passage of the Food Quality Protection Act (1996), a major federal pesticide law that finally considered children's special vulnerabilities to food chemicals. Landrigan subsequently served as Senior Advisor to the Environmental Protection Agency

(EPA) on children's health, and prompted the creation of the Office of Children's Health Protection. "The Office was one of the most important new additions to EPA and has continued to be the beacon for making sure that children are always being considered as EPA meets its charge of protecting the public from environmental threats", said Shannon.

Still, much more work needs to be done, if you ask Landrigan. He believes that the USA could learn from Europe's proactive policies and action, including the rigorous testing of chemicals, and developing an action plan for reducing children's exposure to environmental chemical pollutants. "We don't have an action plan yet", he says. While the US has selectively targeted a few chemicals to watch, it hasn't initiated any broad-based action to screen more or all chemicals, and upper safety limits only focus on some health effects, Landrigan warns.

But some recent initiatives may help, such as the National Children's Study (NCS), a prospective study led by the US Department of Health and Human Services that will assess the effects of multiple environmental risk exposures on children's physical and mental health. The NCS marks a move towards more evidence-based policy-making. "It's ethically imperative to do such work before prematurely developing policies", said Alan Fleischman, Acting Chair of the NCS Federal Advisory Committee. Landrigan was involved in the planning and development of the hypothesis for this study, serving on its federal advisory committee. Fleischman insists that Landrigan's part began before the project was ever conceived, acting as the catalyst for this kind of longitudinal study. "He has worked to increase public recognition of the impact of environmental exposures on children's health and well-being. He's among the foremost advocates in the paediatric community", he said. Landrigan recently left the committee and applied to direct one of the NCS initial test sites at Queens, New York.

Some policies and industry standards are emerging in the USA to ensure the production of safe chemicals, as exemplified by the Green Chemistry Research and Development Act (2004). Landrigan, however, is not holding out hope for green chemistry to save the day. "Without an external push from policy, I don't see much happening—it's like solar energy." Instead, he is focusing on breeding the next generation of environmental paediatricians. In 2000, he helped launch the US Pediatric Environmental Health Fellowship Program under the sponsorship of the Ambulatory Pediatric Association, explaining, "it's a medical tradition that goes back to Hippocrates, which says to train your successors".

Angela Pirisi
apirisi@interlynx.net



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