



Environmental Health



CHAPTER 8

Co-Lead Agencies

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

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GOAL:

Promote health for all through a healthy environment.



This chapter includes objectives that monitor progress in six general Healthy People areas:

- › The Outdoor Air Quality area monitors the proportion of persons exposed to air containing harmful pollutants.
- › The Surface and Ground Water Quality area tracks contaminants in drinking water, fish, and recreational water.
- › The Toxics and Waste area monitors exposures to toxic substances and hazardous waste.
- › The Healthy Homes and Healthy Communities area focuses on environmental factors in homes, schools, and worksites.
- › Infrastructure and Surveillance addresses the availability of methods to detect environmental hazards (e.g., chemical, biological, and other factors that may adversely affect health), exposures to these hazards, and the diseases potentially caused by these hazards.
- › Global Environmental Health objectives address the global burden of disease due to poor water quality, sanitation, personal and domestic hygiene, and the proportion of the population in the U.S.–Mexico border region that has adequate drinking water and sanitation facilities.

All Healthy People tracking data quoted in this chapter, along with technical information and Operational Definitions for each objective, can be found in the Healthy People 2010 database, DATA2010, available from <http://wonder.cdc.gov/data2010/>.

More information about this Focus Area can be found in the following publications:

- › *Healthy People 2010: Understanding and Improving Health*, available from <http://www.healthypeople.gov/2010/Document/tableofcontents.htm#under>.

- › *Healthy People 2010 Midcourse Review*, available from: <http://www.healthypeople.gov/2010/data/midcourse/html/default.htm#FocusAreas>.

Highlights

- › Substantial progress was achieved in objectives for this Focus Area during the past decade [1]. Eighty-four percent of the Environmental Health objectives with data to measure progress moved toward or achieved their Healthy People 2010 targets (Figure 8-1). However, health disparities were observed among racial and ethnic populations in their exposure to harmful air pollutants (Figure 8-2) [2]. Similar disparities were observed between populations residing in urban and rural locations.
- › Between 1997 and 2010, exposure to harmful air pollutants (objectives 8-1a through g) declined for all pollutants tracked. The proportion of persons living in counties that exceed National Ambient Air Quality Standards (NAAQS) for carbon monoxide (objective 8-1c) declined from 20% to 0%; the proportion for nitrogen dioxide (objective 8-1d) declined from 5% to 0%; the proportion for sulfur dioxide (objective 8-1e) declined from 2% to 0%; and the proportion for lead (objective 8-1f) declined from less than 1% to 0% in 2010, all meeting the Healthy People 2010 targets of 0% for those pollutants. Although the 2010 targets were not met for ozone (objective 8-1a) and particulate matter (objective 8-1b), air quality for these pollutants improved, declining 16.3% and 25.0%, respectively. The data presented here do not reflect tighter standards that were issued after the targets had been set.
- › The proportion of people living in counties that exceeded NAAQS for ozone (objective 8-1a) declined 25.0% between 1997 and 2010, from 43% to 36%.

moving toward the 2010 target of 0%. However, the final data year by race and ethnicity was 2004, and at that time, disparities were observed for a number of population groups:

- Among racial and ethnic groups, the American Indian or Alaska Native population had the lowest (best) rate of living in counties that exceeded NAAQS for ozone (objective 8-1a), 23% in 2004, whereas the non-Hispanic white, Native Hawaiian or Other Pacific Islander, non-Hispanic black, Hispanic or Latino, and Asian populations had rates of 33%, 35%, 43%, 59%, and 67%, respectively. The rate for the non-Hispanic white population was almost one and a half times the best group rate (that for the American Indian or Alaska Native population); the rate for the Native Hawaiian or Other Pacific Islander population was about one and a half times the best group rate; the rate for the non-Hispanic black population was almost twice the best group rate; the rate for the Hispanic or Latino population was more than two and a half times the best group rate; and the rate for the Asian population was nearly three times the best group rate [2].
 - The rural or nonmetropolitan population had better rates of exposure to ozone (4% in 1997 and 3% in 2004) than the urban or metropolitan population (52% in 1997 and 48% in 2004). In 2004, the rate for the urban or metropolitan population was 16 times the rate for the rural or nonmetropolitan population. Between 1997 and 2004, the disparity in ozone exposure between the rural/nonmetropolitan and the urban/metropolitan populations increased 300 percentage points [3].
- › The proportion of people living in counties that exceeded NAAQS for particulate matter (objective 8-1b) declined 25.0% between 1997 and 2010, from 12% to 9%. However, the final data year by race and ethnicity also was 2004 and, at that time, disparities were observed for a number of population groups.
 - Among racial and ethnic groups, the non-Hispanic black population had the lowest (best) rate of particulate matter exposure (objective 8-1b), 6% in 2004. The American Indian or Alaska Native population had a rate of 13%, more than twice the best rate. The Asian and Native Hawaiian or Other Pacific Islander populations each had a rate of 22%, over three and a half times the best rate. The Hispanic or Latino population had a rate of 28%, more than four and a half times the best rate [2].
 - The rural or nonmetropolitan population had lower (better) rates of exposure to particulate matter (1% in 1997 and 2004) than the urban or metropolitan population (15% in 1997 and 13% in 2004). In 2004, the rate for the urban or

metropolitan population was 13 times the rate for the rural or nonmetropolitan population. Between 1997 and 2004, the disparity in particulate matter between the rural/nonmetropolitan and the urban/metropolitan populations decreased 200 percentage points [3].

- › The use of alternate modes of transportation increased. Trips made by transit (objective 8-2c) increased 116.7% between 1995 and 2009, from 1.8% to 3.9%, exceeding the 2010 target of 3.6%. Trips made by walking (objective 8-2b) increased 92.6%, from 5.4% to 10.4%, almost achieving the 2010 target of 10.8%. Smaller gains were made for trips by bicycle (objective 8-2a) and telecommuting (objective 8-2d), which increased 11.1% and 40.0% respectively.
- › The proportion of persons served by water systems that met safe drinking water standards (objective 8-5) increased 9.5% between 1995 and 2008, from 84% to 92%, moving toward the 2010 target of 95%. The number of waterborne disease outbreaks (objective 8-6) declined 83.3% from 1987–96 to 2008, from 6 outbreaks to 1, exceeding the target of 2 outbreaks. However, there was little progress in water conservation (objective 8-7). Between 1995 and 2005, the daily per capita gallons of domestic water usage declined only 2%.
- › The risks posed by hazardous sites on the National Priority Sites List (objective 8-12a) declined 11.8% between 1998 and 2008, from 1,290 to 1,138 sites, exceeding the 2010 target of 1,176 sites.
- › Progress was made in exposure to environmental pesticides and chemicals (objectives 8-24 and 8-25). Four of the 15 objectives with data to measure progress met or exceeded their 2010 targets: exposure to propoxur (objective 8-24d) declined from 1.1 µg/gm of creatinine for the 90th percentile of the population aged 6–59 years to below the level of detection (0.4 µg); o-Phenylphenol (objective 8-25g) declined 40.0%; diazinon (objective 8-25i) was below the level of detection in 1999–2000 (0.58 µg) and 2001–02 (0.5 µg); and mercury in females aged 16–49 years (objective 8-25q) declined 35.3%. Eight objectives made progress toward their targets. However, three moved away from their targets, including exposure to chlorpyrifos (objective 8-24c) which increased 10.8%, cadmium (objective 8-25b) which increased 14.3%, and DDT (objective 8-25o) which increased 1.6%.

