
Protecting Our Future: Policy Directions and Strategies to Protect Children's Development Against Toxic Chemicals

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Summary

Profound environmental health threats to Americans, including the risk of adverse learning and developmental impacts, continue today despite decades of increasing knowledge about these threats. This situation exists primarily because laws and regulations enacted decades ago to protect public health more effectively protect chemical manufacturers, companies that are neither required to assess the health impacts of their products nor obtain government approval for their use. This paper briefly reviews the threats posed by current use of largely unregulated chemicals, examines how current policies protect the chemical industry at the expense of public health, describes recent developments and opportunities related to protecting public health and human development against chemical exposures, and outlines a direction for a collaborative effort to enact protective policies.

The Threat Posed by Toxic Chemicals and How It Was Allowed to Happen

In short, the threat to health and human development has four parts:

1. The chemical industry has made our society dependent on tens of thousands of synthetic chemicals that are either known to be toxic to human health, including learning and development, or whose effects on human health and the environment are unknown.

The ubiquitous use of toxic chemicals in our society did not exist three generations ago; global use of chemicals grew from 1 million tons per year in 1930 to 400 million tons per year in 1998. Chemical companies have informed the government of approximately 80,000 chemicals in use. This glut of chemicals presents two threats to health and development. First, the threat we know about: roughly 1,400 chemicals have known or probable links to health conditions like cancer, birth defects, or our ability to reproduce. The state of California lists more than 240 chemicals known to cause developmental disorders. Some of these chemicals' developmental impacts have been known for

centuries, as is the case with lead and mercury; some chemicals' potential impacts on development are only now being discovered. For example, in recent years researchers have discovered that PBDEs, chemicals used widely as flame retardants, can impair brain development, and Bisphenol-A, a component of many plastics, can cause a chromosome defect associated with Downs syndrome.

The threats we know about pale in comparison to what we don't know: approximately 90 percent of the chemicals produced in the highest volumes lack publicly available data necessary for even the most crude toxicity screening. Seventy-seven percent of the chemicals registered for use lack publicly available screening-level data on potential developmental impacts.¹ The use of these chemicals amounts to an uncontrolled chemistry experiment where humans, and particularly children, are the lab rats.

2. The chemical industry has created a world of practically universal contamination and exposure to toxic chemicals—through products sold to consumers and through pollution and toxic waste sites generated by factories—resulting in real damage to health and the environment.

Humans are already exposed to these tens of thousands of chemicals in myriad ways every day. Many of these chemicals are placed in products. Furniture cushions, textiles, and electronics products contain PBDEs, which can damage brain development, to reduce flammability (despite the availability of safer alternatives). Baby bottles, food containers, and linings in metal food cans contain Bisphenol-A, associated with chromosome defects, cancer, and endocrine-related health conditions. Many thermometers contain mercury, known to impact learning at very low exposure levels; children's toys and medical devices contain phthalates (pronounced 'tha-lates'), linked with developmental impacts on the reproductive system. These are only a few examples.

Chemicals also end up reaching humans through the natural environment. In the year 2001, U.S. industries discharged 6.2 billion pounds of toxic chemicals directly into water, land, and air, and generated 26.7 billion pounds of toxic waste.² This pollution, over time, results in contaminated sites that then present ongoing exposure threats to the public. One in four Americans lives near a Superfund site; studies have shown that children born within a quarter-mile of a Superfund site are at greater risk of birth defects.³

These exposures result in damage to health and development. Every year Americans place 1,000 calls to state health departments suspecting unusual clusters or disease or other health conditions. These include a cleft lip/cleft palate cluster in Dickinson County, Tennessee; a cluster of neural tube defects (babies born missing all or parts of their brains) in Laredo, Texas; a cluster of multiple sclerosis in El Paso, Texas; and a cluster of brain cancer in Fairfield, Maine.

¹ It should be noted that these figures exclude two chemical-industry product categories: pesticides and pharmaceuticals. At least minimal testing is required before companies put these products on the market.

² This only includes the fewer than 700 chemicals for which pollution reporting is required.

³ These figures refer to the most dangerous toxic waste sites, included on the Superfund program (the nation's toxic waste clean-up program) national priorities list.

