

Environmentally Speaking



Health and the Environment

By Douglas M. Costle, Administrator

When the cost of health care in America has risen to \$140 billion a year, with most of this going for after-the-fact attempts at treatment and cure, it is obvious that we need to re-order our national and individual priorities. How much more health-effective and cost-effective it would be if more emphasis were placed on prevention—on keeping harmful materials out of the air, water, and soil—and out of our people.

In the United States, national concern for the environmental aspects of public health is of fairly recent origin. Not until after World War II did we really become aware of the health dangers, both immediate and long term, of many of the substances we produce, use, and often release into our environment.

The ratio of environmentally-induced disease to all diseases is large and growing larger. As Dr. Ernst Wynder has pointed out: "In a society where infectious diseases have been largely overcome through sanitary measures, immunization, and anti-biotics, the major causes for today's toll are largely unhealthy lifestyles, unhealthy working environments and disease-producing products."

The more experience we gain, and the more data we accumulate on the health effects of pollutants, the deeper our concerns become. Scientists have developed compelling evidence that children can contract chronic and acute disabilities as a result of air pollution. One study concluded that as many as 20 percent of the children in a city such as New York can develop severe and chronic respiratory diseases. During the 1973-74 oil embargo, the most significant factor in a dramatic drop in death rates in the San Francisco area—a 13.4 percent decrease compared with the same period over the previous four years—appears to be reduced exposure to pollutants from auto exhausts.

The World Health Organization estimates that from 60 to 90 percent of all cancer is the result of "environmental factors" in the broadest sense of the term. The rate of cancer deaths is greater than at any time since World War II; the

incidence is especially high in communities where there is a heavy concentration of chemical industries. When Dr. David Baltimore of MIT received the Nobel Prize in 1975 for his work linking viruses and cancer, he said: "The role of viruses in cancer is small. The best hope today for cures is research into environmental causes of cancer."

Each day, each of us breathes 16,000 quarts of air. They often contain a debilitating mixture of sulfur oxides, carbon monoxide, photochemical oxidants, nitrogen dioxide, particulates, and other airborne pollutants.

We have accumulating evidence that mercury, lead, and cadmium in the environment can attack the central nervous system. We know that fluorocarbons weaken the protective shield of the ozone layer, greatly increasing the risk of skin cancer. Last year, we acted to ban fluorocarbons in interstate commerce as of April 15, 1979.

There is clear evidence that carbon tetrachloride and chlorinated phenols can damage the liver; ethylene glycol and cadmium sulfate can produce kidney disease; asbestos and beryllium can cause lung disorders; vinyl chloride and arsenic can cause cancer.

Asbestos and chloroform have been found in our drinking water. In fact, we are now aware that chloroform and other trihalomethanes occur in drinking water as a result of the way we have been chlorinating that water to make it safe for drinking. So our problems are compounded by the irony that, in treating water to protect public health, we can actually create reactions that could prove harmful.

Another chemical trouble spot was the discovery of the widespread contamination of the Nation's waters by polychlorinated biphenyls (PCB's). Yet another was the revelation that the pesticide, Kepone, had caused nerve damage among workers.

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Incidents like these helped to convince Congress to pass the Toxic Substances Control Act. This law marks a recognition that we live in a chemical age, and that that age may be a mixed blessing. These chemicals will be our single greatest environmental challenge in the next couple of decades. They seem to be everywhere, if often only in small quantities.

The kinds of problems I have just mentioned do not lend themselves to quick-fix solutions. They demand thoughtful, rational, careful analysis and decision-making. And this kind of analysis and decision-making cannot be carried out in a vacuum. Nor can the problems simply be handed over to government officials, however ethical and competent, with instructions to "solve them—tell us what to do." The problems are deeply rooted in our highly technological industrialized society, and they must be addressed in terms that are not just acceptable to, but in fact arrived at by, that society.

For most toxic chemicals, for instance, the decisions are not going to be that clear-cut. We're going to have to make tough judgments about the appropriate degree of control, weighing the risk posed by a given chemical against its economic importance.

With the Toxic Substances Control Act, EPA is now required to regulate not just the residues of dangerous chemicals, but their manufacture, use, and distribution. This is a new order and a big one. I believe I am safe in predicting that within a decade this program will dominate all others in EPA. It will shift our emphasis to prevention, to keeping harmful substances out of our air, water and soil, rather than concentrating on cleaning them up after the damage has been done.

We have not abandoned our concern with the natural environment.

Understanding human impact on the environment provides us with critical clues regarding our own present and

future well-being (and environmental harm often serves as an "early warning" about potential threats to public health). In addition, there is a close correlation between measures that protect public health and those that protect the environment. But we clearly have an increased concern with public health issues. This concern is well illustrated by our strong new focus on toxic chemicals.

There is growing concern on the part of the public about what the chemical age has done to its world. Along with this, however, there's also a growing skepticism about how real some of the dangers are.

I don't believe that this skepticism means there is a widespread sentiment for giving up on efforts to deal with new public health threats. In fact, I'm very conscious of a very strong opposite pressure; that is, to get the toxic contaminants out of our air and water so that people won't face being involuntarily exposed to them.

However, the response does mean that both public and private officials concerned with health matters have an important responsibility.

For governmental agencies like EPA, it means we have to be candid, laying what we *do* know about toxic chemicals before the public, but making clear where our knowledge is limited.

For industry, it means not attempting to play on the public's doubts. Legitimate concerns about the chemical revolution deserve better than a Madison Avenue counter-attack by the private sector.

And for the health community, it means making a far greater commitment than has been shown in the past to examining the health effects of toxic chemicals, and to educating the public about such effects. Leaving this duty to government alone is a luxury that this country can no longer afford. □