Summary of Progress

- › Figure 8-1 presents a quantitative assessment of progress in achieving the Healthy People objectives for Environmental Health. Data to measure progress

toward target attainment were available for 61 objectives [1]. Of these:

- Twenty-one objectives met or exceeded the Healthy People 2010 targets (objectives 8-1c through f; 8-2c; 8-6; 8-12a; 8-19; 8-24d; 8-25g, i, and q; 8-27d and e; and 8-30a, e through i, and l).
 - Thirty objectives moved toward their targets. A statistically significant difference between the baseline and final data points was observed for one objective (8-22). Data to test the significance of the difference between the baseline and final data points were unavailable for all the remaining objectives (8-1a b, and g; 8-2a, b, and d; 8-3 through 5; 8-7; 8-9; 8-13; 8-15; 8-23; 8-24b; 8-25c, e, m, n, p, r, and s; 8-27a through c, i, and o; and 8-29).
 - Two objectives showed no change (objectives 8-27g and 8-30b).
 - Eight objectives moved away from their targets (objectives 8-10a and b, 8-24c, 8-25b and o, 8-27h, and 8-30j and l). Data to test the significance of the difference between the baseline and final data points were unavailable for any of these objectives.
- › Eight objectives (8-14a and b; 8-17; 8-25d, h, and j through l) remained developmental and 18 objectives had no follow-up data available to measure progress (objectives 8-8a and b; 8-12b through d; 8-16a through c; 8-18; 8-20; 8-21; 8-25a and f; 8-27f, j and k; and 8-30c and d) [4]. Five objectives (8-24a, 8-27l through n, and 8-28) were deleted at the Midcourse Review. Data for one objective (8-11) became statistically unreliable.
- › Figure 8-2 displays health disparities in Environmental Health from the best group rate for each characteristic at the most recent data point [2]. It also displays changes in disparities from baseline to the most recent data point [3].
- One objective (8-22) had statistically significant racial and ethnic health disparities of 10% or more. Five other objectives (8-1a through c, e, and g) had racial and ethnic health disparities of 10% or more but lacked data to assess statistical significance. Of these six objectives, the American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and non-Hispanic black populations each had the best group rate for one objective. The non-Hispanic black and non-Hispanic white populations were tied for the best group rate for objective 8-1c (exposure to carbon monoxide); persons of two or more races and the non-Hispanic black populations were tied for the best group rate for objective 8-22 (persons in pre-1950s homes tested for lead paint). All racial and ethnic populations except for the Native Hawaiian or Other Pacific Islander population

were tied for the best group rate for objective 8-1e (exposure to sulfur dioxide).

- Females had a better rate than males for the one objective with health disparities of 10% or more by sex (8-1b, exposure to particulate matter).
- Persons living in rural or nonmetropolitan areas had better rates than persons living in urban or metropolitan areas for all four objectives (8-1a through c, and g) with health disparities of 10% or more by geographic location.
- Several objectives with health disparities of 100% or more by race and ethnicity and by geographic location were observed, as were objectives with changes in health disparities of 100 percentage points or more over time. These objectives were discussed in the Highlights, above.

Transition to Healthy People 2020

The Healthy People 2020 Environmental Health Topic Area has fewer objectives than those included in Healthy People 2010. See [HealthyPeople.gov](https://www.healthypeople.gov) for a complete list of Healthy People 2020 topics and objectives.

The Healthy People 2020 objectives can be grouped into several sections:

- › Outdoor air quality
- › Surface and ground water quality
- › Toxics and waste
- › Healthy homes and healthy communities
- › Infrastructure and surveillance
- › Global environmental health.

The differences between the Healthy People 2010 and Healthy People 2020 objectives are summarized below:

- › The Healthy People 2020 Environmental Health Topic Area has a total of 67 objectives, whereas the Healthy People 2010 Environmental Health Focus Area had 93 objectives.
- › Twenty-seven Healthy People 2010 objectives were retained “as is” [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 (objective 8-5).
 - Reduce waterborne disease outbreaks arising

- from water intended for drinking among persons served by community water systems (objective 8-6).
- Eliminate elevated blood lead levels in children (objective 8-11).
 - Minimize the risks to human health and the environment posed by hazardous sites: National Priority List sites (objective 8-12a).
 - Reduce pesticide exposures that result in visits to a health care facility (objective 8-13).
 - Increase recycling of municipal solid waste (objective 8-15).
 - Reduce the proportion of occupied housing units that have moderate or severe physical problems (objective 8-22).
 - Reduce exposure to pesticides as measured by urine concentrations of metabolites:
 - Paranitrophenol (methyl parathion and parathions) (objective 8-24b)
 - 3,4,6-trichloro-2-pyridinol(chlorpyrifos)(objective 8-24c).
 - Reduce exposure to selected environmental chemicals in the population, as measured by blood and urine concentrations of the substances or their metabolites:
 - Arsenic (objective 8-25a)
 - Cadmium (objective 8-25b)
 - Lead (objective 8-25c)
 - Mercury, children aged 1–5 years (objective 8-25e)
 - Mercury, females aged 16–49 years (objective 8-25q)
 - Chlordane (Oxychlordane) (objective 8-25m)
 - DDT (DDE) (objective 8-25o)
 - Beta-hexacyclochlorohexane or beta-HCH (objective 8-25p)
 - *cis*- and *trans*-Permethrin (objective 8-25h)
 - Dioxins (objective 8-25k).
 - Improve the utility, awareness, and use of existing information systems for environmental health (objective 8-26).
 - Increase the number of territories, tribes, and states (including the District of Columbia) that monitor diseases or conditions that can be caused by exposure to environmental hazards:
 - Lead poisoning (objective 8-27a)
 - Pesticide poisoning (objective 8-27b)
 - Mercury poisoning (objective 8-27c)
 - Arsenic poisoning (objective 8-27d)
 - Cadmium poisoning (objective 8-27e)
 - Acute chemical poisoning (objective 8-27g)
 - Carbon monoxide poisoning (objective 8-27h).
 - Twenty-one Healthy People 2010 objectives were modified, expanded, and retained, resulting in 35 objectives in Healthy People 2020 [6].
 - In Healthy People 2010, there were seven objectives (8-1a through g) that tracked air quality separately for each of six criteria air pollutants (ozone, carbon monoxide, nitrogen dioxide, particulate matter, sulfur dioxide, and lead), and the total population exposed to any of these. In Healthy People 2020, air quality is tracked by a single objective (Air Quality Index), which is a composite measure of criteria air pollutants.
 - The objectives (8-2a through d) to increase use of alternative modes of transportation for work commutes, to reduce motor vehicle emissions and improve the nation's air quality, has a new, more timely data source.
 - The objective to reduce air toxic emissions to decrease the risk of adverse health effects caused by airborne toxics (objective 8-4) was split into three objectives by source type.
 - The objective for school policies to protect against environmental hazards (objective 8-20) was split into nine objectives to separately track specific policies.
 - Other objectives had changes in operational definition.
- › Thirty-six Healthy People 2010 objectives were archived [7]. These include objectives addressing: cleaner alternative fuels (objective 8-3); water bodies safe for fishing and recreation (objectives 8-8a and b); fish consumption advisories (objectives 8-10a and b); risks posed by hazardous sites (objectives 8-12b through d); indoor allergens (objectives 8-16a and b); proportion of persons living in homes tested for radon (objective 8-18); disaster preparedness plans, protocols, and exercises (objective 8-21); exposure to pesticides (objectives 8-24d, and 8-25f, g, i, n, r, and s); monitoring environmentally related diseases (objectives 8-27f, i through k, and o); and water quality in the U.S.–Mexico border region (objectives 8-30a through l).
- In general, these objectives were archived because the data source could not produce consistent, comparable data. In the case of cleaner alternative fuels, it was not clear what negative externalities would be associated with the increased use of these fuels. Objectives related to monitoring exposure to environmental chemicals were archived because the measures used to monitor them were below the limits of

detection, or because the public health concern could be tracked by a related chemical or was not deemed a significant public health concern by CDC.

