



# Environmental Health

U.S. Department of Health & Human Services • Public Health Service

March 19, 2003

## PROGRESS REVIEW



In the seventh of a series of assessments of *Healthy People 2010*, Surgeon General and Acting Assistant Secretary for Health Richard Carmona chaired a focus area Progress Review on Environmental Health. He was assisted by representatives of the National Institutes of Health, the Centers for Disease Control and Prevention (CDC), and the Agency for Toxic Substances and Disease Registry (ATSDR), which share the agency lead for this focus area. In addition, representatives of the Environmental Protection Agency (EPA) and the Department of Housing and Urban Development (HUD) were present to provide their perspectives in the discussions. For information about this focus area, see the chapter text at [www.healthypeople.gov/document/html/volume1/08\\_environmental.htm](http://www.healthypeople.gov/document/html/volume1/08_environmental.htm). The meeting agenda, summary data tables, and charts are available on the National Center for Health Statistics (NCHS) Web site at [www.cdc.gov/nchs/about/otheract/hpdata2010/fa8/environment.htm](http://www.cdc.gov/nchs/about/otheract/hpdata2010/fa8/environment.htm).

### Data Trends

In reporting on the data for objectives in the Environmental Health focus area, Richard Klein of NCHS focused primarily on those among the 30 objectives that have had recent updates. With respect to outdoor air quality, ozone levels dropped slightly, with 41 percent of the population exposed to ambient levels not meeting EPA standards in 2001 (compared with 43 percent in 1997). Among people living in urban areas in 2001, the exposure rate was 51 percent. Other pollutants targeted by Objective 8-1—carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead—pose less of a problem. Between 1990 and 2000, air quality improved in many areas of the country, leading to a reduction in the number of areas in which air quality did not meet national standards. The *Healthy People 2010* target for each of the six criteria pollutants is zero percent, a target already met for nitrogen dioxide.

Since the initiation of *Healthy People 2010*, data have not been available to update many of the objectives for national water quality. The limited available data (1987–1996) show that

outbreaks of waterborne disease originating from a community water supply affect fewer people than outbreaks from other sources (Obj. 8-6). In 2001, 27 percent of beaches surveyed experienced one or more advisories or closings because of the presence of harmful bacteria, compared with 23 percent in 1997 when monitoring began (Obj. 8-9). On the U.S.-Mexican border, three of the six Mexican communities surveyed in 2002 achieved the targets for wastewater receiving treatment and for wastewater sewer service (Obj. 8-30).

With the removal of lead from gasoline in the late 1980s, the proportion of children aged 1 to 5 years with elevated blood lead levels declined dramatically over the next decade. The trend continues, though at a lesser rate of decrease, and has been accompanied by a narrowing of the disparity in blood lead levels between black and white children. Residual lead concentrations in blood continue to be a serious problem, however, even several decades after lead ceased to be used in house paint in the 1950s (Obj. 8-11).

In 1998–1999, 85 percent of homes surveyed had detectable levels of infestation by dust mites. About half of these infestation levels were high enough to trigger allergic reactions in sensitive people and a quarter were high enough to trigger asthma attacks in the sensitive. In general, the lower the household income, the higher the level of infestation (Obj. 8-16). The asthma hospitalization rate for children under 5 years of age increased between 1998 and 2000. Black children living in urban areas had the highest rates of hospitalization. However, recent data suggest that the hospitalization rates for all children (including black children) have been on the decline.

Recent scientific advances have made it possible to measure human exposure to certain pesticides, heavy metals, and other toxic chemicals at low levels

that were not previously detectable. Among the pesticide metabolites that can be measured in urine, the levels of 1-naphthol in the U.S. population declined by two-thirds between the survey periods of 1988–1994 and 1999–2000. In addition, isopropoxyphenol could not be detected in the 1999–2000 survey. However, little change was recorded in urine levels for the other two pesticide metabolites of concern (Obj. 8-24). Although DDT was banned from use in the United States in 1973, its metabolite DDE is clearly measurable in people aged 12 to 19 years. However, overall serum DDE levels in the U.S. population have declined nearly fivefold over that time. Serum DDE levels are three times higher among Mexican Americans than among non-Hispanic whites or non-Hispanic blacks (Obj. 8-25).

