Midcourse Review

HEALTHY PEOPLE 2010

Environmental Health 8

Co-Lead Agencies:

Agency for Toxic Substances and Disease Registry
Centers for Disease Control and Prevention
National Institutes of Health

Contents

Goal: Promote health for all through a healthy environment.

Introduction*

Maintaining a healthy environment is integral to increasing quality and years of healthy life and eliminating disparities. Environmental health encompasses preventing or controlling disease, injury, and disability related to the interactions between people and their environment. Environmental health is central to preventing the adverse health effects of exposure to toxic substances, combating the societal and environmental factors that increase the likelihood of exposure and disease, preventing injuries and diseases resulting from natural or technological disasters, and preventing birth defects and developmental disabilities resulting from nutritional deficiencies or exposure to environmental toxins in utero or during early childhood.

The objectives in the Environmental Health focus area are grouped into six topical sections. The first section concerns outdoor air quality and reducing the proportion of persons exposed to air that does not meet the U.S. Environmental Protection Agency's (EPA's) health-based standards for harmful air pollutants.[1] Surface and ground water quality comprises the second section. Improving water quality monitoring and surveillance will reduce exposure to contaminants in drinking water, fish and shellfish, and recreational waters. The focus of the third section, toxics and waste, is to track the Nation's success in reducing exposures to toxic substances and hazardous waste, thus minimizing their effects on the population's health.

Healthy homes and healthy communities comprise the fourth section. The focus of this section is to provide a healthy environment within the Nation's communities and places where people spend the most time: their homes, schools, and worksites. Section five, infrastructure and surveillance, seeks to establish and maintain methods for monitoring the population to detect environmental hazards (for example, chemical, biological, radioactive, mechanical, and other factors that may adversely affect health), any exposures to those hazards, and the diseases potentially caused by the hazards. Finally, the last section considers global environmental health. These objectives seek to reduce the global burden of disease due to poor water quality, sanitation, and personal and domestic hygiene and to increase the proportion of the population in the U.S.-Mexico border region that has adequate drinking water and sanitation facilities.

Progress toward environmental health objectives relies on continued tracking of exposure to hazards, collaborative efforts to implement surveillance systems, and effective public health interventions.

Modifications to Objectives and Subobjectives

The following discussion highlights the modifications, including changes, additions, and deletions, to this focus area's objectives and subobjectives as a result of the midcourse review.

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* Unless otherwise noted, data referenced in this focus area come from Healthy People 2010 and can be located at http://wonder.cdc.gov/data2010. See the section on DATA2010 in the Technical Appendix for more information.

As stated in *Healthy People 2010*: "Most developmental objectives have a potential data source with a reasonable expectation of data points by the year 2004 to facilitate setting 2010 targets in the mid-decade review. Developmental objectives with no baseline at the midcourse will be dropped." Accordingly, at the midcourse review some developmental objectives and subobjectives were deleted because they lacked a data source. However, the U.S. Department of Health and Human Services (HHS) and the agencies that serve as the leads for the Healthy People 2010 initiative will consider ways to ensure these public health issues retain prominence despite their current lack of data.

Outdoor air quality. The developmental subobjective within alternative modes of transportation—proportion of population telecommuting (8-2d)—became measurable with the availability of baseline data through the U.S. Department of Transportation National Household Travel Survey.

Water quality. With baseline data now available through the EPA Office of Water, the objectives regarding surface water safe for fishing and recreation (8-8), beaches open and safe for swimming (8-9), and fish contamination (8-10) became measurable. Objectives related to surface water safe for fishing and recreation (8-8) and fish contamination (8-10) were divided into subobjectives to monitor the quality of rivers and streams separately from lakes, ponds, and reservoirs. The beaches open and safe for swimming objective (8-9) was modified to "increase the proportion of days that beaches are open and safe for swimming." The revised language made the objective consistent with the EPA Office of Water data source.

Toxics and waste. The toxic pollutants reduction objective (8-14) remained developmental at the midcourse. For compatibility with EPA monitoring,[1] the objective was divided into two subobjectives to monitor separately the "Green Index" (reductions in toxics release inventory [TRI] chemicals in production-related wastes) and the "Clean Index" (reductions in TRI chemical releases to the environment). Data to measure progress toward this objective are anticipated by the end of the decade.[2]

Healthy homes and healthy communities. The units of measurement for monitoring reductions in indoor German cockroach allergens (8-16c) and substandard housing (8-23) were revised for consistency with the data sources. Availability of additional data for indoor allergens (8-16) will depend on whether a second National Survey of Lead and Allergens in Housing is conducted by the National Institutes of Health (NIH). Baseline data for monitoring school policies to protect students and staff from environmental hazards (8-20) were obtained from the 2000 School Health Policies and Programs Study,[3] and objective 8-20 became measurable. Baseline data for monitoring State disaster preparedness plans and protocols (8-21) were obtained from the Centers for Disease Control and Prevention's (CDC's) Division of State and Local Preparedness, and this objective became measurable.

Infrastructure and surveillance. The subobjective to reduce 1-naphthol (carbaryl) (8-24a) was deleted because the chemical measured is not an indicator for carbaryl exposure. Within States monitoring environmentally related diseases (8-27), subobjectives for skin cancer (8-27l), malignant melanoma (8-27m), and other skin cancer (8-27n) were deleted because they are monitored by the Healthy People 2010 cancer objectives (Focus Area 3). The objective related to local agencies' use of surveillance data for vector control (8-28) was deleted due to lack of a data source. CDC's National Biomonitoring Program[4] made baseline data available for exposure to heavy metals and selected environmental chemicals (8-25). This objective has 19 subobjectives that will monitor exposures to 4 groups of environmental chemicals: heavy metals, pesticides, persistent chemicals, and organochlorine

compounds. With data available for subobjectives 8-25b, c, e, g, m, and o through s, these subobjectives became measurable. Baseline data are anticipated in the second half of the decade to establish baselines for subobjectives 8-25a, d, f, h through l, and n. Information systems used for environmental health (8-26) became measurable using data from CDC's National Environmental Public Health Tracking program.[5]

Progress Toward Healthy People 2010 Targets

The following discussion highlights objectives that met or exceeded their 2010 targets; moved toward the targets, demonstrated no change, or moved away from the targets; and those that lacked data to assess progress. Progress is illustrated in the Progress Quotient bar chart (see Figure 8-1), which displays the percent of targeted change achieved for objectives and subobjectives with sufficient data to assess progress.

Tracking data were available for harmful air pollutants (8-1a through g), alternate modes of transportation (8-2a, b, and c), cleaner alternative fuels (8-3), safe drinking water (8-5), waterborne disease outbreaks (8-6), elevated blood lead levels in children (8-11), pesticide exposures causing health care visits (8-13), pre-1950s homes tested for lead-based paint (8-22), substandard housing units (8-23), global deaths from poor sanitation, water, or hygiene (8-29), and wastewater service provided in the U.S.-Mexico border region (8-30a, b, e through h, k, and l).

Objectives that met or exceeded their targets. Nine objectives and subobjectives either met or exceeded their targets: harmful air pollutants (8-1d and f), global burden of disease (8-29), and water quality in the U.S.-Mexico border region (8-30a, e, f, g, k, and l).

Within reduction of persons exposed to harmful air pollutants (8-1), for both nitrogen dioxide (8-1d) and lead exposures (8-1f), targets were met for reducing exposed populations. Global deaths from poor sanitation (8-29) exceeded the target, achieving 161 percent of its targeted change.

Multiple subobjectives concerning water quality in the U.S.-Mexico border region (8-30) also met or exceeded their targeted changes. Specifically, the following regions exceeded targeted changes for wastewater service provided and received: Ciudad Acuna (8-30a and g), Piedras Negras (8-30e and k), and Reynosa (8-30f and l). These changes have been due, in part, to the U.S.-Mexico Border Environmental Program: Border 2012 Guiding Principles.[6, 7] The principles of this collaboration among Federal, State, and local governments in the United States and Mexico include adopting a bottom-up approach for setting priorities and making decisions through partnerships with State, local, and U.S. Tribal governments; addressing disproportionate environmental impacts in border communities; improving stakeholder participation and ensuring broad-based representation from the environmental, public health, and other relevant sectors; and achieving concrete, measurable results while maintaining a long-term vision.

Objectives that moved toward their targets. All subobjectives aimed at reducing populations exposed to harmful air pollutants (8-1) moved toward or exceeded their targets. Within alternative modes of transportation, increasing the number of trips made by walking (8-2b) achieved 59 percent of the targeted change. The use of cleaner alternative fuels (8-3) also moved toward its target, achieving 8 percent of the targeted change. The proportion of the population served by community water systems meeting EPA standards (8-5) increased from 84 percent to 90 percent, achieving 55 percent of its targeted change by 2003. Notably, 90 percent of the U.S. population is served by such water systems. Within the

toxics and waste section, reductions in the proportion of children with elevated blood lead levels (8-11) and in pesticide exposures causing health care visits (8-13) made progress toward their targets. Finally, for the healthy homes and communities section, the proportion of the population living in pre-1950 housing that has been tested for lead (8-22) increased, while the proportion of substandard housing units that are occupied (8-23) declined; both objectives moved toward their targets.

Since 1993, the U.S. Department of Housing and Urban Development (HUD) has supported over 200 local and State jurisdictions across the country for control of lead-based paint hazards in privately owned, low-income owner-occupied, and rental housing where young children reside or are expected to reside.[8] In addition, through CDC, HHS supports nearly 60 State, county, or city health department-based childhood lead poisoning screening and prevention programs. These initiatives identify and control lead paint hazards, identify and care for children with elevated blood lead levels, and institute and maintain proper surveillance of blood levels in children.

Objectives that demonstrated no change. Between 1997 and 2002, the wastewater subobjectives for Matamoros (8-30b and h) remained static. With the active participation of the 10 border States and U.S. Tribal governments, EPA, Mexico's Secretariat of Environment and Natural Resources, Mexico's Secretariat of Health, HHS, and other Federal agencies, new water and wastewater treatment projects have been proposed and will be implemented for these areas. The challenges of this region, however, are abundant. Over the past 20 years, the population in the border region has grown rapidly to more than 11.8 million people.[9] This figure is expected to reach 19.4 million by 2020.[9] Rapid population growth[9] in urban areas has resulted in unplanned development, greater demand for land and energy, increased traffic congestion, increased waste generation, overburdened or unavailable waste treatment and disposal facilities, and more frequent chemical emergencies. Residents in rural areas suffer from exposure to airborne dust, pesticide use, and inadequate water supply and waste treatment facilities. Border residents also suffer disproportionately from many environmental health problems, including waterborne diseases and respiratory problems.[10]

Objectives that moved away from their targets. Although some progress for alternative modes of transportation was noted for walking (8-2b), both percentage of trips made by bicycling (8-2a) and mass transit (8-2c) appeared to move away from their targets; however, this movement away from the targets for subobjectives 8-2a and c was not statistically significant. Between 1995 and 2001, the percentage of trips made by bicycle declined from 0.9 percent to 0.8 percent, while the percentage of trips made by transit declined from 1.8 to 1.6 percent. Also moving away from the target was waterborne disease outbreaks related to community water systems (8-6); however, monitoring of this objective is limited to outbreaks voluntarily reported by State health officials to CDC.