› Five Healthy People 2010 objectives were deleted at the Midcourse Review:

- Exposure to pesticides—Urine concentrations in $\mu\text{g/g}$ creatinine—1-naphthol (carbaryl) (aged 6 years and over) (objective 8-24a) was deleted because it was an inadequate environmental marker.
- Monitoring environmentally related diseases—Skin cancer (objective 8-27l) was deleted because it was being tracked by objective 3-14 (cancer registries).
- Monitoring environmentally related diseases—Malignant melanoma (objective 8-27m) was deleted because it was tracked by objective 3-14 (cancer registries).
- Monitoring environmentally related diseases—Other skin cancer (objective 8-27n) was deleted because it was tracked by objective 3-14 (cancer registries).
- Local agencies using surveillance data for vector control (objective 8-28) was deleted due to the lack of a national data source.

› Four Healthy People 2010 objectives that remained developmental were removed during the Healthy People 2020 planning process, due to lack of a data source, or because data was never produced by the data source, or because the measure was consistently below the level of detection, or because the measure was an inadequate environmental marker.

- Production-related waste released by the business sector (objective 8-14a)
- Office building air quality—Number of buildings that are managed using good indoor air quality practices (objective 8-17)
- Exposure to pesticides, heavy metals, and selected environmental chemicals—Manganese (objective 8-25d)
- Exposure to pesticides, heavy metals, and selected environmental chemicals—Furans (objective 8-25l).

› Five new objectives were added for Healthy People 2020:

- Exposure to potential endocrine disruptors—Bisphenol A
- Exposure to potential endocrine disruptors—Perchlorate
- Exposure to potential endocrine disruptors—Mono-n-butyl phthalate

- Exposure to potential endocrine disruptors—BDE 47 (2,2',4,4'-tetrabromodiphenyl ether)
- Reduce the number of new schools sited within 500 feet of an interstate or Federal or State highway.

[Appendix D](#), “A Crosswalk between Objectives from Healthy People 2010 to Healthy People 2020,” summarizes the changes between the two decades of objectives, reflecting new knowledge and direction for this area.

Data Considerations

Education and income are the primary measures of socioeconomic status in Healthy People 2010. Most data systems used in Healthy People 2010 define income as a family’s income before taxes. To facilitate comparisons among groups and over time, while adjusting for family size and for inflation, Healthy People 2010 categorizes income using the poverty thresholds developed by the U.S. Census Bureau. Thus, the three categories of family income that are primarily used are:

- › Poor—below the Federal poverty level
- › Near poor—100% to 199% of the Federal poverty level
- › Middle/high income—200% or more of the Federal poverty level.

These categories may be overridden by considerations specific to the data system, in which case they are modified as appropriate. See *Healthy People 2010: General Data Issues*, referenced below.

Information on data issues is available from the following sources:

- › All Healthy People 2010 tracking data can be found in the Healthy People 2010 database, DATA2010, available from <http://wonder.cdc.gov/data2010/>.
- › Detailed information about the data and data sources used to support these objectives can be found in the Operational Definitions on the DATA 2010 website, available from <http://wonder.cdc.gov/data2010/focusod.htm>.
- › More information on statistical issues related to Healthy People tracking and measurement can be found in the [Technical Appendix](#) and in *Healthy People 2010: General Data Issues*, which is available in the General Data Issues section of the NCHS Healthy People website under Healthy People 2010; see http://www.cdc.gov/nchs/healthy_people/hp2010/hp2010_data_issues.htm.

Notes

1. Displayed in the Progress Chart (Figure 8-1), the percent of targeted change achieved expresses the difference between the baseline and the final value relative to the initial difference between the baseline and the Healthy People 2010 target. As such, it is a relative measure of progress toward attaining the Healthy People 2010 target. See the [Reader's Guide](#) for more information. When standard errors were available, the difference between the baseline and the final value was tested at the 0.05 level of significance. See the Figure 8-1 footnotes, as well as the [Technical Appendix](#), for more detail.
2. Information about disparities among select populations is shown in the Health Disparities Table (Figure 8-2). 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, racial and ethnic health disparities are measured as the percent difference between the best racial and ethnic group rate and each of the other racial and ethnic group rates. Similarly, disparities by sex are measured as the percent difference between the better group rate (e.g., female) and the rate for the other group (e.g., male). Some objectives are expressed in terms of favorable events or conditions that are to be increased, while others are expressed in terms of adverse events or conditions that are to be reduced. To facilitate comparison of health disparities across different objectives, disparity is measured only in terms of adverse events or conditions. For comparability across objectives, objectives that are expressed in terms of favorable events or conditions are re-expressed using the adverse event or condition for the purpose of computing disparity, but they are not otherwise restated or changed. For example, objective 1-1, to increase the proportion of persons with health insurance (e.g., 72% of the American Indian or Alaska Native population under age 65 had some form of health insurance in 2008), is expressed in terms of the percentage of persons without health insurance (e.g., $100\% - 72\% = 28\%$ of the American Indian or Alaska Native population under age 65 did not have any form of health insurance in 2008) when the disparity from the best group rate is calculated. See the [Reader's Guide](#) for more information. When standard errors were available, the difference between the best group rate and each of the other group rates was tested at the 0.05 level of significance. See the Figure 8-2 footnotes, as well as the [Technical Appendix](#), for more detail.
3. The change in disparity is estimated by subtracting the disparity at baseline from the disparity at the most recent data point and, therefore, is expressed in percentage points. See the [Reader's Guide](#) for more information. When standard errors were available, the change in disparity was tested at the 0.05 level of significance. See the Figure 8-2 footnotes, as well as the [Technical Appendix](#), for more detail.
4. To be included in Healthy People 2010, an objective must have a national data source that provides a baseline and at least one additional data point for tracking progress. Some objectives lacked baseline data at the time of their development but had a potential data source and were considered of sufficient national importance to be included in Healthy People. These are called "developmental" objectives. When data become available, a developmental objective is moved to measurable status and a Healthy People target can be set.
5. As of the Healthy People 2020 launch, Healthy People 2020 objectives that were retained "as is" from Healthy People 2010 had no change in the numerator or denominator definitions, the data source(s), or the data collection methodology. These include objectives that were developmental in Healthy People 2010 and are developmental in Healthy People 2020, and for which no numerator information is available.
6. As of the Healthy People 2020 launch, objectives that were modified from Healthy People 2010 had some change in the numerator or denominator definitions, the data source(s), or the data collection methodology. These include objectives that went from developmental in Healthy People 2010 to measurable in Healthy People 2020, or vice versa.
7. Archived objectives had at least one data point in Healthy People 2010 but were not carried forward into Healthy People 2020.