Evidence of “real-world” impacts does not stop at anecdotal reports by courageous citizen-investigators. Researchers have correlated exposure to lead with substantial decreases in IQ scores (at exposure levels half of what the government considers problematic). Rates of many diseases with known links to chemical exposures—including certain birth defects, childhood cancer, and asthma—have increased in recent decades. In the realm of conditions relevant to development, significant increases in brain and nervous system cancers, autism-spectrum disorders, and learning and behavioral disorders have been reported in recent decades. Mental retardation now affects approximately 1 in 50 American children.

4. The chemical industry has hijacked public health policy to keep all chemicals assumed safe until proven otherwise, to make it impossible to prove otherwise, and to focus efforts on “managing” risks rather than avoiding them.

CHEMICALS ARE ASSUMED SAFE UNTIL PROVEN OTHERWISE.

Current policies intended to protect against toxic chemical exposures actually exacerbate each dimension of this problem. For industrial chemicals (meaning chemicals that are not pesticides or pharmaceuticals), no pre-manufacture testing is required. Because federal agencies have used their limited authority to request information on some newer chemicals, chemicals that were on the market before current law was established present the bigger problem; by volume, these represent 99 percent of the chemicals in use. So the first problem is that chemicals are assumed safe until proven otherwise, leaving the burden on government agencies with limited resources to assess thousands of chemicals and attempt to prove health effects.

“MANAGING,” RATHER THAN AVOIDING THE RISK

The second problem is that even when there’s credible evidence that harm may occur from exposure to a chemical, current practice relies on assessing and “managing” the risk, rather than avoiding risk where possible. Common sense would dictate that a manufacturer not use a chemical known to cause birth defects in children’s toys. But manufacturers have rigged the process to force regulators to first spend years assessing risk, which means guesstimating the relative odds that a chemical’s guesstimated toxicity combined with the average person’s (usually a middle-aged middle-sized male) guesstimated exposure levels will produce an impact on health. Then regulators attempt to keep the risk to an “acceptable” level.

PHTHALATES IN CHILDREN’S TOYS: AN EXAMPLE

The Consumer Product Safety Commission provided a particularly absurd example with its recent decision not to restrict the use of phthalates in children’s toys. The agency did not dispute that the chemicals are toxic or that they are present in children’s toys or that they leach out of the toys when children chew on them. But in the agency’s assessment, a child would have to chew on the toy for an average of 70 minutes per day in order to get the level of risk estimated to be unacceptable; based on their observations, the average child does not chew on a plastic toy for that long. What about the children who chew on toys for more than the average child? What happens when the toxicity assessment is revised and lower exposure levels turn out to be dangerous? (The level of lead exposure

considered safe is six times lower today than it was several decades ago and recent research shows that it is still not low enough; there is likely no safe level.) This approach to protecting public health defies all common sense.

In addition, federal agencies' hands are tied even when they have sufficient evidence (and the relevant risk estimates) to restrict or prohibit the use of a chemical. In order for the Environmental Protection Agency to act under the Toxic Substances Control Act (a misnamed law), regulators must show: 1) that the chemical "will present an unreasonable risk" (In the context described above, this is a practically impossible standard.), 2) that the benefits of the proposed restriction outweigh the economic costs, and 3) that the proposed restriction will be less burdensome than other regulations, such as caps on specific pollution sources. When EPA proposed banning asbestos, one of the substances most strongly linked to cancer, a federal judge revealed clearly the flaws in this policy by concluding that EPA did not have sufficient authority to ban asbestos.

A Policy Vision: Developing A Sane Policy

Developing a sane policy for protecting health and development against toxic chemical exposures might seem daunting when confronted with such an overwhelming problem complicated by such arcane and obtuse policies. But a rational public health policy simply relies on several common-sense principles:

1. The public has a right to know about any chemicals in use, their specific uses, potential threats to health and the environment, and potential exposures. The public also has a right to participate in decisions that could affect health.
2. The government should prohibit use of a chemical if there is significant evidence that it poses serious threats or if potential threats have not been adequately assessed. Manufacturers and users of a chemical bear a burden to assess the potential threats of a chemical and seek government approval for its use.
3. Government should require manufacturers to use safer alternatives where they exist. Where they do not, government and industry should promote development of alternatives. If an alternative does not exist for a chemical that plays an important role in society (e.g. medical supplies), government should only allow minimized use until alternatives are available. Minimizing use of the chemical is always better than trying to control exposures.
4. Government should make policy decisions about chemicals based on maximizing protection of public health and the environment. Specifically, decisions should:
 - be based on the intrinsic hazards (toxicity) of a chemical rather than on the odds of exposure or harm
 - err on the side of protecting health and the environment where there is uncertainty in the evidence

- be applied to groups of chemicals where the evidence indicates likely similarities among chemicals.
5. Contamination resulting from the use of chemicals should be cleaned up to a level protective of health and restoring any damage to the environment.
 6. Government should hold manufacturers and users of chemicals responsible legally, financially, and to the extent possible physically, for the costs and consequences of the use of toxic chemicals. This includes:
 - bearing the financial burden of testing chemicals,
 - paying for the clean-up of toxic waste sites,
 - taking physical responsibility for keeping products (and byproducts) out of the waste stream, and
 - compensating those whose health has been affected.

Obstacles to Progress

Of course, this vision of a healthier world is more easily described than realized. The primary obstacle is the political influence of the chemical industry, which wields significant power at both the state and federal levels. At the federal level, the American Chemistry Council (ACC, the chemical industry's lobbying group) and its member companies have given \$50 million to Congressional campaigns since 1995. ACC spent \$30 million on lobbying Congress. Fred Webber, then president of the ACC, was one of the "Pioneers," leading fundraisers for the election campaign of President Bush (he raised more than \$500,000). ACC only represents a fraction of the U.S. companies who use chemicals; the oil industry makes chemicals and virtually every manufacturing company uses chemicals. Each of these industries spends tens of millions of dollars on lobbying and campaign contributions.

9/11 Safety Precautions: A Case Study

The recent federal debate over chemical security demonstrates their influence. After the events of 9/11, public health advocates and policymakers immediately realized that industrial plants using hazardous materials could become targets of terrorists. An attack on any one of 110 plants in the U.S. could release chemicals putting more than a million people at risk of immediate injury or death. In November of 2001, Senator Corzine of New Jersey introduced a bill requiring companies to both increase security and adopt safer chemicals and processes (where feasible) that would reduce or eliminate the possibility of disaster. In July of 2002, the Senate Committee on the Environment and Public Works passed the bill—unanimously. ACC had been caught off guard. They recruited the American Petroleum Institute (the oil industry lobby) and the Farm Bureau (upset about potential regulation of high-volume storage of toxic pesticides and fertilizers) to join in an intense lobbying campaign. Their CEOs met with Senators in-state during August and flew to Washington to meet with them again. They generated

thousands of letters from plant managers opposing the bill. From July through September of that year, ACC and its member companies gave \$1.3 million in campaign contributions to members of Congress. In September, five Senators who had voted for the bill said the bill should not be brought to a vote in the full Senate. Despite the passage of several homeland-security bills that fall, the Senate never voted on the chemical security bill.

Progress Made to Date (Despite Obstacles)

Despite years of opposition by the chemical industry, public interest advocates have made significant progress toward protecting public health. In 1980, Congress passed the Superfund law (prodded by the crisis at Love Canal, NY), making companies liable for cleaning up toxic waste sites and putting a tax on companies using toxic chemicals that would be used to operate the program and clean up sites where a responsible party could not be found.

But industry opposition made efforts to restrict or ban chemicals nearly impossible. This factor combined with the overwhelming lack of information focus reform efforts on the right to know. In the mid 1980s, states passed numerous right-to-know laws. These ranged in scope: some required disclosure of worker exposure and some required disclosure of pollution or toxic waste. California's Proposition 65 required companies to provide notice if they knowingly exposed someone to chemicals known to cause cancer or reproductive problems. In 1986, Congress created the Toxics Release Inventory, requiring thousands of companies to file annual reports on toxic pollution. In the late 1980s and early 1990s, states passed pollution prevention laws. The most successful required companies to report their use (not just releases) of chemicals and to develop toxics use reduction plans.