Objectives that could not be assessed. Several objectives and subobjectives could not be assessed for progress at the midcourse review. Data were not available to measure progress for persons who telecommute (8-2d), airborne toxins (8-4), water conservation (8-7), surface water health risks (8-8a and b), beach closings (8-9), fish contamination (8-10a and b), risks posed by hazardous sites (8-12a through d), toxic pollutants (8-14a and b), recycled municipal solid waste (8-15), indoor allergens (8-16a, b, and c), office building air quality (8-17), homes tested for radon (8-18), radon-resistant new home construction (8-19), school policies to protect against environmental hazards (8-20), disaster preparedness plans and protocols (8-21), exposure to pesticides (8-24b, c, and d), exposure to heavy metals and selected environmental chemicals (8-25a through s), information systems used for environmental health (8-26), monitoring environmentally related diseases (8-27a through k and o),

and water quality in the U.S.-Mexico border region (8-30c, d, i, and j). Data are anticipated to measure progress for these objectives by the end of the decade.

New data sources were identified and baselines established for subobjective 8-2d and objectives 8-8, 8-9, 8-10, 8-20, 8-21, 8-25, and 8-26. Additional data are anticipated for these objectives and this subobjective to assess progress by the end of the decade. The exposure to heavy metals and selected environmental chemicals (8-25a, d, f, h through l, and n) subobjectives did not have baseline data and remained developmental.

One objective—local agencies using surveillance data for vector control (8-28)—and one subobjective—exposure to pesticides (8-24a)—were deleted at the midcourse review because they lacked data sources. Three subobjectives monitoring environmentally related diseases (8-27l, m, and n) were deleted because they are monitored by the cancer objectives in Focus Area 3.

Tracking data are needed for the global environmental health subobjectives of drinking water and wastewater quality in Mexicali and Nogales, Sonora (8-30c, d, i, and j, respectively). The Border 2012 Program[11] mandates that indicators be developed and used to measure real and meaningful results. To ensure this target is met and to improve overall capacity to respond to environmental and health problems at the border, the Border Indicators Task Force (BITF)[11] was officially constituted in 2003. BITF is concentrating its activities on preparing a strategy for indicator development to provide a foundation for the identification, development, and use of a binational set of indicators for the Border 2012 Program.

Progress Toward Elimination of Health Disparities

The following discussion highlights progress toward the elimination of health disparities. The disparities are illustrated in the Disparities Table (see Figure 8-2), which displays information about disparities among select populations for which data were available for assessment.

Data were available to assess disparities for harmful air pollutants (8-1a through f), elevated blood lead levels in children (8-11), homes tested for radon (8-18), and lead-based paint testing (8-22). Assessing the level of disparity and change in disparity is challenging when data are sparse, not obtained in a systematic manner, or not reported with a level of precision necessary to make distinctions between select populations. The EPA Aerometric Information Retrieval System, used as the data source for objective 8-1, was not designed to assess health effects in a systematic manner but rather to address existing or suspected air quality problems in general. Data were sparse for objectives 8-11, 8-18, and 8-22.

Notwithstanding the limitations imposed by the data, some general observations on the level of disparities and change in disparities can be made. Elevated ozone (8-1a) is an air quality problem most associated with urban and metropolitan areas and the related high density of motor vehicles and industrial development. The American Indian or Alaska Native population had the lowest and best rate for elevated ozone (8-1a) among racial and ethnic populations. The Asian population, persons of two or more races, and the Hispanic population had rates 117 percent to 188 percent higher than the American Indian or Alaska Native population (best) for elevated ozone (8-1a). Between 1997 and 2001, the rate for the American Indian or Alaska Native population declined, while the rate for the Hispanic population remained constant; hence, disparity between these two populations increased.

Particulate matter (8-1b) is a problem most associated with urban and metropolitan areas. The black non-Hispanic population had the lowest and best rate for exposure to particulate matter. Rates for the other

populations, with the exception of the white non-Hispanic population, were at least twice that of the best population. While exposure rates declined for all populations between 1997 and 2001, the rate of decline for the black non-Hispanic population exceeded the rates of decline among the other racial and ethnic populations, resulting in the increases in disparities seen in Figure 8-2.

A similar situation was found with carbon monoxide (8-1c). The white non-Hispanic population had the best rate. Rates of the Asian population, persons of two or more races, and the Hispanic population were at least twice the rate of the white non-Hispanic population. As with particulate matter, rates of all populations declined between 1997 and 2001. The rate of the best group declined at a faster pace than all other racial and ethnic populations, except for the Native Hawaiian or other Pacific Islander population, resulting in a decrease in disparity between that group and the white non-Hispanic population and increases in disparity between all other populations and the white non-Hispanic population. All populations, except for the Native Hawaiian or other Pacific Islander population, reported the same exposure level (1 percent) to sulfur dioxide (8-1e). The Native Hawaiian or other Pacific Islander population reported an exposure level three times that of the other populations. As indicated above, the targets of zero percent for persons exposed to nitrogen dioxide (8-1d) and lead (8-1f) were achieved in 2001. As a result, all populations had a best rate of zero, and no disparities were observed.

While disparities remained quite large (greater than 1,000 percent) between the urban and rural populations for exposure to ozone (8-1a), particulate matter (8-1b), and carbon monoxide (8-1c), there were also substantial (25 to 800 percentage points) declines in these disparities. At the beginning of the decade, rates of the rural population were low (0 percent to 4 percent) and changed very little. Since there is little change in the rural population, as the rates for exposure to these pollutants experienced by the urban population decline, so do the relative disparities.

Data were not sufficient to compare the blood lead levels in children between populations (8-11). The black non-Hispanic population had the best rate for pre-1950s homes tested for lead-based paint (8-22). Disparity between the Hispanic population and the best group declined between 1998 and 2002.

Opportunities and Challenges

Opportunities and challenges exist in all six topical areas of Environmental Health and are described below.

Outdoor air quality. EPA has a number of efforts to address the challenges posed by air quality issues. The overall strategy includes a combination of regulatory, market-based, and voluntary programs that target emissions from whole industries or source categories, such as power plants and motorized vehicles. EPA programs address three key air pollutants, including nitrogen dioxide, sulfur dioxide, and mercury. They aim to reduce smog, acid rain, fine particles, visibility impairment, and nitrogen and mercury deposition, using a proven, market-based approach that encourages the use of new and cleaner pollution control technologies.[1] These programs include evaluation of air toxics, expanded monitoring, improvement in assessment tools, and continued research on health effects and exposures. EPA intends to use this information to help set priorities, measure progress, and develop plans for more detailed community assessments that will help identify local hot spots that may exist. Linkage of measured improvements in outdoor air quality with improvements in human health remains a challenging undertaking. EPA and CDC are working collaboratively to develop these methods.

Water quality. The passage of the Beaches Environmental Assessment and Coastal Health (BEACH) Act in October 2000 amended the Clean Water Act to (1) establish a national grants program to improve consistency of water quality standards, beach monitoring, and public notification approaches and (2) strengthen national information collection.[12] EPA established its BEACH program to promote greater consistency in beach health programs and to provide better information to the public. As part of that program, EPA compiles information on beach advisories and closures. It has collected that information using annual questionnaires sent to participating States, Tribes, local governments, and other agencies that maintain swimming beaches. The questionnaire collects information about advisories and closings that have occurred throughout the swimming season.

Toxics and waste. Eliminating elevated blood lead levels in children (8-11) is perhaps the most challenging environmental health objective. One of the most significant public health successes of the 20th century was the almost 10-fold reduction in blood lead levels in the United States, primarily because of regulations restricting the use of lead in automotive gasoline.[13]

Strategies that target screening to high-risk children are vital to identify those with elevated blood lead levels. In 2005, CDC issued a statement calling for lead exposure prevention to focus on two main exposures: lead in housing and nonessential uses of lead in consumer products.[14] The infrastructure is in place to monitor high-risk housing.

Lead exposure hazards can be prevented by systematic identification and reduction of residential lead sources, particularly in older, poorly maintained housing, along with regular monitoring of housing conditions to detect new deterioration and resultant lead hazards. In some areas of the United States, as many as 35 percent of children with elevated blood lead levels have been exposed to items decorated or made with lead.[14] Primary prevention is needed to restrict nonessential uses of lead in toys, eating and drinking utensils, and traditional medicines.[15] In some States, health department budgets have been reduced, impeding a health department's ability to perform environmental and medical case management. The impact of State health care reform efforts on public health functions needs to be quantified, and continuance of these critical functions needs to be ensured. Environmental health agencies could (1) develop demonstration programs that involve multiple Federal agencies and include the community as a partner in eliminating childhood lead poisoning; (2) identify ways to use the issue of lead as a catalyst for dealing with other housing and community problems; (3) increase the cost effectiveness of lead poisoning prevention activities through the development of community-based primary prevention programs and coordination with housing and community development projects, with emphasis placed on identifying children who continue to be exposed to lead, but are not identified through current programs; (4) educate physicians about childhood lead poisoning and its prevention; and (5) collect data showing that childhood lead poisoning is a problem and provide clear guidance on when—and when not—to continue universal screening.[16]

Healthy homes and healthy communities. No low-cost, practical methods have been available that allow homeowners to assess allergen levels in their homes. Many existing building codes were not developed with health considerations, such as allergen reduction, in mind.[17] Newer building and ventilation practices that may significantly improve moisture control and air quality in homes, and thus impact on indoor allergen levels, have not been widely adopted. Dialog between environmental health scientists, building designers, and the building community is not generally well established.

In recent years, awareness of the relationship of the built environment to the health of occupants has increased. Greater use of building and remodeling practices to control moisture infiltration, reduce moisture buildup, and provide proper ventilation for homes may impact significantly on indoor allergen levels.[17] For example, effective moisture control is essential for controlling both dust mites and cockroaches. Strategies to achieve this control include landscape design to provide proper drainage around the structure, proper air sealing of the building envelope combined with appropriate mechanical ventilation, use of ventilation fans in kitchens and bathrooms, installation of vapor barriers over earthen crawlspaces, and control of condensation from plumbing fixtures.

The Health House program is an example of a national education program intended to raise standards for better indoor environments.[18] EPA is using education and nonregulatory approaches to address indoor air pollution. The HUD Healthy Homes Initiative supports (1) activities that focus on researching and demonstrating low-cost, effective home hazard assessment and intervention methods and (2) public education that emphasizes ways in which communities can mitigate housing-related hazards.[8]

Infrastructure and surveillance. The environment plays an important role in health and human development. Researchers have linked specific diseases with exposures to some environmental hazards, such as asbestos and lung cancer.[19] No systems exist at the State or national levels to track many of the exposures and health effects that may be related to environmental hazards.[5] Environmental public health tracking (EPHT) is one way to fill these gaps. EPHT is the ongoing collection, integration, analysis, interpretation, and dissemination of data on environmental hazards, exposures to those hazards, and health effects that may be related to the exposures.[20] The EPHT goal is to provide information that can be used to plan, apply, and evaluate actions to prevent and control environmentally related diseases.