Comprehensive Summary of Objectives: Environmental Health

| Objective | Description | Data Source or Objective Status |
|-----------|--|---|
| 8-1a | Percent of persons exposed to harmful air pollutants—Ozone | Air Quality System (AQS), Environmental Protection Agency (EPA). |
| 8-1b | Percent of persons exposed to harmful air pollutants—Particulate matter ($\leq 10 \mu\text{m}$ in diameter) | Air Quality System (AQS), Environmental Protection Agency (EPA). |
| 8-1c | Percent of persons exposed to harmful air pollutants—Carbon monoxide | Air Quality System (AQS), Environmental Protection Agency (EPA). |
| 8-1d | Percent of persons exposed to harmful air pollutants—Nitrogen dioxide | Air Quality System (AQS), Environmental Protection Agency (EPA). |
| 8-1e | Percent of persons exposed to harmful air pollutants—Sulfur dioxide | Air Quality System (AQS), Environmental Protection Agency (EPA). |
| 8-1f | Percent of persons exposed to harmful air pollutants—Lead | Air Quality System (AQS), Environmental Protection Agency (EPA). |
| 8-1g | Number of persons (thousands) exposed to any harmful air pollutants | Air Quality System (AQS), Environmental Protection Agency (EPA). |
| 8-2a | Alternative modes of transportation—Trips made by bicycling | National Household Travel Survey (NHTS), formerly Nationwide Personal Transportation Survey (NPTS), Department of Transportation (DOT). |
| 8-2b | Alternative modes of transportation—Trips made by walking | National Household Travel Survey (NHTS), formerly Nationwide Personal Transportation Survey (NPTS), Department of Transportation (DOT). |
| 8-2c | Alternative modes of transportation—Trips made by transit | National Household Travel Survey (NHTS), formerly Nationwide Personal Transportation Survey (NPTS), Department of Transportation (DOT). |
| 8-2d | Alternative modes of transportation—Persons who telecommute | National Household Travel Survey (NHTS), formerly Nationwide Personal Transportation Survey (NPTS), Department of Transportation (DOT). |
| 8-3 | Cleaner alternative fuels | Alternatives to Traditional Transportation Fuels, Department of Energy, (DOE). |
| 8-4 | Airborne toxins (million tons) | National Emissions Inventory (NEI), Environmental Protection Agency (EPA). |
| 8-5 | Safe drinking water | Potable Water Surveillance System (PWSS) and Safe Drinking Water Information System (SDWIS), Environmental Protection Agency (EPA). |
| 8-6 | Waterborne disease outbreaks (average no. per year) | State Reporting Systems, CDC, NCID. |
| 8-7 | Water conservation (gallons of domestic water usage per capita per day) | Estimated Use of Water in the United States, Department of Interior (DOI). |
| 8-8a | Water bodies safe for fishing and recreation—Rivers and streams | National Water Quality Inventory (NWQI), Environmental Protection Agency (EPA). |
| 8-8b | Water bodies safe for fishing and recreation—Lakes, ponds, and reservoirs | National Water Quality Inventory (NWQI), Environmental Protection Agency (EPA). |
| 8-9 | Beach open and safe for swimming (percent of days during beach season) | Beaches Environmental Assessment, Closure and Health Program (BEACH), Environmental Protection Agency (EPA). |
| 8-10a | Fish consumption advisories—Rivers | National Listing of Fish Advisories, Environmental Protection Agency (EPA). |

Comprehensive Summary of Objectives: Environmental Health (continued)

| Objective | Description | Data Source or Objective Status |
|-----------|---|---|
| 8-10b | Fish consumption advisories—Lakes | National Listing of Fish Advisories, Environmental Protection Agency (EPA). |
| 8-11 | Elevated blood lead levels in children 1–5 years (≥ 10 $\mu\text{g}/\text{dL}$) | National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-12a | Risks posed by hazardous sites—National Priority List sites | Comprehensive Environmental Response and Cleanup Liability Information System (CERCLIS), Environmental Protection Agency (EPA). |
| 8-12b | Risks posed by hazardous sites—Resource Conservation and Recovery Act facilities | Resource Conservation Recovery Act Info (RCRAInfo), Environmental Protection Agency (EPA). |
| 8-12c | Risks posed by hazardous sites—Leaking underground storage facilities | Environmental Protection Agency (EPA). |
| 8-12d | Risks posed by hazardous sites—Brownfield properties | Environmental Protection Agency (EPA). |
| 8-13 | Pesticide exposures resulting in visits to a health care facility (no. of visits per year) | Toxic Exposure Surveillance System (TESS), American Association of Poison Control Centers. |
| 8-14a | Production-related waste released by the business sector (per unit of production) | Developmental. |
| 8-14b | Toxic chemicals released by the business sector (per unit of production) | Developmental. |
| 8-15 | Recycled municipal solid waste (percent of total municipal solid waste) | Municipal Solid Waste in the United States, Environmental Protection Agency (EPA). |
| 8-16a | Indoor allergens—Group 1 dust mite allergens >2 $\mu\text{g}/\text{g}$ of dust in bed | National Survey of Lead and Allergens in Housing: NIH, NIEHS; Department of Housing and Urban Development (HUD). |
| 8-16b | Indoor allergens—Group 1 dust mite allergens >10 $\mu\text{g}/\text{g}$ of dust in bed | National Survey of Lead and Allergens in Housing: NIH, NIEHS; Department of Housing and Urban Development (HUD). |
| 8-16c | Indoor allergens—German cockroach allergens >0.1 unit/g of dust in the bed | National Survey of Lead and Allergens in Housing: NIH, NIEHS; Department of Housing and Urban Development (HUD). |
| 8-17 | Office buildings that are managed using good indoor air quality practices (no. of buildings) | Developmental. |
| 8-18 | Proportion of persons living in homes tested for radon (age adjusted) | National Health Interview Survey (NHIS), CDC, NCHS. |
| 8-19 | Radon-resistant new home construction (no. of homes) | National Association of Home Builders Research Center Survey, National Association of Home Builders. |
| 8-20 | School policies to protect against environmental hazards | School Health Policies and Programs Study (SHPPS), CDC, NCCDPHP. |
| 8-21 | Disaster preparedness plans, protocols, and exercises (no. States and D.C.) | Association of State and Territorial Health Officials (ASTHO); CDC, Division of State and Local Readiness (DSLRL). |
| 8-22 | Proportion of persons in pre-1950s homes tested for lead-based paint (age adjusted, 18+ years) | National Health Interview Survey (NHIS), CDC, NCHS. |
| 8-23 | Substandard housing (percent of homes with moderate or severe physical problems) | American Housing Survey (AHS), Department of Commerce, Census Bureau. |
| 8-24a | Pesticide exposure—Urine concentrations ($\mu\text{g}/\text{g}$ creatinine, 6–59 years)—1 naphthol (carbaryl) ($\mu\text{g}/\text{g}$ creatinine) | Deleted at the Midcourse Review. |

Comprehensive Summary of Objectives: Environmental Health (continued)

| Objective | Description | Data Source or Objective Status |
|-----------|---|--|
| 8-24b | Pesticide exposure—Urine concentrations (µg/g creatinine, 6–59 years)—Paranitrophenol (methyl parathion and parathions) (µg/g creatinine) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-24c | Pesticide exposure—Urine concentrations (µg/g creatinine, 6–59 years)—3, 5, 6-trichloro-2-pyridinol (chlorpyrifos) (µg/g creatinine) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-24d | Pesticide exposure—Urine concentrations (µg/g creatinine, 6–59 years)—Isopropoxyphenol (propoxur) (µg/g creatinine) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-25a | Exposure to Arsenic | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-25b | Exposure to Cadmium—Blood concentration (µg/L blood) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-25c | Exposure to Lead—Blood concentration (µg/L blood) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-25d | Exposure to Manganese | Developmental. |
| 8-25e | Mercury in children aged 1–5 years—Blood concentration (µg/L blood) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-25f | Exposure to 2, 4-Dichlorophenoxyacetic acid (µg/g creatinine) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-25g | Exposure to o-Phenylphenol—Urine concentration (µg/g creatinine) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-25h | Exposure to <i>cis</i> - and <i>trans</i> -Permethrin | Developmental. |
| 8-25i | Exposure to Diazinon—Urine concentration (µg/g creatinine) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-25j | Exposure to Polychlorinated biphenyls | Developmental. |
| 8-25k | Exposure to Dioxins | Developmental. |
| 8-25l | Exposure to Furans | Developmental. |
| 8-25m | Exposure to Chlordane/Oxychlordane—Serum concentration (ng/g lipid) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-25n | Exposure to Dieldrin—Serum concentration (ng/g lipid) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-25o | Exposure to DDT/DDE—Serum concentration (ng/g lipid) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |