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## **Salient Challenges and Current Strategies**

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- The adverse effects of lead are persistent. A number of people followed up 15 to 20 years after childhood exposure to lead paint still score at below average levels on standardized tests.
- The majority of toxic waste sites identified by EPA as being in critical need of remediation are abandoned. Although most of these sites are on private property, clear title and liability are often difficult to establish, with the result that cleanup tends to become a public responsibility.
- U.S. production of most of the stratospheric ozone-depleting substances ended in 1996, but the potential benefits of this step will take years to be realized.
- ATSDR's Toxicological Profiles series, ToxFAQs and Medical Management Guidelines, contains authoritative information on the human health effects of hundreds of toxic substances. These publications have been distributed to thousands of public health professionals, scientists, and policymakers worldwide.
- CDC's Second National Report on Human Exposure to Environmental Chemicals, released in January 2003, provides data from an ongoing assessment that used biomonitoring to estimate exposure of the U.S. population to 116 chemicals found in air, water, food, soil, dust, or other environmental media. The data are presented by age, sex, and race/ethnicity and can be used to assess the effectiveness of public health efforts to reduce exposure and to set priorities for research on human health effects.
- The U.S.-Mexico Border Environment Cooperation Commission includes representatives from the 10 U.S. and Mexican states that share an international border and have a common interest

in effecting improvements in the quality of drinking water and sanitation facilities. A comprehensive plan for environmental enhancement along the border, "Healthy Border 2010," is expected to be announced later in 2003.

- ATSDR's training efforts in environmental health give healthcare workers access to information, clinical referrals, and training in environmental medicine. These services are available through partnerships with several professional societies and through Pediatric Environmental Health Specialty Units established in 11 academic medical centers around the country, with funding assistance from EPA.
- HUD has a dedicated fund of \$700 million to reduce exposure to lead and other chemical contaminants in inner cities.
- Although cigarette smoking by young people has not declined nearly as sharply as adult smoking has in recent years, exposure to secondhand tobacco smoke overall has been reduced by 75 percent in 10 years.
- EPA regulations to reduce ozone transport across state borders will take effect in 2004, as will new emission standards for diesel engines.
- The Healthy House program, developed by the American Lung Association of Minnesota, is a national education program intended to raise standards of construction and maintenance to produce better indoor environments.
- EPA plans a June 2003 release for its comprehensive State of the Environment report, which will highlight current and emerging environmental issues.

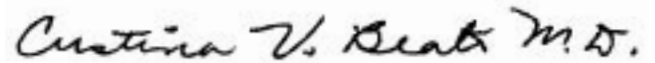
## **Approaches for Consideration**

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Staff who took part in the discussions offered the following suggestions for ways that health professionals and policymakers could help to bring about improvements in the state of the nation's environmental health:

- Ensure that culturally and linguistically appropriate information is widely available to alert the public to the danger of lead poisoning.
- To effect widespread reductions in indoor allergen levels, encourage dialogue among health scientists, building experts, construction professionals, and community representatives.
- Recognizing that asthma is a disease with social as well as environmental aspects, promote partnerships between community members, state and federal assistance programs, and healthcare providers.
- With respect to Objective 8-30, seek to harmonize U.S. and Mexican systems that provide the data for tracking progress in achieving objectives for drinking water quality and wastewater treatment in communities near the international border.
- Increase research on measuring the body burden of deleterious chemicals so that efforts to assess the state of environmental contamination in individuals and population groups can be strengthened.
- Strive to raise the level of public health preparedness in communities throughout the country.
- Ensure the sharing of information between systems that provide health data and those that provide environmental data.

- Promote consistency in data collection and reporting in beach monitoring programs run by local health agencies.
- Educate physicians about childhood lead poisoning and the importance of screening.



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