CDC established the National Environmental Public Health Tracking Program to build a national EPHT network and increase capacity of State and university-based researchers to bridge the information gap between public health and the environment.[20] The program supports more than 25 State and local health departments and 4 schools of public health to increase collaboration between environmental and health agencies, identify and evaluate environmental and health data systems, and develop model systems linking environmental and health data that other States or localities can use.

Global environmental health. Water pollution is one of the principal environmental and public health problems facing the U.S.-Mexico border area.[21] Deficiencies in the treatment of wastewater, the disposal of untreated sewage, and inadequate operation and maintenance of treatment plants result in health risks. Better environmental services, such as sewer service, wastewater treatment service, and safe drinking water, may help achieve a balance among social and economic factors and protect the environment in border communities and natural areas. In addition, the Border Environment Cooperation Commission works to protect and enhance human health and the environment of the U.S.-Mexico border region. It is strengthening cooperation among interested parties and supporting sustainable projects through a binational process in coordination with Federal, State, and local agencies; the private sector; and civil society. Also, EPA, Mexico's Secretariat of Environment and Natural Resources, Mexico's Secretariat of Health, the U.S. border Tribes, and the environmental agencies from each of the 10 U.S.-Mexico border States have developed the binational Border 2012 Program.[6] The mission of the proposed program is to protect public health and the environment in the U.S.-Mexico border region, consistent with the principles of sustainable development. The program is intended to underscore the importance of measurable results, public participation, transparency, and timely access to environmental information.

Emerging Issues

Throughout the six topical sections of this focus area, a number of issues are emerging.

Outdoor air quality. Two major impediments to data collection and interpretation have been identified. First, annual weather may vary considerably so an annual summary statistic may not accurately account for short-term extreme weather, such as hurricanes or heat waves.[22] Second, not all counties have monitoring stations; therefore, data may not be available for some populations.[23]

The amount of air pollutants emitted per mile from cars has been greatly reduced.[24] However, these benefits are offset by the continuing increase in vehicle miles traveled and the popularity of light-duty trucks, SUVs, and minivans, which emit more pollution.

Water quality. Beach monitoring programs are typically run by local health agencies, and programs vary by location. Monitoring results are inconsistent because agencies use different indicator organisms and varying monitoring frequencies. As part of its beach grant program, EPA has set performance criteria that States and other governments must meet to receive beach grants.[25] These criteria are expected to improve the reporting of beach advisory data.

Toxics and waste. The public health issues associated with toxic substances are not always resolved after initial intervention. Some affected individuals may continue to have health concerns that must be addressed through ongoing case management, rehabilitation, mitigation of long-term sequelae, and other forms of tertiary prevention. For example, the Agency for Toxic Substances and Disease Registry (ATSDR) continues to provide health education at former vermiculite processing sites that received asbestos-contaminate. A number of these sites have been remediated, yet former workers and their families continue to be at risk for health effects from exposure to the ore. Health education provided by ATSDR teaches those affected how to reduce or mitigate their risk for developing exposure-related health effects.[26]

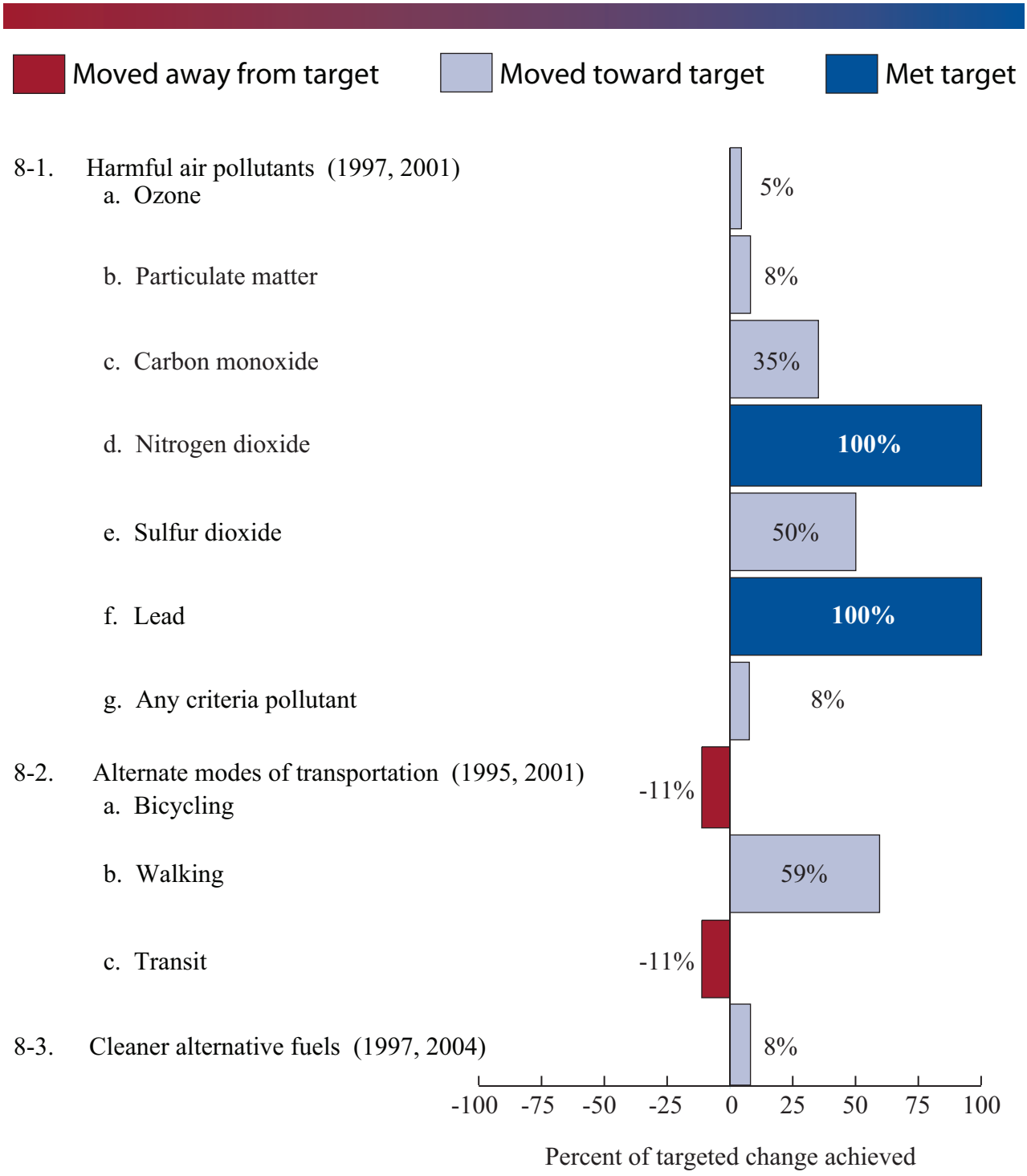
Healthy homes and communities. The rising number of deaths from asthma and allergy has increased awareness of the role of indoor allergens in producing and exacerbating asthma and allergy symptoms. In 2000, the Institute of Medicine released *Clearing the Air: Asthma and Indoor Air Exposures*.[27] This publication reviewed the evidence relating to the causation and exacerbation of asthma by indoor air exposures, including allergens from dust mites, cockroaches, dogs, and cats, as well as fungi and combustion products from gas appliances. The study concluded that high levels of dust mite allergen can cause asthma in susceptible populations. In addition, dust mite allergen and cockroach allergen can produce asthma attacks in persons who already have asthma. EPA and the National Institute of Environmental Health Sciences within NIH produce educational materials on strategies to control indoor allergens and to minimize exposure to them.[28]

Infrastructure and surveillance. The measurement of an environmental chemical in a person's blood or urine does not by itself mean the chemical causes disease. Although advances in analytical methods allow measurement of low levels of chemicals in people, separate studies of varying exposure levels and health effects are needed to determine that blood or urine levels result in disease. Such studies must also consider other factors such as duration of exposure, susceptibility of the population, and nutritional and other risk factors.

Global environmental health. Increased international travel and improvements in telecommunications and computer technology are making the world a smaller place. Actions in each country affect the environment and influence events around the world. For example, over the next several decades, more people will face water quality and quantity problems because of worldwide water shortages, especially in developing countries.[29, 30] Some of the main problems underlying this crisis are scarce resources, waste, and ineffective water management. Other contributing problems include decreases in the size of large bodies of fresh water, such as Asia's Aral Sea and Africa's Lake Chad, deterioration of coral reefs, and the rise of coastal waters resulting from climate changes.[31, 32] These situations indicate that many developing nations may experience future water shortages and deterioration of their sewer and drinking water systems. Improving the environmental health of people and their communities has positive social and economic benefits.