Comprehensive Summary of Objectives: Environmental Health (continued)

| Objective | Description | Data Source or Objective Status |
|-----------|---|--|
| 8-25p | Exposure to Lindane/beta-HCH—Serum concentration (ng/g lipid) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-25q | Exposure to Mercury in females aged 16–49 years—Blood concentration (µg/L) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-25r | Exposure to Chlordane/trans-Nonachlor—Serum concentration (ng/g lipid) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-25s | Exposure to Chlordane/Heptachlor epoxide—Serum concentration (ng/g lipid) | National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS. |
| 8-26 | Information systems used for public health (no. States) | National Environmental Public Health Tracking Network (EPHT), CDC, NCEH. |
| 8-27a | Monitoring environmentally related diseases (no. States and D.C.)—Lead poisoning | State Reportable Conditions Assessment (SRCA), Council of State and Territorial Epidemiologists (CSTE). |
| 8-27b | Monitoring environmentally related diseases (no. States and D.C.)—Pesticide poisoning | State Reportable Conditions Assessment (SRCA), Council of State and Territorial Epidemiologists (CSTE). |
| 8-27c | Monitoring environmentally related diseases (no. States and D.C.)—Mercury poisoning | State Reportable Conditions Assessment (SRCA), Council of State and Territorial Epidemiologists (CSTE). |
| 8-27d | Monitoring environmentally related diseases (no. States and D.C.)—Arsenic poisoning | State Reportable Conditions Assessment (SRCA), Council of State and Territorial Epidemiologists (CSTE). |
| 8-27e | Monitoring environmentally related diseases (no. States and D.C.)—Cadmium poisoning | State Reportable Conditions Assessment (SRCA), Council of State and Territorial Epidemiologists (CSTE). |
| 8-27f | Monitoring environmentally related diseases (no. States and D.C.)—Methemoglobinemia | Periodic surveys, Public Health Foundation (PHF) and Council of State and Territorial Epidemiologist (CSTE). |
| 8-27g | Monitoring environmentally related diseases (no. States and D.C.)—Acute chemical poisoning by nonmedicinal chemicals not identified above | State Reportable Conditions Assessment (SRCA), Council of State and Territorial Epidemiologists (CSTE). |
| 8-27h | Monitoring environmentally related diseases (no. States and D.C.)—Carbon monoxide poisoning | State Reportable Conditions Assessment (SRCA), Council of State and Territorial Epidemiologists (CSTE). |
| 8-27i | Monitoring environmentally related diseases (no. States and D.C.)—Asthma | State Reportable Conditions Assessment (SRCA), Council of State and Territorial Epidemiologists (CSTE). |
| 8-27j | Monitoring environmentally related diseases (no. States and D.C.)—Hyperthermia | Periodic surveys, Public Health Foundation (PHF) and Council of State and Territorial Epidemiologists (CSTE). |
| 8-27k | Monitoring environmentally related diseases (no. States and D.C.)—Hypothermia | Periodic surveys, Public Health Foundation (PHF) and Council of State and Territorial Epidemiologists (CSTE). |
| 8-27l | Monitoring environmentally related diseases (no. States and D.C.)—Skin cancer | Deleted at the Midcourse Review. |
| 8-27m | Monitoring environmentally related diseases (no. States and D.C.)—Malignant melanoma | Deleted at the Midcourse Review. |
| 8-27n | Monitoring environmentally related diseases (no. States and D.C.)—Other skin cancer | Deleted at the Midcourse Review. |
| 8-27o | Monitoring environmentally related diseases (no. States and D.C.)—Birth defects | State Reportable Conditions Assessment (SRCA), Council of State and Territorial Epidemiologists (CSTE). |
| 8-28 | Local agencies using surveillance data for vector control | Deleted at the Midcourse Review. |

Comprehensive Summary of Objectives: Environmental Health (continued)

| Objective | Description | Data Source or Objective Status |
|-----------|---|--|
| 8-29 | Global burden of disease (no. deaths in thousands) | Global Burden of Disease Project, World Health Organization (WHO). |
| 8-30a | Proportion of population in U.S.–Mexico border region with wastewater sewer service—Ciudad Acuña | Environmental Protection Agency (EPA); Mexico's Comisión Nacional del Agua; State and Local Health Departments; American Water Works Association; Rural Water Association; U.S.–Mexico Border Health Commission. |
| 8-30b | Proportion of population in U.S.–Mexico border region with wastewater sewer service—Matamoros | Environmental Protection Agency (EPA); Mexico's Comisión Nacional del Agua; State and Local Health Departments; American Water Works Association; Rural Water Association; U.S.–Mexico Border Health Commission. |
| 8-30c | Proportion of population in U.S.–Mexico border region with wastewater sewer service—Mexicali | Environmental Protection Agency (EPA); Mexico's Comisión Nacional del Agua; State and Local Health Departments; American Water Works Association; Rural Water Association; U.S.–Mexico Border Health Commission. |
| 8-30d | Proportion of population in U.S.–Mexico border region with wastewater sewer service—Nogales, Sonora | Environmental Protection Agency (EPA); Mexico's Comisión Nacional del Agua; State and Local Health Departments; American Water Works Association; Rural Water Association; U.S.–Mexico Border Health Commission. |
| 8-30e | Proportion of population in U.S.–Mexico border region with wastewater sewer service—Piedras Negras | Environmental Protection Agency (EPA); Mexico's Comisión Nacional del Agua; State and Local Health Departments; American Water Works Association; Rural Water Association; U.S.–Mexico Border Health Commission. |
| 8-30f | Proportion of population in U.S.–Mexico border region with wastewater sewer service—Reynosa | Environmental Protection Agency (EPA); Mexico's Comisión Nacional del Agua; State and Local Health Departments; American Water Works Association; Rural Water Association; U.S.–Mexico Border Health Commission. |
| 8-30g | Proportion of population in U.S.–Mexico border region with wastewater treatment service—Ciudad Acuña | Environmental Protection Agency (EPA); Mexico's Comisión Nacional del Agua; State and Local Health Departments; American Water Works Association; Rural Water Association; U.S.–Mexico Border Health Commission. |
| 8-30h | Proportion of population in U.S.–Mexico border region with wastewater treatment service—Matamoros | Environmental Protection Agency (EPA); Mexico's Comisión Nacional del Agua; State and Local Health Departments; American Water Works Association; Rural Water Association; U.S.–Mexico Border Health Commission. |
| 8-30i | Proportion of population in U.S.–Mexico border region with wastewater treatment service—Mexicali | Environmental Protection Agency (EPA); Mexico's Comisión Nacional del Agua; State and Local Health Departments; American Water Works Association; Rural Water Association; U.S.–Mexico Border Health Commission. |
| 8-30j | Proportion of population in U.S.–Mexico border region with wastewater treatment service—Nogales, Sonora | Environmental Protection Agency (EPA); Mexico's Comisión Nacional del Agua; State and Local Health Departments; American Water Works Association; Rural Water Association; U.S.–Mexico Border Health Commission. |
| 8-30k | Proportion of population in U.S.–Mexico border region with wastewater treatment service—Piedras Negras | Environmental Protection Agency (EPA); Mexico's Comisión Nacional del Agua; State and Local Health Departments; American Water Works Association; Rural Water Association; U.S.–Mexico Border Health Commission. |
| 8-30l | Proportion of population in U.S.–Mexico border region with wastewater treatment service—Reynosa | Environmental Protection Agency (EPA); Mexico's Comisión Nacional del Agua; State and Local Health Departments; American Water Works Association; Rural Water Association; U.S.–Mexico Border Health Commission. |