These initiatives have produced extraordinary results: California's Proposition 65 led some companies to remove chemicals from products rather than put warning labels on them. The federal Toxics Release Inventory has been credited with a reduction of more than fifty percent in reported chemical releases. In Massachusetts, which has the nation's strongest toxics use reduction law, reported releases have declined 90 percent, generation of toxic waste has declined 50 percent, and the use of toxic chemicals has declined 40 percent. Meanwhile, companies saved money: in New Jersey, which has a law similar to Massachusetts, by 1995 firms reported saving \$5-8 for every \$1 spend on complying with the new law.

Recent Policy Developments and Specific Policy Directions

It is time to launch the next major campaign to protect health, and children's development, from toxic chemicals. In the PIRGs' opinion, three specific policy directions require more attention: 1) restricting and banning chemicals known to be hazardous; 2) making assessments of toxicity a condition for continued use of a chemical; and 3) focusing policies on disclosing and restricting chemicals used in consumer products.

Recent developments indicate that the coming months and years may provide an opportunity for a renewed push in these directions. First, state legislatures have been moving to prohibit several uses of chemicals. A handful of states in the Northwest and Northeast have banned certain uses of mercury. The state of Washington has a new program in place to phase out the releases of about 25 of the most dangerous chemicals. California's legislature is close to banning 2 out of 3 of the PBDEs. These moves are significant because for the first time in years, policymakers are banning chemicals, rather than requiring further study or more disclosure. The California move to ban PBDEs is particularly significant because PBDEs have only emerged as problematic in recent years; policymakers are responding to new evidence and, rather than conducting a years-long risk assessment, they are acting to protect public health now.

THE EUROPEAN MODEL

The most significant policy development on the horizon is taking place in Europe. There, policymakers have crafted a proposal to overhaul the regulation of chemicals. A bill in development (and likely to pass) would:

1. Set a timeline by which companies must provide toxicity assessment information on 30,000 chemicals manufactured in quantities of more than 1 ton per year or remove the chemical from the market
2. Reverse the burden of proof: if a chemical is deemed of "high concern" (a category including chemicals with known or probable links to cancer, birth defects, reproductive toxicity, or endocrine disruption), its manufacturer or user must apply for government permission to continue using it.

Moving Forward to Protect our Future

These policy developments are good news, but sustaining them and transforming them into national progress in the U.S. will require vision and ambition. Not only because visionary reform is required, but because the chemical industry is likely to mount a significant effort to stop any new regulation. (The industry is already planning a new advertising campaign expected to cost \$40 million dollars per year.) In order to protect our health, the environmental and health communities must come together with a far-reaching national initiative to change the way chemicals are regulated. My initial thoughts on critical strategies include the following:

The *goals* should be two-fold:

1. In the short term, enact "piece-meal" policies, such as bans (or potentially new right-to-know requirements) on specific chemicals, at the state and federal levels, stimulating a nationwide debate in the process.
2. In the long term, enact reforms of overall toxics policies at the state and federal levels.

The strategy should include several elements:

1. The lynchpin of the strategy is to tie various single-chemical campaigns together—with a consistent message and coordinated public education and coalition-building efforts—into a nationwide campaign to lay the groundwork for overhauling chemicals policies.
2. Major public education is required, but it must be a message people can relate to. Most people do not ever think about chemicals they might be exposed to (much less obscure policies governing how they are regulated). But they do think about one major exposure route: consumer products. We live in a consumer society and spend much of our day being bombarded with advertisements for one product or another. Polls show that most Americans believe that any product on the market has been tested and approved by the government; they would be shocked to learn that a chemical known to cause reproductive problems is in their children's toys. Public education around specific products with known toxic chemicals could be a major strategy for building public support.
3. Ambitious coalition building will be critical. Such a campaign will require multiple spokespeople and supportive constituencies. These include affected constituencies in addition to learning and developmental disabilities advocates: breast cancer advocates, medical groups, and other disease-specific groups. In addition, a supportive network of scientists, researchers, and doctors will provide a credible voice and limit the industry's ability to portray public interest advocates as techno-phobic or "anti-progress." Another key constituency with which coordination will be critical is labor unions, in order to limit efforts to frame the debate as one of "jobs vs. the environment."

This proposed effort is ambitious. It will require significant time, energy, and resources. But it is hard to imagine a more important investment.