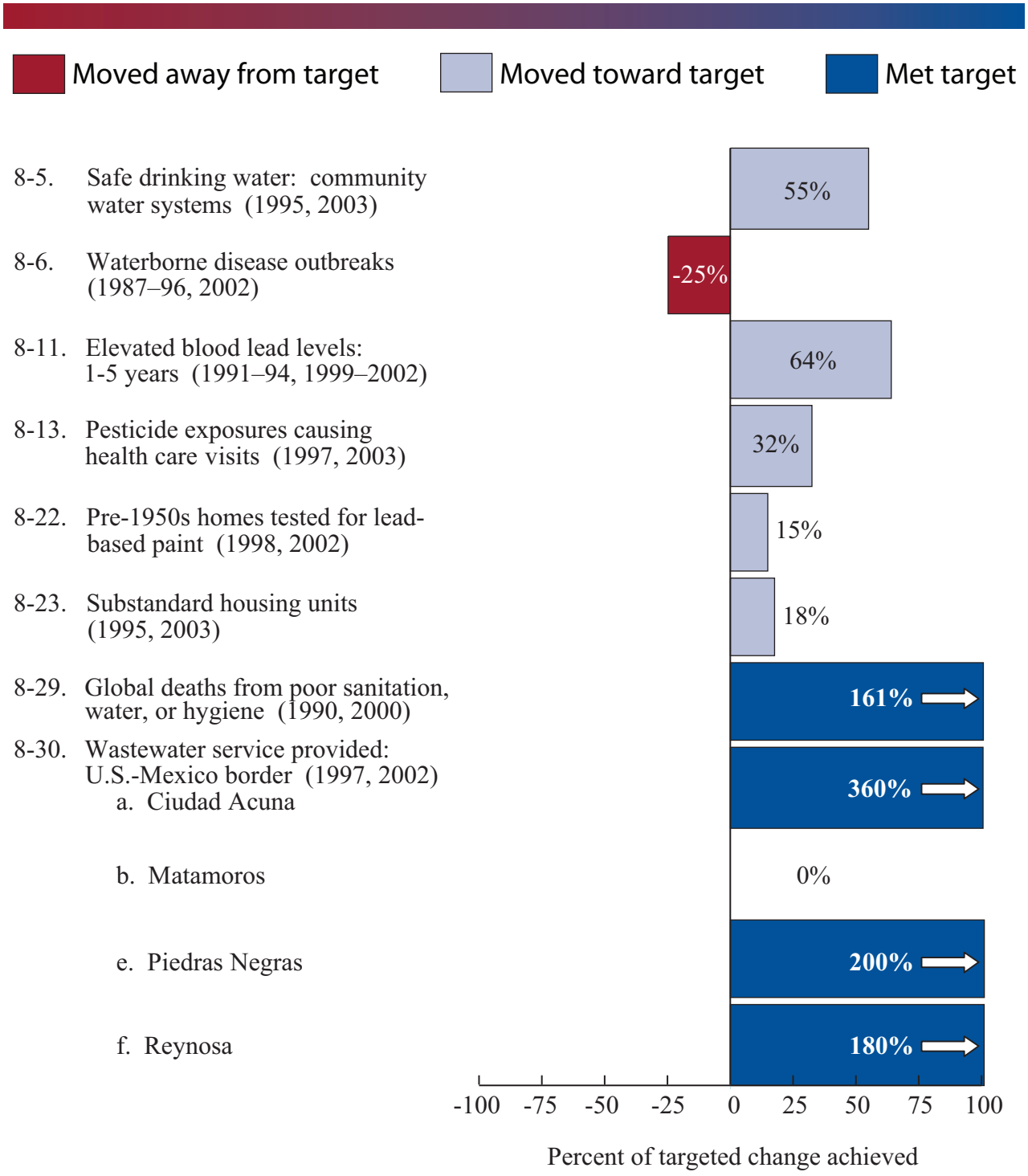
Water quality in the U.S.-Mexico border region faces diverse challenges. An important step to ensure future progress is to better coordinate with State, Tribal, and local governments, as well as with residents, industry, and nongovernmental organizations that have a stake in the border region. Through improved cooperation, priorities can be established and more effective activities initiated.

Figure 8-1. Progress Quotient Chart for Focus Area 8: Environmental Health



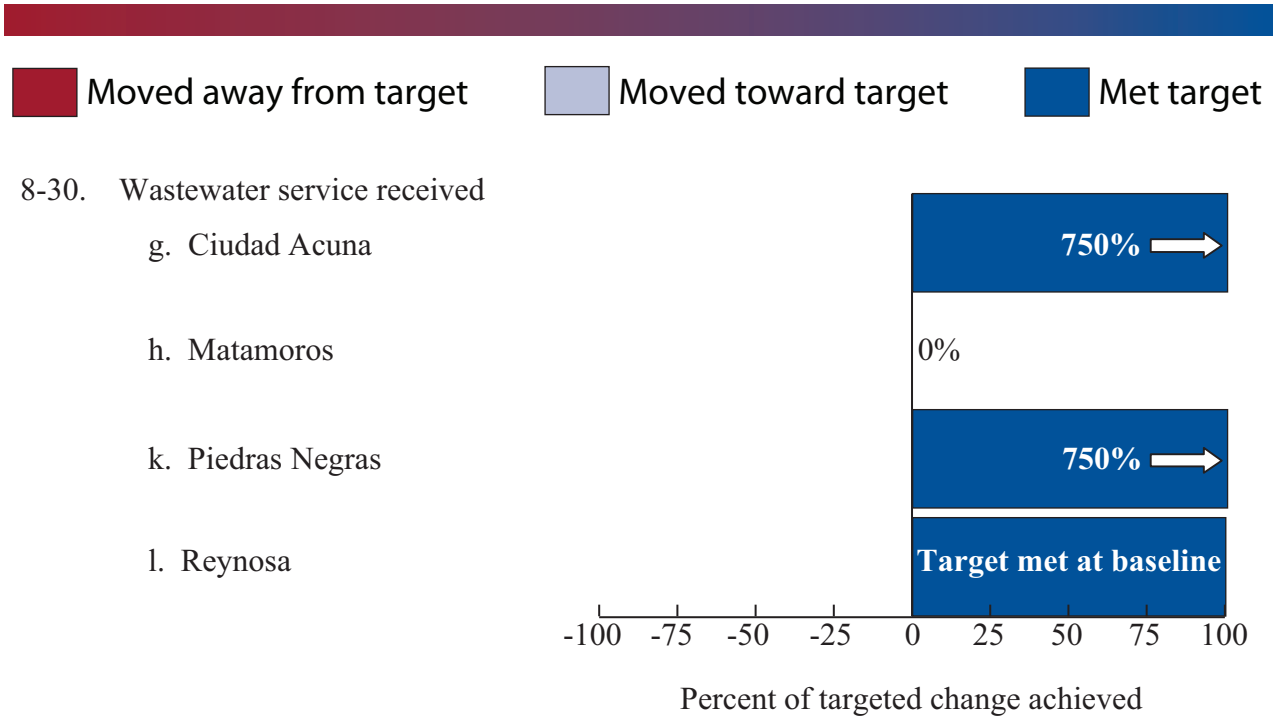
See notes at end of chart. *(continued)*

Figure 8-1. *(continued)*



See notes at end of chart. *(continued)*

Figure 8-1. *(continued)*



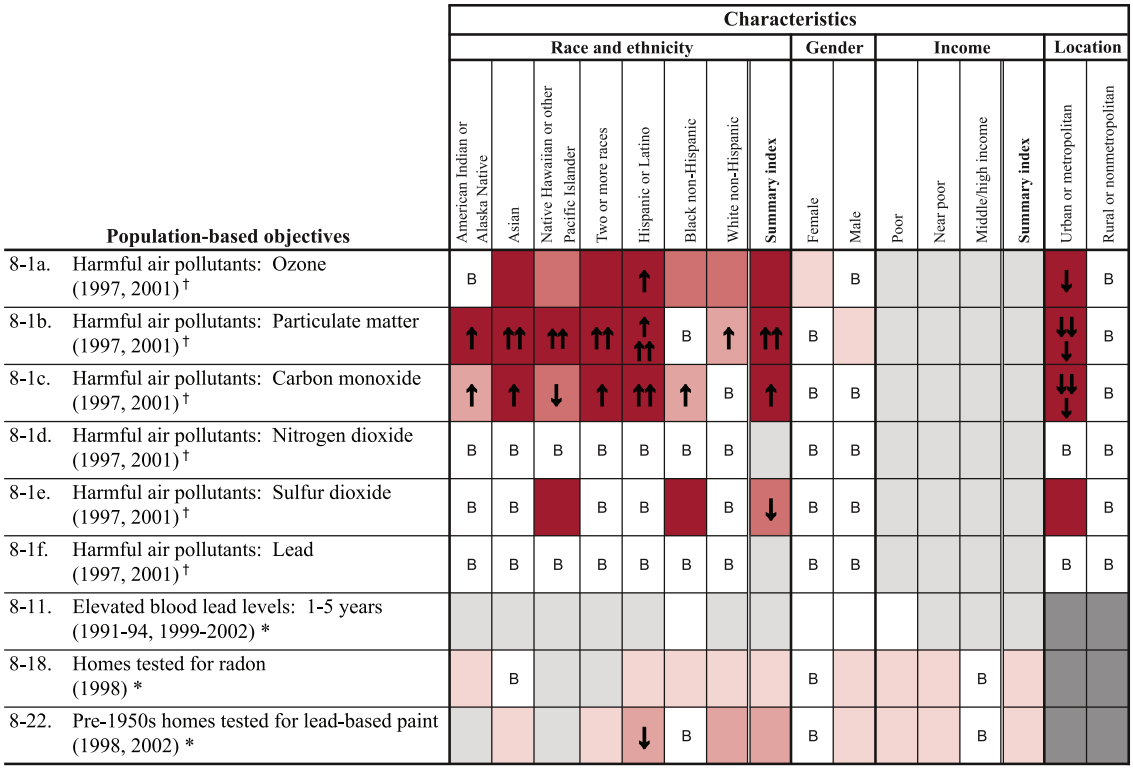
Notes: Tracking data for objectives 8-2d, 8-4, 8-7, 8-8a and b, 8-9, 8-10a and b, 8-12a through d, 8-14a and b, 8-15, 8-16a, b, and c, 8-17 through 8-21, 8-24b, c, and d, 8-25a through s, 8-26, 8-27a through k, and o, and 8-30c, d, i, and j are unavailable. Objectives 8-24a, 8-27l, m, and n, and 8-28 were deleted at the midcourse.

Years in parentheses represent the baseline data year and the most recent data year used to compute the percent of the Healthy People 2010 target achieved.

$$\text{Percent of targeted change achieved} = \left(\frac{\text{Most recent value} - \text{baseline value}}{\text{Year 2010 target} - \text{baseline value}}\right) \times 100$$

Figure 8-2. Disparities Table for Focus Area 8: Environmental Health

Disparities from the best group rate for each characteristic at the most recent data point and changes in disparity from the baseline to the most recent data point.



Notes: Data for objectives 8-1g, 8-2a through d, 8-3 through 8-7, 8-8a and b, 8-9, 8-10a and b, 8-12a through d, 8-13, 8-14a and b, 8-15, 8-16a, b, and c, 8-17, 8-19, 8-20, 8-21, 8-23, 8-24b, c, and d, 8-25a through s, 8-26, 8-27a through k, and o, 8-29, and 8-30a through l are unavailable or not applicable. Objectives 8-24a, 8-27l, m, and n, and 8-28 were deleted at the midcourse.

Years in parentheses represent the baseline data year and the most recent data year (if available).

Disparity from the best group rate is defined as the percent difference between the best group rate and each of the other group rates for a characteristic (for example, race and ethnicity). The summary index is the average of these percent differences for a characteristic. Change in disparity is estimated by subtracting the disparity at baseline from the disparity at the most recent data point. Change in the summary index is estimated by subtracting the summary index at baseline from the summary index at the most recent data point. See Technical Appendix for more information.

The **best group rate** at the most recent data point.	B The group with the best rate for specified characteristic.	b Most favorable group rate for specified characteristic, but reliability criterion not met.	Best group rate reliability criterion not met.
Disparity from the best group rate at the most recent data point.	**Percent difference from the best group rate**		
	Less than 10 percent or not statistically significant	10-49 percent	50-99 percent	100 percent or more
Changes in disparity over time are shown when the change is greater than or equal to 10 percentage points and statistically significant, or when the change is greater than or equal to 10 percentage points and estimates of variability were not available.	**Increase** in disparity (percentage points)		
	↑ 10-49	↑↑ 50-99	↑ ↑↑ 100 or more
	Decrease in disparity (percentage points)		
	↓ 10-49	↓↓ 50-99	↓↓ ↓ 100 or more
Availability of data.	Data not available.	Characteristic not selected for this objective.	