Figure 8-1. Progress Toward Target Attainment for Focus Area 8: Environmental Health

| LEGEND | |  Moved away from target ¹ |  Moved toward target |  Met or exceeded target | | | | | |
|--|--|---|---|--|-------------------------|--|-----------------------------|--|--|
| Objective | Percent of targeted change achieved ² | 2010 Target | Baseline (Year) | Final (Year) | Baseline vs. Final | | | | |
| | | | | | Difference ³ | Statistically Significant ⁴ | Percent Change ⁵ | | |
| 8-1. Percent of persons exposed to harmful air pollutants | | | | | | | | | |
| a. Ozone |  16.3% | 0% | 43% (1997) | 36% (2010) | -7 | Not tested | -16.3% | | |
| b. Particulate matter (≤10 µm in diameter) |  25.0% | 0% | 12% (1997) | 9% (2010) | -3 | Not tested | -25.0% | | |
| c. Carbon monoxide |  100.0% | 0% | 20% (1997) | 0% (2010) | -20 | Not tested | -100.0% | | |
| d. Nitrogen dioxide |  100.0% | 0% | 5% (1997) | 0% (2010) | -5 | Not tested | -100.0% | | |
| e. Sulfur dioxide |  100.0% | 0% | 2% (1997) | 0% (2010) | -2 | Not tested | -100.0% | | |
| f. Lead |  100.0% | 0% | <1% (1997) | 0% (2010) | >-1 | Not tested | -100.0% | | |
| 8-1g. Number of persons (thousands) exposed to any harmful air pollutants |  21.2% | 0 | 137,019 (1997) | 107,991 (2010) | -29,028 | Not tested | -21.2% | | |
| 8-2. Alternative modes of transportation | | | | | | | | | |
| a. Trips made by bicycling |  11.1% | 1.8% | 0.9% (1995) | 1.0% (2009) | 0.1 | Not tested | 11.1% | | |
| b. Trips made by walking |  92.6% | 10.8% | 5.4% (1995) | 10.4% (2009) | 5.0 | Not tested | 92.6% | | |
| c. Trips made by transit |  116.7% | 3.6% | 1.8% (1995) | 3.9% (2009) | 2.1 | Not tested | 116.7% | | |
| d. Persons who telecommute |  40.0% | 4.0% | 2.0% (2001) | 2.8% (2009) | 0.8 | Not tested | 40.0% | | |
| 8-3. Cleaner alternative fuels |  45.8% | 8.0% | 0.8% (1997) | 4.1% (2008) | 3.3 | Not tested | 412.5% | | |
| 8-4. Airborne toxins (million tons) |  57.4% | 2.0 | 8.1 (1993) | 4.6 (2002) | -3.5 | Not tested | -43.2% | | |
| 8-5. Safe drinking water |  72.7% | 95% | 84% (1995) | 92% (2008) | 8 | Not tested | 9.5% | | |
| 8-6. Waterborne disease outbreaks (average no. per year) |  125.0% | 2 | 6 (1987–96) | 1 (2006) | -5 | Not tested | -83.3% | | |
| 8-7. Water conservation (gallons of domestic water usage per capita per day) |  19.8% | 91 | 101 (1995) | 99 (2005) | -2 | Not tested | -2.0% | | |
| 8-9. Beach open and safe for swimming (percent of days during beach season) |  25.0% | 98% | 94% (2002) | 95% (2008) | 1 | Not tested | 1.1% | | |
| 8-10. Fish consumption advisories | | | | | | | | | |
| a. Rivers |  | 13.8% | 15.3% (2002) | 24.0% (2004) | 8.7 | Not tested | 56.9% | | |
| b. Lakes |  | 29.6% | 32.9% (2002) | 35.0% (2004) | 2.1 | Not tested | 6.4% | | |

Figure 8-1. Progress Toward Target Attainment for Focus Area 8: Environmental Health (continued)

| Objective | Percent of targeted change achieved ² | | | | | 2010 Target | Baseline (Year) | Final (Year) | Baseline vs. Final | | |
|--|--|----|----|----|-----|-------------------|-------------------------------|-----------------------------|-------------------------|--|-----------------------------|
| | 0 | 25 | 50 | 75 | 100 | | | | Difference ³ | Statistically Significant ⁴ | Percent Change ⁵ |
| 8-12a. Risks posed by hazardous sites—National Priority List sites | | | | | | 1,176 | 1,290 (1998) | 1,138 (2008) | -152 | Not tested | -11.8% |
| 8-13. Pesticide exposures resulting in visits to a health care facility (no. of visits per year) | | | | | | 11,398 | 22,933 (1997) | 14,963 (2008) | -7,970 | Not tested | -34.8% |
| 8-15. Recycled municipal solid waste (percent of total municipal solid waste) | | | | | | 38% | 27% (1996) | 33% (2008) | 6 | Not tested | 22.2% |
| 8-19. Radon-resistant new home construction (no. of homes) | | | | | | 978,750 | 652,500 (1997) | 1,027,500 (2007) | 375,000 | Not tested | 57.5% |
| 8-22. Proportion of persons in pre-1950s homes tested for lead-based paint (age adjusted, 18+ years) | | | | | | 50% | 16% (1998) | 21% (2002) | 5 | Yes | 31.3% |
| 8-23. Substandard housing (percent of homes with moderate or severe physical problems) | | | | | | 3.1% | 6.5% (1995) | 5.2% (2007) | -1.3 | Not tested | -20.0% |
| 8-24. Pesticide exposure—Urine concentrations (µg/g creatinine, 6–59 years) | | | | | | | | | | | |
| b. Parathion (methyl parathion and parathions) (µg/g creatinine) | | | | | | 2.7 | 3.8 (1988–94) | 2.9 (2001–02) | -0.9 | Not tested | -23.7% |
| c. 3, 5, 6-trichloro-2-pyridinol (chlorpyrifos) (µg/g creatinine) | | | | | | 5.8 | 8.3 (1988–94) | 9.2 (2001–02) | 0.9 | Not tested | 10.8% |
| d. Isopropoxyphenol (propoxur) (µg/g creatinine) | | | | | | 1.1 | 1.6 (1988–94) | BLOD ⁶ (2001–02) | * | Not tested | * |
| 8-25. Exposure to environmental chemicals | | | | | | | | | | | |
| b. Cadmium—Blood concentration (µg/L blood) | | | | | | 1.0 | 1.4 (1999–2000) | 1.6 (2003–04) | 0.2 | Not tested | 14.3% |
| c. Lead—Blood concentration (µg/L blood) | | | | | | 3.5 | 5.0 (1988–94) | 4.2 (2003–04) | -0.8 | Not tested | -16.0% |
| e. Mercury in children aged 1–5 years—Blood concentration (µg/L blood) | | | | | | 1.6 | 2.3 (1999–2000) | 1.8 (2003–04) | -0.5 | Not tested | -21.7% |
| g. o-Phenylphenol—Urine concentration (µg/g creatinine) | | | | | | 2.1 | 3.0 (1999–2000) | 1.8 (2001–02) | -1.2 | Not tested | -40.0% |
| i. Diazinon—Urine concentration (µg/g creatinine) | | | | | | BLOD ⁶ | BLOD ⁶ (1999–2000) | BLOD ⁶ (2001–02) | BLOD ⁶ | Not tested | * |
| m. Chlordane/Oxychlordane—Serum concentration (ng/g lipid) | | | | | | 31.4 | 44.8 (1999–2000) | 37.7 (2003–04) | -7.1 | Not tested | -15.8% |
| n. Dieldrin—Serum concentration (ng/g lipid) | | | | | | 14.2 | 20.3 (2001–02) | 19.0 (2003–04) | -1.3 | Not tested | -6.4% |
| o. DDT/DDE—Serum concentration (ng/g lipid) | | | | | | 1,281 | 1,830 (1999–2000) | 1,860 (2003–04) | 30 | Not tested | 1.6% |
| p. Lindane/beta-HCH—Serum concentration (ng/g lipid) | | | | | | 48.2 | 68.9 (1999–2000) | 56.5 (2003–04) | -12.4 | Not tested | -18.0% |
| q. Mercury in females aged 16–49 years—Blood concentration (µg/L) | | | | | | 5.0 | 7.1 (1999–2000) | 4.6 (2001–02) | -2.5 | Not tested | -35.2% |
| r. Chlordane/trans-Nonachlor—Serum concentration (ng/g lipid) | | | | | | 55.6 | 79.4 (1999–2000) | 68.3 (2003–04) | -11.1 | Not tested | -14.0% |
| s. Chlordane/Heptachlor epoxide—Serum concentration (ng/g lipid) | | | | | | 16.8 | 24.0 (1999–2000) | 18.9 (2003–04) | -5.1 | Not tested | -21.3% |