* The variability of best group rates was assessed, and disparities of ≥ 10% are statistically significant at the 0.05 level. Changes in disparity over time, noted with arrows, are statistically significant at the 0.05 level. See Technical Appendix.

† Measures of variability were not available. Thus, the variability of best group rates was not assessed, and the statistical significance of disparities and changes in disparity over time could not be tested. See Technical Appendix.

Objectives and Subobjectives for Focus Area 8: Environmental Health

Goal: Promote health for all through a healthy environment.

As a result of the Healthy People 2010 Midcourse Review, changes were made to the Healthy People 2010 objectives and subobjectives. These changes are specific to the following situations:

- Changes in the wording of an objective to more accurately describe what is being measured.
- Changes to reflect a different data source or new science.
- Changes resulting from the establishment of a baseline and a target (that is, when a formerly developmental objective or subobjective became measurable).
- Deletion of an objective or subobjective that lacked a data source.
- Correction of errors and omissions in *Healthy People 2010.*

Revised baselines and targets for measurable objectives and subobjectives do not fall into any of the above categories and, thus, are not considered a midcourse review change.[1]

When changes were made to an objective, three sections are displayed:

1. In the Original Objective section, the objective as published in *Healthy People 2010* in 2000 is shown.
2. In the Objective With Revisions section, strikethrough indicates text deleted, and underlining is used to show new text.
3. In the Revised Objective section, the objective appears as revised as a result of the midcourse review.

Details of the objectives and subobjectives in this focus area, including any changes made at the midcourse, appear on the following pages.

[1] See Technical Appendix for more information on baseline and target revisions.

Outdoor Air Quality

NO CHANGE IN OBJECTIVE
(Data updated and footnoted)

8-1. Reduce the proportion of persons exposed to air that does not meet the U.S. Environmental Protection Agency's health-based standards for harmful air pollutants.

Target and baseline:

Objective	Reduction in Air Pollutants	1997 Baseline	2010 Target
		Percent	
8-1a.	Ozone*	43	0
8-1b.	Particulate matter*†	12	0
8-1c.	Carbon monoxide	20[1]	0
8-1d.	Nitrogen dioxide	5	0
8-1e.	Sulfur dioxide	2	0
8-1f.	Lead	< 1	0
		Number	
8-1g.	Total number of people	137,019,000[2]	0

* The targets of zero percent for ozone and particulate matter are set for 2012 and 2018, respectively.
† PM_{10} is the only particulate size measured in the current data source.

Target setting method: Consistent with the Clean Air Act (Public Law 101-549).

Data source: Aerometric Information Retrieval System (AIRS), EPA, OAR.

Note: For the purpose of this objective, EPA is counting persons living in nonattainment areas only.

[1] Baseline revised from 19 after November 2000 publication.
[2] Baseline revised from 119,803,000 after November 2000 publication.

ORIGINAL OBJECTIVE

8-2. Increase use of alternative modes of transportation to reduce motor vehicle emissions and improve the Nation's air quality.

Target and baseline:

Objective	Increase in Use of Alternative Modes of Transportation	1995 Baseline	2010 Target
		Percent	
8-2a.	Trips made by bicycling	0.9	1.8

ORIGINAL OBJECTIVE *(continued)*

8-2b.	Trips made by walking	5.4	10.8
8-2c.	Trips made by transit	1.8	3.6
8-2d.	Persons who telecommute	Developmental	

Target setting method: Consistent with the goal of the National Bicycling and Walking Study, U.S. Department of Transportation (DOT).

Data source: Nationwide Personal Transportation Survey (NPTS), U.S. Department of Transportation.

OBJECTIVE WITH REVISIONS

8-2. Increase use of alternative modes of transportation to reduce motor vehicle emissions and improve the Nation's air quality.

Target and baseline:

Objective	Increase in Use of Alternative Modes of Transportation	1995 Baseline (unless noted)	2010 Target
		Percent	
8-2a.	Trips made by bicycling	0.9	1.8
8-2b.	Trips made by walking	5.4	10.8
8-2c.	Trips made by transit	1.8	3.6
8-2d.	Persons who telecommute	2.0 (2001) ~~Developmental~~	4.0

Target setting method: Consistent with the goal of the National Bicycling and Walking Study, U.S. Department of Transportation (DOT).

Data source: Nationwide Personal Transportation Survey (NPTS), U.S. Department of Transportation.

REVISED OBJECTIVE

8-2. Increase use of alternative modes of transportation to reduce motor vehicle emissions and improve the Nation's air quality.

Target and baseline:

Objective	Increase in Use of Alternative Modes of Transportation	1995 Baseline (unless noted)	2010 Target
		Percent	
8-2a.	Trips made by bicycling	0.9	1.8

REVISED OBJECTIVE *(continued)*

8-2b.	Trips made by walking	5.4	10.8
8-2c.	Trips made by transit	1.8	3.6
8-2d.	Persons who telecommute	2.0 (2001)	4.0

Target setting method: Consistent with the goal of the National Bicycling and Walking Study, U.S. Department of Transportation (DOT).

Data source: National Household Travel Survey (NHTS), U.S. Department of Transportation (DOT).

NO CHANGE IN OBJECTIVE
(Data updated and footnoted)

8-3. Improve the Nation's air quality by increasing the use of cleaner alternative fuels.

Target: 8[1] percent.

Baseline: Cleaner alternative fuels represented 0.8[2] percent of U.S. motor fuel consumption in 1997.

Target setting method: 10-fold improvement.

Data source: Alternatives to Traditional Transportation Fuels, U.S. Department of Energy, Energy Information Administration.

[1] Target revised from 30 because of baseline revision after November 2000 publication.
[2] Baseline revised from 2.7 after November 2000 publication.

NO CHANGE IN OBJECTIVE

8-4. Reduce air toxic emissions to decrease the risk of adverse health effects caused by airborne toxics.

Target: 2.0 million tons.

Baseline: 8.1 million tons of air toxics were released into the air in 1993.

Target setting method: 75 percent improvement.

Data source: U.S. National Toxics Release Inventory (TRI), EPA.

Water Quality

NO CHANGE IN OBJECTIVE
(Data updated and footnoted)

8-5. Increase the proportion of persons served by community water systems who receive a supply of drinking water that meets the regulations of the Safe Drinking Water Act.

Target: 95 percent.

Baseline: 84[1] percent of persons served by community water systems received drinking water that met SDWA (Public Law 93-523) regulations in 1995.

Target setting method: Consistent with EPA's 2003–08 Strategic Plan.

Data sources: Potable Water Surveillance System (PWSS) and Safe Drinking Water Information System (SDWIS), EPA.

[1] Baseline revised from 85 after November 2000 publication.

NO CHANGE IN OBJECTIVE

8-6. Reduce waterborne disease outbreaks arising from water intended for drinking among persons served by community water systems.

Target: 2 outbreaks.

Baseline: 6 outbreaks per year originated from community water systems (1987–96 average).

Target setting method: 67 percent improvement.

Data sources: State Reporting Systems, CDC, NCID; "CDC Surveillance for Waterborne Disease Outbreaks—United States, 1987–2002." *Morbidity and Mortality Weekly Report (MMWR)*, outbreaks associated with drinking water, biennial reports, beginning in 1987.

NO CHANGE IN OBJECTIVE

8-7. Reduce per capita domestic water withdrawals.

Target: 90.9 gallons.

Baseline: 101 gallons of domestic water per capita per day were withdrawn in 1995.

Target setting method: 10 percent improvement.

NO CHANGE IN OBJECTIVE *(continued)*

Data source: U.S. Department of Interior, U.S. Geological Survey (USGS), Reports on the Estimated Use of Water in the United States.

ORIGINAL OBJECTIVE

8-8. (Developmental) Increase the proportion of assessed rivers, lakes, and estuaries that are safe for fishing and recreational purposes.

Potential data source: Clean Water Act (Public Law 92-500), Section 305-b Report, EPA.

OBJECTIVE WITH REVISIONS

8-8. ~~(Developmental)~~ Increase the proportion of assessed rivers, lakes, and estuaries that are safe for fishing and recreational purposes.

Target and baseline:

Objective	Increase in Proportion of Assessed Rivers, Lakes, and Estuaries That Are Safe for Fishing and Recreational Purposes	2000 Baseline	2010 Target
		Percent Assessed Good[1]	
8-8a.	Rivers and streams	55	58
8-8b.	Lakes, ponds, and reservoirs	63	66

Target setting method: 5 percent improvement, consistent with EPA's 2003–08 Strategic Plan.

~~Potential d~~Data source: National Water Quality Inventory Reports, ~~Clean Water Act (Public Law 92-500), Section 305-b Report~~, EPA, Office of Water.

[1] Good is defined by EPA as fully supporting all of the following uses or fully supporting all uses but threatened for one or more uses: aquatic life support, fish consumption, primary contact [swimming], secondary contact [boating], drinking water supply, and agriculture.

REVISED OBJECTIVE

8-8. Increase the proportion of assessed rivers, lakes, and estuaries that are safe for fishing and recreational purposes.

Target and baseline:

Objective	Increase in Proportion of Assessed Rivers, Lakes, and Estuaries That Are Safe for Fishing and Recreational Purposes	2000 Baseline	2010 Target

REVISED OBJECTIVE *(continued)*

Objective	Increase in Proportion of Assessed Rivers, Lakes, and Estuaries That Are Safe for Fishing and Recreational Purposes	2000 Baseline	2010 Target
		Percent Assessed Good[1]	
8-8a.	Rivers and streams	55	58
8-8b.	Lakes, ponds, and reservoirs	63	66

Target setting method: 20 percent improvement, consistent with EPA's 2003–08 Strategic Plan.

Data source: National Water Quality Inventory Reports, EPA, Office of Water.

[1] Good is defined by EPA as fully supporting all of the following uses or fully supporting all uses but threatened for one or more uses: aquatic life support, fish consumption, primary contact [swimming], secondary contact [boating], drinking water supply, and agriculture.

ORIGINAL OBJECTIVE

8-9. (Developmental) Reduce the number of beach closings that result from the presence of harmful bacteria.

Potential data source: EPA Beach Program.

OBJECTIVE WITH REVISIONS

8-9. Increase the proportion of days that beaches are open and safe for swimming. ~~(Developmental) Reduce the number of beach closings that result from the presence of harmful bacteria.~~

Target: 98 percent.

Baseline: For the coastal recreation and Great Lakes beaches monitored by State beach safety programs, 94 percent of beach season days were open and safe for swimming in 2002.

Target setting method: Consistent with EPA's 2003–08 Strategic Plan.

~~Potential d~~Data source: BEACH Program, EPA, Office of Water.

REVISED OBJECTIVE

8-9. Increase the proportion of days that beaches are open and safe for swimming.