Figure 8-1. Progress Toward Target Attainment for Focus Area 8: Environmental Health (continued)

| Objective | Percent of targeted change achieved ² | 2010 Target | Baseline (Year) | Final (Year) | Baseline vs. Final | | |
|---|--|-------------|-----------------|----------------|-------------------------|--|-----------------------------|
| | | | | | Difference ³ | Statistically Significant ⁴ | Percent Change ⁵ |
| 8-26. Information systems used for public health (no. States) | 51.7% | 30 | 1 (2008) | 16 (2010) | 15 | Not tested | 1,500.0% |
| 8-27. Monitoring environmentally related diseases (no. States and D.C.) | | | | | | | |
| a. Lead poisoning | 13.8% | 51 | 22 (2007) | 26 (2010) | 4 | Not tested | 18.2% |
| b. Pesticide poisoning | 21.4% | 25 | 11 (2007) | 14 (2009) | 3 | Not tested | 27.3% |
| c. Mercury poisoning | 33.3% | 20 | 14 (2007) | 16 (2010) | 2 | Not tested | 14.3% |
| d. Arsenic poisoning | 100.0% | 15 | 12 (2007) | 15 (2010) | 3 | Not tested | 25.0% |
| e. Cadmium poisoning | 125.0% | 15 | 11 (2007) | 16 (2010) | 5 | Not tested | 45.5% |
| g. Acute chemical poisoning by nonmedicinal chemicals not identified above | 0.0% | 15 | 9 (2008) | 9 (2009) | 0 | Not tested | 0.0% |
| h. Carbon monoxide poisoning | | 51 | 10 (2007) | 9 (2009) | -1 | Not tested | -10.0% |
| i. Asthma | 4.3% | 25 | 2 (2007) | 3 (2009) | 1 | Not tested | 50.0% |
| o. Birth defects | 4.4% | 51 | 6 (2007) | 8 (2009) | 2 | Not tested | 33.3% |
| 8-29. Global burden of disease (no. deaths in thousands) | 87.8% | 2,135.0 | 2,668.2 (1990) | 2,200.0 (2004) | -468.2 | Not tested | -17.5% |
| 8-30. Proportion of population in U.S.–Mexico border region with wastewater sewer service | | | | | | | |
| a. Ciudad Acuña | 360.0% | 49% | 39% (1997) | 75% (2002) | 36 | Not tested | 92.3% |
| b. Matamoros | 0.0% | 57% | 47% (1997) | 47% (2002) | 0 | Not tested | 0.0% |
| e. Piedras Negras | 200.0% | 90% | 80% (1997) | 100% (2002) | 20 | Not tested | 25.0% |
| f. Reynosa | 180.0% | 67% | 57% (1997) | 75% (2002) | 18 | Not tested | 31.6% |
| g. Ciudad Acuña | 890.0% | 10% | 0% (1997) | 89% (2009) | 89 | Not tested | * |
| h. Matamoros | 870.0% | 10% | 0% (1997) | 87% (2010) | 87 | Not tested | * |
| i. Mexicali | 230.0% | 82% | 72% (1997) | 95% (2010) | 23 | Not tested | 31.9% |
| j. Nogales, Sonora | | 100% | 100% (1997) | 89% (2010) | -11 | Not tested | -11.0% |
| k. Piedras Negras | 980.0% | 10% | 0% (1997) | 98% (2010) | 98 | Not tested | * |
| l. Reynosa | | 100% | 100% (1997) | 89% (2010) | -11 | Not tested | -11.0% |

Figure 8-1. Progress Toward Target Attainment for Focus Area 8: Environmental Health (continued)

NOTES

See the [Reader's Guide](#) for more information on how to read this figure. See DATA2010 at <http://wonder.cdc.gov/data2010> for all HealthyPeople 2010 tracking data. Tracking data are not available for objectives 8-8a, 8-8b, 8-12b through d, 8-14a, 8-14b, 8-16a through c, 8-17, 8-18, 8-20, 8-21, 8-25a, 8-25d, 8-25f, 8-25h, 8-25j through l, 8-27f, 8-27j, 8-27k, 8-30c, and 8-30d. Final tracking data for objective 8-11 are not statistically reliable. Objectives 8-24a, 8-27l through n, and 8-28 were deleted at the Midcourse Review.

FOOTNOTES

¹ Movement away from target is not quantified using the percent of targeted change achieved. See [Technical Appendix](#) for more information.

² Percent of targeted change achieved = $\frac{\text{Final value} - \text{Baseline value}}{\text{Healthy People 2010 target} - \text{Baseline value}} \times 100$.

³ Difference = Final value – Baseline value. Differences between percents (%) are measured in percentage points.

⁴ When estimates of variability are available, the statistical significance of the difference between the final value and the baseline value is assessed at the 0.05 level. See [Technical Appendix](#) for more information.

⁵ Percent change = $\frac{\text{Final value} - \text{Baseline value}}{\text{Baseline value}} \times 100$.

⁶ Below level of detection (BLOD).

* Difference and/or percent change cannot be calculated. See [Technical Appendix](#) for more information.

† Percent of targeted change cannot be calculated. See [Technical Appendix](#) for more information.