Target: 98 percent.

REVISED OBJECTIVE *(continued)*

Baseline: For the coastal recreation and Great Lakes beaches monitored by State beach safety programs, 94 percent of beach season days were open and safe for swimming in 2002.

Target setting method: Consistent with EPA's 2003–08 Strategic Plan.

Data source: BEACH Program, EPA, Office of Water.

ORIGINAL OBJECTIVE

8-10. (Developmental) Reduce the potential human exposure to persistent chemicals by decreasing fish contaminant levels.

Potential data sources: U.S. Department of the Interior, U.S. Fish and Wildlife Service and USGS.

OBJECTIVE WITH REVISIONS

8-10. ~~(Developmental)~~ Reduce the potential human exposure to persistent chemicals by decreasing fish contaminant levels.

Target and baseline:

Objective	Reduction in Advisories About Potential Human Exposure to Persistent Chemicals in Sport Fish	2002 Baseline	2010 Target
		Percent Under Advisories	
8-10a.	River miles	15.3	13.8
8-10b.	Lake acreage	32.9	29.6

Target setting method: 10 percent improvement, consistent with EPA's 2003–08 Strategic Plan.

~~Potential d~~Data sources: National Listing of Fish Advisories, EPA, Office of Water, ~~U.S. Department of the Interior, U.S. Fish and Wildlife Service and USGS.~~.

REVISED OBJECTIVE

8-10. Reduce the potential human exposure to persistent chemicals by decreasing fish contaminant levels.

Target and baseline:

Objective	Reduction in Advisories About Potential Human Exposure to Persistent Chemicals in Sport Fish	2002 Baseline	2010 Target

REVISED OBJECTIVE *(continued)*

		Percent Under Advisories	
8-10a.	River miles	15.3	13.8
8-10b.	Lake acreage	32.9	29.6

Target setting method: 10 percent improvement, consistent with EPA's 2003–08 Strategic Plan.

Data source: National Listing of Fish Advisories, EPA, Office of Water.

Toxics and Waste

NO CHANGE IN OBJECTIVE

8-11. Eliminate elevated blood lead levels in children.

Target: Zero percent.

Baseline: 4.4 percent of children aged 1 to 5 years had blood lead levels exceeding 10 µg/dL during 1991–94.

Target setting method: Total elimination.

Data source: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.

NO CHANGE IN OBJECTIVE

8-12. Minimize the risks to human health and the environment posed by hazardous sites.

Target: 98 percent of sites on the following lists:

8-12a.	National Priority List sites
8-12b.	Resource Conservation and Recovery Act facilities
8-12c.	Leaking underground storage facilities
8-12d.	Brownfield properties

Baseline: 1,200 National Priority List sites; 2,475 Resource Conservation and Recovery Act facilities; 370,000 leaking underground storage facilities; 1,500 brownfield properties in 1998.

Target setting method: Consistent with EPA's 1997 Strategic Plan.

NO CHANGE IN OBJECTIVE *(continued)*

Data source: Comprehensive Environmental Response and Cleanup Liability Information System (CERCLIS), EPA, Office of Solid Waste and Emergency Response (OSWER).

NO CHANGE IN OBJECTIVE (Data updated and footnoted)

8-13. Reduce pesticide exposures that result in visits to a health care facility.

Target: 11,398[1] visits per year.

Baseline: 22,933[2] visits to health care facilities were due to pesticides in 1997. (A total of 172,088[3] pesticide exposures were documented in 1997.)

Target setting method: 50.3 percent improvement.

Data source: Toxic Exposure Surveillance System (TESS), American Association of Poison Control Centers.

[1] Target revised from 13,500 because of baseline revision after November 2000 publication.
[2] Baseline revised from 27,156 after November 2000 publication.
[3] Total revised from 129,592 after November 2000 publication.

ORIGINAL OBJECTIVE

8-14. (Developmental) Reduce the amount of toxic pollutants released, disposed of, treated, or used for energy recovery.

Potential data source: U.S. National Toxics Release Inventory (TRI), EPA.

OBJECTIVE WITH REVISIONS

8-14. (Developmental) Reduce the amount of toxic pollutants generated and released ~~, disposed of, treated, or used for energy recovery~~to the environment.

8-14a.	Reduce the amount of toxic chemicals in production-related waste ("Green Index")
8-14b.	Reduce the amount of toxic chemicals released to the environment ("Clean Index")

Potential data source: U.S. National Toxics Release Inventory (TRI), EPA.

REVISED OBJECTIVE

8-14. (Developmental) Reduce the amount of toxic pollutants generated and released to the environment.

8-14a.	Reduce the amount of toxic chemicals in production-related waste ("Green Index")
8-14b.	Reduce the amount of toxic chemicals released to the environment ("Clean Index")

Potential data source: U.S. National Toxics Release Inventory (TRI), EPA.

NO CHANGE IN OBJECTIVE

8-15. Increase recycling of municipal solid waste.

Target: 38 percent.

Baseline: 27 percent of total municipal solid waste generated was recycled in 1996 (includes composting).

Target setting method: Consistent with the EPA's 1997 Strategic Plan.

Data source: Characterization of Municipal Solid Waste, EPA, Office of Surface Waste.

Healthy Homes and Healthy Communities

ORIGINAL OBJECTIVE

8-16. Reduce indoor allergen levels.

Target and baseline:

Objective	Allergen	1998–99 Baseline	2010 Target
		Number of Homes (in millions)	
8-16a.	Group I dust mite allergens that exceed 2 micrograms per gram of dust in the bed	36.3	29.0
8-16b.	Group I dust mite allergens that exceed 10 micrograms per gram of dust in the bed	18.6	14.9
8-16c.	German cockroach allergens that exceed 0.1 microgram per gram of dust in the bed	4.7	3.8

ORIGINAL OBJECTIVE *(continued)*

Target setting method: 20 percent improvement.

Data source: National Survey of Lead and Allergens in Housing, NIEHS, and U.S. Department of Housing and Urban Development.

OBJECTIVE WITH REVISIONS

8-16. Reduce indoor allergen levels.

Target and baseline:

Objective	~~Allergen~~Reduction in Proportion of Homes With Measured Allergens	1998–~~99~~ Baseline	2010 Target
		~~*Number of Homes (in millions)*~~ *Percent*	
8-16a.	Group I dust mite allergens that exceed 2 micrograms per gram of dust in the bed	~~36.3~~46.2	~~29.0~~37.0
8-16b.	Group I dust mite allergens that exceed 10 micrograms per gram of dust in the bed	~~18.6~~24.2	~~14.9~~19.4
8-16c.	German cockroach allergens that exceed 0.1 ~~microgram~~ unit per gram of dust in the bed	~~4.7~~6.1	~~3.8~~4.9

REVISED OBJECTIVE

8-16. Reduce indoor allergen levels.

Target and baseline:

Objective	Reduction in Proportion of Homes With Measured Allergens	1998 Baseline	2010 Target
		Percent	
8-16a.	Group I dust mite allergens that exceed 2 micrograms per gram of dust in the bed	46.2	37.0
8-16b.	Group I dust mite allergens that exceed 10 micrograms per gram of dust in the bed	24.2	19.4
8-16c.	German cockroach allergens that exceed 0.1 unit per gram of dust in the bed	6.1	4.9

Target setting method: 20 percent improvement.

REVISED OBJECTIVE *(continued)*

Data source: National Survey of Lead and Allergens in Housing, NIEHS, and U.S. Department of Housing and Urban Development.

ORIGINAL OBJECTIVE

8-17. (Developmental) Increase the number of office buildings that are managed using good indoor air quality practices.

Potential data source: EPA, Indoor Environment Division.

OBJECTIVE WITH REVISIONS

8-17. (Developmental) Increase the number of office buildings that are managed using good indoor air quality practices.

Potential data source: ~~Indoor Environment Division~~Building Assessment Survey and Evaluation (BASE), EPA, Office of Radiation and Indoor Air.

REVISED OBJECTIVE

8-17. (Developmental) Increase the number of office buildings that are managed using good indoor air quality practices.

Potential data source: Building Assessment Survey and Evaluation (BASE), EPA, Office of Radiation and Indoor Air.

NO CHANGE IN OBJECTIVE

8-18. Increase the proportion of persons who live in homes tested for radon concentrations.

Target: 20 percent.

Baseline: 17 percent of the population lived in homes in 1998 that had been tested for radon (age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data source: National Health Interview Survey (NHIS), CDC, NCHS.

NO CHANGE IN OBJECTIVE

8-19. Increase the number of new homes constructed to be radon resistant.

Target: 2.1 million additional new homes.

Baseline: 1.4 million new homes as of 1997.

Target setting method: 50 percent improvement.

Data source: National Association of Home Builders Research Center Survey, National Association of Home Builders.

ORIGINAL OBJECTIVE

8-20. (Developmental) Increase the proportion of the Nation's primary and secondary schools that have official school policies ensuring the safety of students and staff from environmental hazards, such as chemicals in special classrooms, poor indoor air quality, asbestos, and exposure to pesticides.

Potential data source: School Health Policies and Programs Study (SHPPS), CDC, NCCDPHP.

OBJECTIVE WITH REVISIONS

8-20. ~~(Developmental)~~ Increase the proportion of the Nation's elementary, middle, junior high, and senior high~~primary and secondary~~ schools that have official school policies ensuring the safety of students and staff from environmental hazards, such as chemicals in special classrooms, poor indoor air quality, asbestos, and exposure to pesticides.

Target: 100 percent of schools having such policies.

Baseline: 94 percent of schools had such policies in 2000.

Target setting method: Total coverage.

~~Potential d~~Data source: School Health Policies and Programs Study (SHPPS), CDC, ~~NCCDPHP~~DASH.

REVISED OBJECTIVE

8-20. Increase the proportion of the Nation's elementary, middle, junior high, and senior high schools that have official school policies ensuring the safety of students and staff from environmental hazards, such as chemicals in special classrooms, poor indoor air quality, asbestos, and exposure to pesticides.

Target: 100 percent of schools having such policies.

REVISED OBJECTIVE *(continued)*

Baseline: 94 percent of schools had such policies in 2000.

Target setting method: Total coverage.

Data source: School Health Policies and Programs Study (SHPPS), CDC, DASH.

ORIGINAL OBJECTIVE

8-21. (Developmental) Ensure that State health departments establish training, plans, and protocols and conduct annual multi-institutional exercises to prepare for response to natural and technological disasters.

Potential data sources: Association of State and Territorial Health Officials (ASTHO); Public Health Foundation.

OBJECTIVE WITH REVISIONS

8-21. ~~(Developmental)~~ Ensure that State and District of Columbia health departments establish training, plans, and protocols and conduct annual multi-institutional exercises to prepare for response to natural and technological disasters.

Target: All States and the District of Columbia.

Baseline: 36 States had established preparedness plans and scheduled exercises in 2003.

Target setting method: Total coverage.