DATA SOURCES

- 8-1a–g. Air Quality System (AQS), Environmental Protection Agency (EPA).
- 8-2a–d. National Household Travel Survey (NHTS), formerly Nationwide Personal Transportation Survey (NPTS), Department of Transportation (DOT).
- 8-3. Alternatives to Traditional Transportation Fuels, Department of Energy (DOE).
- 8-4. National Emissions Inventory (NEI), Environmental Protection Agency (EPA).
- 8-5. Potable Water Surveillance System (PWSS) and Safe Drinking Water Information System (SDWIS), Environmental Protection Agency (EPA).
- 8-6. State Reporting Systems, CDC, NCID.
- 8-7. Estimated Use of Water in the United States, Department of Interior (DOI).
- 8-9. Beaches Environmental Assessment, Closure and Health Program (BEACH), Environmental Protection Agency (EPA).
- 8-10a–b. National Listing of Fish Advisories, Environmental Protection Agency (EPA).
- 8-12a. Comprehensive Environmental Response and Cleanup Liability Information System (CERCLIS), Environmental Protection Agency (EPA).
- 8-13. Toxic Exposure Surveillance System (TESS), American Association of Poison Control Centers.
- 8-15. Municipal Solid Waste in the United States, Environmental Protection Agency (EPA).
- 8-19. National Association of Home Builders Research Center Survey, National Association of Home Builders.
- 8-22. National Health Interview Survey (NHIS), CDC, NCHS.
- 8-23. American Housing Survey (AHS), Department of Commerce, Census Bureau.
- 8-24b–d. National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
- 8-25b–c. National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
- 8-25e. National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
- 8-25g. National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
- 8-25i. National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
- 8-25m–s. National Report on Human Exposure to Environmental Chemicals, CDC, NCEH; National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
- 8-26. National Environmental Public Health Tracking Network (EPHT), CDC, NCEH.
- 8-27a–e. State Reportable Conditions Assessment (SRCA), Council of State and Territorial Epidemiologists (CSTE).
- 8-27g–i. State Reportable Conditions Assessment (SRCA), Council of State and Territorial Epidemiologists (CSTE).
- 8-27o. State Reportable Conditions Assessment (SRCA), Council of State and Territorial Epidemiologists (CSTE).
- 8-29. Global Burden of Disease Project, World Health Organization (WHO).
- 8-30a–b. Environmental Protection Agency (EPA), Mexico's Comisión Nacional del Agua; State and Local Health Departments; American Water Works Association; Rural Water Association; U.S.–Mexico Border Health Commission.
- 8-30e–l. Environmental Protection Agency (EPA), Mexico's Comisión Nacional del Agua; State and Local Health Departments; American Water Works Association; Rural Water Association; U.S.–Mexico Border Health Commission.

Figure 8-2. Health 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.

| Population-based objective | Race and Ethnicity | | | | | | | Summary index | Sex | | Income | | | | Location | |
|---|----------------------------------|----------------|---|-------------------|--------------------|---------------------|---------------------|---------------|--------|------|--------|----------------|--------------------|---------------|-----------------------|--------------------------|
| | American Indian or Alaska Native | Asian | Native Hawaiian or Other Pacific Islander | Two or more races | Hispanic or Latino | Black, not Hispanic | White, not Hispanic | | Female | Male | Poor | Near poor | Middle/high income | Summary index | Urban or metropolitan | Rural or nonmetropolitan |
| 8-1a. Percent of persons exposed to harmful air pollutants—Ozone (1997, 2010) ^{1†} | B | | | | ↑ | | | | B | B | | | | | ↑↑↑ | B |
| b. Percent of persons exposed to harmful air pollutants—Particulate matter (≤10 μm in diameter) (1997, 2010) ^{1†} | ↑ | ↑ | ↑ | ↑ | ↑ | B | | ↑ | B | | | | | | ↓↓↓ | B |
| c. Percent of persons exposed to harmful air pollutants—Carbon monoxide (1997, 2010) ^{1†} | ↑↑ | ↑↑ | ↑↑ | ↑↑ | ↑↑ | B ⁱ | B | ↑↑ | B | B | | | | | ↑↑↑ | B |
| d. Percent of persons exposed to harmful air pollutants—Nitrogen dioxide (1997, 2010) ^{1†} | B ⁱ | B ⁱ | B ⁱ | B ⁱ | B ⁱ | B | B | | B | B | | | | | B ⁱ | B |
| e. Percent of persons exposed to harmful air pollutants—Sulfur dioxide (1997, 2010) ^{1†} | B | B | | B | B | B ⁱ | B ⁱ | ↓ | B | B | | | | | | |
| f. Percent of persons exposed to harmful air pollutants—Lead (1997, 2010) ^{1†} | B | B | B | B | B | B | B | | B | B | | | | | B ⁱ | B |
| 8-1g. Number of persons (thousands) exposed to any harmful air pollutants (1997, 2010) ^{1†} | ↓ | ↑↑ | B | | ↑↑ | ↑↑ | ↓↓↓ | ↓↓ | | B | | | | | ↑↑↑ | B |
| 8-11. Elevated blood lead levels in children 1–5 years (≥10 μg/dL) (1991–94, 2005–08) [*] | | | | | | ii | ii | | | | | | | | | |
| 8-18. Proportion of persons living in homes tested for radon (age adjusted) (1998) [*] | | B | | | | | | | B | | | B | | | | |
| 8-22. Proportion of persons in pre-1950s homes tested for lead-based paint (age adjusted, 18+ years) (1998, 2002) ^{2*} | | | | B | | B | | | B | | B | B ⁱ | | | | |

NOTES

See DATA2010 at <http://wonder.cdc.gov/data2010> for all Healthy People 2010 tracking data. Disparity data are either unavailable or not applicable for objectives 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 through c, 8-17, 8-19 through 8-21, 8-23, 8-24b through d, 8-25a through s, 8-26, 8-27a through k, 8-27o, 8-29, and 8-30a through l. Objectives 8-24a, 8-27l through n, and 8-28 were deleted at Midcourse Review.

Years in parentheses represent the baseline and most recent data years (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 (e.g., 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.

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

| LEGEND | | | | | | | | | |
|---|---|---|---|--|---|--|---|---|--------------------|
| The “best” group rate at the most recent data point. |  | The group with the best rate for specified characteristic. |  | Most favorable group rate for specified characteristic, but reliability criterion not met. |  | Reliability criterion for best group rate not met, or data available for only one group. | | | |
| Percent difference from the best group rate | | | | | | | | | |
| Disparity from the best group rate at the most recent data point. |  | Less than 10%, or difference not statistically significant (when estimates of variability are available). |  | 10%–49% |  | 50%–99% |  | 100% or more | |
| Changes in disparity over time are shown when: (a) disparities data are available at both baseline and most recent time points; (b) data are not for the group(s) indicated by “B” or “b” at either time point; and (c) 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. See Technical Appendix . | | | | Increase in disparity (percentage points) | | | | | |
| | | | |  | 10–49 points |  | 50–99 points |  | 100 points or more |
| | | | | Decrease in disparity (percentage points) | | | | | |
| | | | |  | 10–49 points |  | 50–99 points |  | 100 points or more |
| Availability of Data | |  | Data not available. |  | Characteristic not selected for this objective. | | | | |

FOOTNOTES

* Measures of variability were available. Thus, the variability of best group rates was assessed, and statistical significance was tested. Disparities of 10% or more are displayed when the differences from the best group rate are statistically significant at the 0.05 level. Changes in disparities over time are indicated by arrows when the changes are greater than or equal to 10 percentage points and 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 statistical significance could not be tested. Nonetheless, disparities and changes in disparities over time are displayed according to their magnitude. See [Technical Appendix](#).

¹ Most recent data by race and ethnicity, sex, and location are for 2004.

² Baseline data by race and ethnicity are for 2002.

¹ The group with the best rate at the most recent data point is different from the group with the best rate at baseline. Both rates met the reliability criterion. See [Technical Appendix](#).

ⁱⁱ Data are for Mexican American.

DATA SOURCES

- 8-1a–g. Air Quality System (AQS), Environmental Protection Agency (EPA).
- 8-11. National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
- 8-18. National Health Interview Survey (NHIS), CDC, NCHS.
- 8-22. National Health Interview Survey (NHIS), CDC, NCHS.