~~Potential d~~Data sources: Association of State and Territorial Health Officials (ASTHO); ~~Public Health Foundation~~ Division of State and Local Readiness, CDC.

REVISED OBJECTIVE

8-21. Ensure that State and District of Columbia health departments establish training, plans, and protocols and conduct annual multi-institutional exercises to prepare for response to natural and technological disasters.

Target: All States and the District of Columbia.

Baseline: 36 States had established preparedness plans and scheduled exercises in 2003.

Target setting method: Total coverage.

Data sources: Association of State and Territorial Health Officials (ASTHO); Division of State and Local Readiness, CDC.

NO CHANGE IN OBJECTIVE

8-22. Increase the proportion of persons living in pre-1950s housing that has been tested for the presence of lead-based paint.

Target: 50 percent.

Baseline: 16 percent of persons aged 18 years and older living in homes built before 1950 in 1998 reported that their homes had been tested for the presence of lead-based paint (age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data source: National Health Interview Survey (NHIS), CDC, NCHS.

ORIGINAL OBJECTIVE

8-23. Reduce the proportion of occupied housing units that are substandard.

Target: 3.1[1] percent.

Baseline: 6.5[2] percent of occupied U.S. housing units had moderate or severe physical problems in 1995.

Target setting method: 52 percent improvement.

Data source: American Housing Survey, U.S. Department of Commerce, Bureau of the Census.

[1] Target revised from 3.0 because of baseline revision after November 2000 publication.
[2] Baseline revised from 6.2 after November 2000 publication.

OBJECTIVE WITH REVISIONS

8-23. Reduce the proportion of occupied housing units that <u>have moderate or severe physical problems</u> ~~are substandard~~.

Target: 3.1[1] percent.

Baseline: 6.5[2] percent of occupied U.S. housing units had moderate or severe physical problems in 1995.

Target setting method: 52 percent improvement.

Data source: American Housing Survey, U.S. Department of Commerce, Bureau of the Census.

[1] Target revised from 3.0 because of baseline revision after November 2000 publication.
[2] Baseline revised from 6.2 after November 2000 publication.

REVISED OBJECTIVE

8-23. Reduce the proportion of occupied housing units that have moderate or severe physical problems.

Target: 3.1[1] percent.

Baseline: 6.5[2] percent of occupied U.S. housing units had moderate or severe physical problems in 1995.

Target setting method: 52 percent improvement.

Data source: American Housing Survey, U.S. Department of Commerce, Bureau of the Census.

[1] Target revised from 3.0 because of baseline revision after November 2000 publication.
[2] Baseline revised from 6.2 after November 2000 publication.

Infrastructure and Surveillance

ORIGINAL OBJECTIVE

8-24. Reduce exposure to pesticides as measured by urine concentrations of metabolites.

Target and baseline:

Objective	Reduction in Pesticide Exposure as Measured by Metabolites (Pesticide)	1988–94 Baseline*	2010 Target
		Urine Concentration	
8-24a.	1-naphthol (carbaryl)	36.0 µg/g creatinine	25.2 µg/g creatinine
8-24b.	Paranitrophenol (methyl parathion and parathions)	3.8 µg/g creatinine	2.7 µg/g creatinine
8-24c.	3, 5, 6-trichloro-2-pyridinol (chlorpyrifos)	8.3 µg/g creatinine	5.8 µg/g creatinine
8-24d.	Isopropoxyphenol (propoxur)	1.6 µg/g creatinine	1.1 µg/g creatinine

* 95 percent of the population had concentrations below this level.

Target setting method: 30 percent improvement.

Data source: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.

Note: Data are from a subset of NHANES data and are not nationally representative. Therefore, a population data template is not available.

OBJECTIVE WITH REVISIONS (Including subobjective deleted)

8-24. Reduce exposure to pesticides as measured by urine concentrations of metabolites.

Target and baseline:

Objective*	Reduction in Pesticide Exposure as Measured by Metabolites (Pesticide)	1988–94 Baseline†	2010 Target
		Urine Concentration	
~~**8-24a.**~~	(*Subobjective deleted due to change in science)* ~~1-naphthol (carbaryl)~~	~~36.0 µg/g creatinine~~	~~25.2 µg/g creatinine~~
8-24b.	Paranitrophenol (methyl parathion and parathions)	3.8 µg/g creatinine	2.7 µg/g creatinine
8-24c.	3, 5, 6-trichloro-2-pyridinol (chlorpyrifos)	8.3 µg/g creatinine	5.8 µg/g creatinine
8-24d.	Isopropoxyphenol (propoxur)	1.6 µg/g creatinine	1.1 µg/g creatinine

* For data control purposes, subobjectives are not renumbered.
† 95 percent of the population had concentrations below this level.

Target setting method: 30 percent improvement. (Population data will be provided if the information becomes available.)

Data source: ~~National Health and Nutrition Examination Survey (NHANES)~~ National Report on Human Exposure to Environmental Chemicals, CDC, ~~NCHS.~~

~~Note: Data are from a subset of NHANES data and are not nationally representative. Therefore, a population data template is not available.~~

REVISED OBJECTIVE

8-24. Reduce exposure to pesticides as measured by urine concentrations of metabolites.

Target and baseline:

Objective*	Reduction in Pesticide Exposure as Measured by Metabolites (Pesticide)	1988–94 Baseline†	2010 Target
		Urine Concentration	
8-24b.	Paranitrophenol (methyl parathion and parathions)	3.8 µg/g creatinine	2.7 µg/g creatinine
8-24c.	3, 5, 6-trichloro-2-pyridinol (chlorpyrifos)	8.3 µg/g creatinine	5.8 µg/g creatinine
8-24d.	Isopropoxyphenol (propoxur)	1.6 µg/g creatinine	1.1 µg/g creatinine

REVISED OBJECTIVE *(continued)*

* For data control purposes, subobjectives are not renumbered.
† 95 percent of the population had concentrations below this level.

Target setting method: 30 percent improvement. (Population data will be provided if the information becomes available.)

Data source: National Report on Human Exposure to Environmental Chemicals, CDC, NCHS.

ORIGINAL OBJECTIVE

8-25. (Developmental) Reduce exposure of the population to pesticides, heavy metals, and other toxic chemicals, as measured by blood and urine concentrations of the substances or their metabolites.

Target and baseline:

Objective	Exposure Item
8-25a.	Arsenic
8-25b.	Cadmium
8-25c.	Lead
8-25d.	Manganese
8-25e.	Mercury
8-25f.	2, 4-D
8-25g.	o-phenylphenol
8-25h.	Permethrins
8-25i.	Diazinon
8-25j.	Polychlorinated biphenyls
8-25k.	Dioxins
8-25l.	Furans
8-25m.	Chlordane
8-25n.	Dieldrin
8-25o.	DDT
8-25p.	Lindane

Potential data source: National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.

OBJECTIVE WITH REVISIONS

8-25. ~~(Developmental)~~ Reduce exposure of the population to pesticides, heavy metals, and ~~other toxic~~ selected environmental chemicals, as measured by blood and urine concentrations of the substances or their metabolites.

Target and baseline:

Objective*	Exposure Item	1999–2000 Baseline‡	2010 Target
		Concentration of the Substance or Its Metabolites	
	Heavy metals		
8-25a.	Arsenic	Developmental	
8-25b.	Cadmium	1.3 µg/L	0.9 µg/L
8-25c.	Lead	4.9 µg/L	3.4 µg/L
8-25d.	Manganese	Developmental	
8-25e.	Mercury, children aged 1 to 5 years	2.3 µg/L	1.6 µg/L
	Pesticides		
8-25f.	2, 4-D	Developmental	
8-25g.	o-phenylphenol	2.9 µg/g creatinine	2.0 µg/g creatinine
8-25h.	cis- and trans-Permethrins	Developmental	
8-25i.	Diazinon	Developmental	
	Persistent chemicals		
8-25j.	Polychlorinated biphenyls	Developmental	
8-25k.	Dioxins	Developmental	
8-25l.	Furans	Developmental	
	Organochlorine compounds		
8-25m.	Chlordane	44.9 ng/g lipid	31.4 ng/g lipid
8-25n.	Dieldrin	Developmental	
8-25o.	DDT (DDE)	1780 ng/g lipid	1250 ng/g lipid
8-25p.	Lindane (beta-HCH)	68.9 ng/g lipid	48.2 ng/g lipid
	Heavy metals		
8-25q.	Mercury, females aged 16 to 49 years	7.1 µg/L	5.0 µg/L
	Organochlorine compounds		
8-25r.	Chlordane (trans-Nonachlor)	79.4 ng/g lipid	55.6 ng/g lipid
8-25s.	Chlordane (Heptachlor epoxide)	23.9 ng/g lipid	16.7 ng/g lipid

OBJECTIVE WITH REVISIONS *(continued)*

* For data control purposes, subobjectives are not renumbered.
† 95 percent of the population had concentrations below this level.

Target setting method: 30 percent improvement.

~~**Potential d**~~**Data source:** National Report on Human Exposure to Environmental Chemicals, ~~National Health and Nutrition Examination Survey (NHANES),~~ CDC, ~~NCHS~~.

REVISED OBJECTIVE

8-25. Reduce exposure of the population to pesticides, heavy metals, and selected environmental chemicals, as measured by blood and urine concentrations of the substances or their metabolites.

Target and baseline:

Objective*	Exposure Item	1999–2000 Baseline†	2010 Target
		Concentration of the Substance or Its Metabolites	
	Heavy metals		
8-25a.	Arsenic	Developmental	
8-25b.	Cadmium	1.3 µg/L	0.9 µg/L
8-25c.	Lead	4.9 µg/L	3.4 µg/L
8-25d.	Manganese	Developmental	
8-25e.	Mercury, children aged 1 to 5 years	2.3 µg/L	1.6 µg/L
	Pesticides		
8-25f.	2, 4-D	Developmental	
8-25g.	o-phenylphenol	2.9 µg/g creatinine	2.0 µg/g creatinine
8-25h.	cis- and trans-Permethrins	Developmental	
8-25i.	Diazinon	Developmental	
	Persistent chemicals		
8-25j.	Polychlorinated biphenyls	Developmental	
8-25k.	Dioxins	Developmental	
8-25l.	Furans	Developmental	
	Organochlorine compounds		
8-25m.	Chlordane (oxychlordane)	44.9 ng/g lipid	31.4 ng/g lipid

REVISED OBJECTIVE *(continued)*

8-25n.	Dieldrin	Developmental	
8-25o.	DDT (DDE)	1780 ng/g lipid	1250 ng/g lipid
8-25p.	Lindane (beta-HCH)	68.9 ng/g lipid	48.2 ng/g lipid
	Heavy metals		
8-25q.	Mercury, females aged 16 to 49 years	7.1 µg/L	5.0 µg/L
	Organochlorine compounds		
8-25r.	Chlordane (trans-Nonachlor)	79.4 ng/g lipid	55.6 ng/g lipid
8-25s.	Chlordane (Heptachlor epoxide)	23.9 ng/g lipid	16.7 ng/g lipid

* For data control purposes, subobjectives are not renumbered.
† 95 percent of the population had concentrations below this level.

Target setting method: 30 percent improvement.

Data source: National Report on Human Exposure to Environmental Chemicals, CDC.

ORIGINAL OBJECTIVE

8-26. (Developmental) Improve the quality, utility, awareness, and use of existing information systems for environmental health.

Potential data sources: Toxics Release Inventory, EPA; Environmental Defense Fund.

OBJECTIVE WITH REVISIONS

8-26. ~~(Developmental)~~ Improve the quality, utility, awareness, and use of existing information systems for environmental health.

Target: 30 States.

Baseline: 15 States used linked health effect, exposure, and hazard data for environmental public health surveillance in 2004.

Target setting method: 100 percent improvement.

~~Potential d~~Data sources: ~~Toxics Release Inventory, EPA; Environmental Defense Fund.~~ National Environmental Public Health Tracking Network, CDC.

REVISED OBJECTIVE

8-26. Improve the quality, utility, awareness, and use of existing information systems for environmental health.

Target: 30 States.

Baseline: 15 States used linked health effect, exposure, and hazard data for environmental public health surveillance in 2004.

Target setting method: 100 percent improvement.

Data source: National Environmental Public Health Tracking Network, CDC.

ORIGINAL OBJECTIVE

8-27. Increase or maintain the number of Territories, Tribes, and States, and the District of Columbia that monitor diseases or conditions that can be caused by exposure to environmental hazards.

Target and baseline:

Objective*	Disease	1997 Baseline	2010 Target
		Number of Jurisdictions	
8-27a.	Lead poisoning	51	51
8-27b.	Pesticide poisoning	20	25
8-27c.	Mercury poisoning	14	20
8-27d.	Arsenic poisoning	10	15
8-27e.	Cadmium poisoning	10	15
8-27f.	Methemoglobinemia	9	15
8-27g.	Acute chemical poisoning†	8	15
8-27h.	Carbon monoxide poisoning	7	51
8-27i.	Asthma	6	25
8-27j.	Hyperthermia	4	10
8-27k.	Hypothermia	Developmental	
8-27l.	Skin cancer	Developmental	
8-27m.	Malignant melanoma	Developmental	
8-27n.	Other skin cancer	Developmental	
8-27o.	Birth defects	Developmental	

ORIGINAL OBJECTIVE *(continued)*

* For data control purposes, subobjectives are not renumbered.
† Includes chemicals not covered elsewhere in the table.

Note: Target and baseline data are for States and the District of Columbia. The targets will be adjusted as data for Tribes and Territories become available.

Target setting method: Total coverage or expert opinion.

Data sources: Periodic surveys, Public Health Foundation and Council of State and Territorial Epidemiologists.

OBJECTIVE WITH REVISIONS (Including subobjectives deleted)

8-27. Increase or maintain the number of Territories, Tribes, and States, and the District of Columbia that monitor diseases or conditions that can be caused by exposure to environmental hazards.

Target and baseline:

Objective*	Disease	1997 Baseline (unless noted)	2010 Target
		Number of Jurisdictions	
	Heavy metals		
8-27a.	Lead poisoning	51	51
8-27b.	Pesticide poisoning	20	25
8-27c.	Mercury poisoning	14	20
8-27d.	Arsenic poisoning	10	15
8-27e.	Cadmium poisoning	10	15
8-27f.	Methemoglobinemia	9	15
8-27g.	Acute chemical poisoning†	8	15
8-27h.	Carbon monoxide poisoning	7	51
8-27i.	Asthma	6	25
8-27j.	Hyperthermia	4	10
8-27k.	Hypothermia	4 (1999–2000)	51
~~**8-27l.**~~	*(Subobjective deleted due to monitoring in Objective 3-14)* ~~Skin cancer~~	~~Developmental~~	
~~**8-27m.**~~	*(Subobjective deleted due to monitoring in Objective 3-14)* ~~Malignant melanoma~~	~~Developmental~~	

OBJECTIVE WITH REVISIONS *(continued)*
(Including subobjectives deleted)

~~**8-27n.**~~	*(Subobjective deleted due to monitoring in Objective 3-14)* ~~Other skin cancer~~	~~Developmental~~	
8-27o.	Birth defects	35 (1999–2000)	51

* For data control purposes, subobjectives are not renumbered.
† Includes chemicals not covered elsewhere in the table.

Note: Target and baseline data are for States and the District of Columbia. The targets will be adjusted as data for Tribes and Territories become available.

Target setting method: Total coverage or expert opinion.

Data sources: Periodic surveys, Public Health Foundation, Council of State and Territorial Epidemiologists, and CDC, National Center on Birth Defects and Developmental Disabilities.

REVISED OBJECTIVE

8-27. Increase or maintain the number of Territories, Tribes, and States, and the District of Columbia that monitor diseases or conditions that can be caused by exposure to environmental hazards.

Target and baseline:

Objective*	Disease	1997 Baseline (unless noted)	2010 Target
		Number of Jurisdictions	
	Heavy metals		
8-27a.	Lead poisoning	51	51
8-27b.	Pesticide poisoning	20	25
8-27c.	Mercury poisoning	14	20
8-27d.	Arsenic poisoning	10	15
8-27e.	Cadmium poisoning	10	15
8-27f.	Methemoglobinemia	9	15
8-27g.	Acute chemical poisoning†	8	15
8-27h.	Carbon monoxide poisoning	7	51
8-27i.	Asthma	6	25
8-27j.	Hyperthermia	4	10

REVISED OBJECTIVE *(continued)*

8-27k.	Hypothermia	4 (1999–2000)	51
8-27o.	Birth defects	35 (1999–2000)	51

* For data control purposes, subobjectives are not renumbered.
† Includes chemicals not covered elsewhere in the table.

Note: Target and baseline data are for States and the District of Columbia. The targets will be adjusted as data for Tribes and Territories become available.

Target setting method: Total coverage or expert opinion.

Data sources: Periodic surveys, Public Health Foundation, Council of State and Territorial Epidemiologists, and CDC, National Center on Birth Defects and Developmental Disabilities.

OBJECTIVE DELETED

8-28. ***(Objective deleted due to lack of data source)*** **(Developmental) Increase the number of local health departments or agencies that use data from surveillance of environmental risk factors as part of their vector control programs.**

Global Environmental Health

NO CHANGE IN OBJECTIVE

8-29. Reduce the global burden of disease due to poor water quality, sanitation, and personal and domestic hygiene.

Target: 2,135,000 deaths.

Baseline: 2,668,200 deaths worldwide were attributable to these factors in 1990.

Target setting method: 20 percent improvement.

Data source: World Health Report 2003, World Health Organization.

NO CHANGE IN OBJECTIVE

8-30. Increase the proportion of the population in the U.S.-Mexico border region that has adequate drinking water and sanitation facilities.

Target and baseline:

Objective	Type of Drinking Water and Sanitation Service	1997 Baseline	2010 Target

NO CHANGE IN OBJECTIVE *(continued)*

		Percent of Population Receiving Water Service or Treatment	
	Wastewater sewer service provided		
8-30a.	Ciudad Acuna	39	49
8-30b.	Matamoros	47	57
8-30c.	Mexicali	80	90
8-30d.	Nogales, Sonora	81	91
8-30e.	Piedras Negras	80	90
8-30f.	Reynosa	57	67
	Wastewater receiving treatment		
8-30g.	Ciudad Acuna	0	10
8-30h.	Matamoros	0	10
8-30i.	Mexicali	72	82
8-30j.	Nogales, Sonora	100	100
8-30k.	Piedras Negras	0	10
8-30l.	Reynosa	100	100

Target setting method: 10 percentage point improvement.

Data sources: EPA; Mexico's Comisión Nacional de Agua; State and local health departments; American Water Works Association; Rural Water Association; U.S.-Mexican Border Health Association.

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Related Objectives From Other Focus Areas

1. Access to Quality Health Services
1-7. Core competencies in health profession training
1-12. Single toll-free number for poison control centers

3. Cancer
3-1. Overall cancer deaths
3-2. Lung cancer deaths
3-8. Melanoma deaths
3-9. Sun exposure and skin cancer
3-10. Provider counseling about cancer prevention
3-14. Statewide cancer registries

4. Chronic Kidney Disease
4-1. End-stage renal disease

6. Disability and Secondary Conditions
6-12. Environmental barriers affecting participation in activities

7. Educational and Community-Based Programs
7-2. School health education
7-10. Community health promotion programs

10. Food Safety
10-1. Foodborne infections
10-2. Outbreaks of foodborne infections
10-5. Consumer food safety practices

11. Health Communication
11-1. Households with Internet access
11-2. Health literacy
11-4. Quality of Internet health information sources

12. Heart Disease and Stroke
12-1. Coronary heart disease (CHD) deaths

14. Immunization and Infectious Diseases
14-31. Scientific knowledge of vaccine safety

15. Injury and Violence Prevention
15-7. Nonfatal poisonings
15-8. Deaths from poisoning
15-10. Emergency department surveillance systems
15-11. Hospital discharge surveillance systems
15-12. Emergency department visits

15-13. Deaths from unintentional injuries
15-14. Emergency department visits for nonfatal unintentional injuries

16. Maternal, Infant, and Child Health

16-10. Low birth weight and very low birth weight
16-11. Preterm births
16-14. Developmental disabilities

20. Occupational Safety and Health

20-1. Work-related injury deaths
20-2. Work-related injuries
20-7. Elevated blood lead levels
20-8. Occupational skin diseases or disorders

22. Physical Activity and Fitness

22-14. Community walking
22-15. Community bicycling

23. Public Health Infrastructure

23-2. Public access to information and surveillance data
23-3. Use of geocoding in health data systems
23-4. Data for all population groups
23-6. National tracking of Healthy People 2010 objectives
23-7. Timely release of data on objectives
23-8. Competencies for public health workers
23-9. Training in essential public health services
23-10. Continuing education for public health personnel
23-11. Performance standards for essential public health services
23-12. Health improvement plans
23-13. Access to public health laboratory services
23-14. Access to epidemiology services
23-15. Review and evaluation of public health laws
23-17. Population-based prevention research

24. Respiratory Diseases

24-1. Deaths from asthma
24-2. Hospitalizations for asthma
24-3. Hospital emergency department visits for asthma
24-4. Activity limitations
24-5. School or work days lost
24-6. Patient education
24-7. Appropriate asthma care
24-8. Surveillance systems

27. Tobacco Use

27-9. Exposure to tobacco smoke at home among children
27-10. Exposure to environmental tobacco smoke
27-11. Smoke-free and tobacco-free schools
27-12. Worksite smoking policies
27-13. Smoke-free indoor air laws

28. Vision and Hearing

28-16. Hearing protection
28-17. Noise-induced hearing loss in children
28-18. Noise-induced hearing loss in adults