



# Leading Health Indicators



## Co-Lead Agencies

Agency for Healthcare Research and Quality  
Agency for Toxic Substances and Disease Registry  
Centers for Disease Control and Prevention  
Food and Drug Administration  
Health Resources and Services Administration  
National Institutes of Health  
President's Council on Physical Fitness and Sports  
Substance Abuse and Mental Health Services Administration

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# Introduction



The Healthy People 2010 Leading Health Indicators (LHIs) are a subset of the Healthy People 2010 objectives that reflect the major public health concerns in the U.S. They were chosen on the basis of their ability to motivate action, the availability of data to measure their progress, and their relevance as broad public health issues. These indicators reflect individual behaviors, physical and social environmental factors, and important health system issues that greatly affect the health of individuals and communities.

There are 10 Healthy People 2010 LHI topics, each monitored through one or more LHIs. At the launch of Healthy People 2010, there were 22 LHIs. Six supplemental LHIs were added since, for a total of 28 LHIs.

The LHIs for Healthy People 2010 were:

- › **Physical Activity.** Two LHIs tracked moderate or vigorous physical activity among adults and vigorous physical activity among adolescents (objectives 22-2 and 22-7, respectively).
- › **Overweight and Obesity.** Two LHIs tracked obesity in adults and in children and adolescents (objectives 19-2 and 19-3c, respectively).
- › **Tobacco use.** Two LHIs tracked cigarette smoking among adults and among adolescents (objectives 27-1a and 27-2b, respectively).
- › **Substance Abuse.** Three LHIs tracked adolescents not using illicit drugs (objective 26-10a), adults using illicit drugs (objective 26-10c), and adult binge drinking (objective 26-11c).
- › **Responsible Sexual Behavior.** Five LHIs tracked condom use by sexually-active unmarried persons (objectives 13-6a and b) and adolescent sexual behavior (objectives 25-11a through c). The LHIs tracking condom use among sexually active unmarried males (objective 13-6b), adolescents who had sexual intercourse but not in the past 3 months (objective 25-11b), and adolescents who used condoms at last intercourse (objective 25-11c) were supplemental LHIs.
- › **Mental Health.** Two LHIs tracked suicides (objective 18-1) and treatment of adults with depression (objective 18-9b). (Objective 18-1 was a supplemental LHI.)
- › **Injury and Violence.** Two LHIs tracked deaths from motor vehicle crashes (objective 15-15a) and homicides (objective 15-32).
- › **Environmental Quality.** Three LHIs tracked exposure to ozone (objective 8-1a), children's exposure to tobacco smoke at home (objective 27-9), and nonsmoker exposure to tobacco smoke (objective 27-10). (Objective 27-9 was a supplemental LHI.)
- › **Immunization.** Three LHIs tracked fully-immunized young children (objective 14-24a) and influenza and pneumonia vaccination for older adults (objectives 14-29a and b, respectively).
- › **Access to Health Care.** Four LHIs tracked persons with health insurance (objective 1-1), persons with a source of ongoing care (objective 1-4a), hospitalizations for pediatric asthma (objective 1-9a), and the receipt of prenatal care beginning in the first trimester (objective 16-6a). (Objective 1-9a was a supplemental LHI.)

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 the Healthy People 2010 LHIs can be found in the following publications:

- › *Healthy People 2010: Understanding and Improving Health*, available from [http://www.healthypeople.gov/2010/Document/html/uih/uih\\_bw/uih\\_4.htm](http://www.healthypeople.gov/2010/Document/html/uih/uih_bw/uih_4.htm).
- › *Healthy People 2010 Midcourse Review*, available from <http://www.healthypeople.gov/2010/data/midcourse/html/default.htm#FocusAreas>.
- › Sondik EJ, Huang DT, Klein RJ, Satcher D. Progress Toward the Healthy People 2010 Goals and Objectives. *Annu Rev of Public Health* 31(1):271–81. 2010.

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## Highlights

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- › Substantial progress was achieved for the LHIs during the past decade [1]. Almost two-thirds (63%) of the LHIs with data to measure progress moved toward or achieved their Healthy People 2010 targets (Figure LHI-1). However, health disparities among select populations were observed (Figure LHI-2), some of which are discussed below [2].

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### Physical Activity

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- › There was little or no progress toward targets for the objectives monitoring this LHI topic. Between 1997 and 2008, the proportion of adults engaging in regular moderate or vigorous physical activity (objective 22-2) remained stable at 32%. The proportion of adolescents engaging in regular vigorous physical activity (objective 22-7) increased 4.6% between 1999 and 2009, from 65% to 68%, moving toward the Healthy People 2010 target of 85%; however, this increase was not statistically significant.

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### Overweight and Obesity

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- › Obesity in the U.S. population increased, moving away from Healthy People 2010 targets. Based on directly measured height and weight, from 1988–94 to 2005–08 the proportion of adults aged 20 and over who were obese (objective 19-2) rose 47.8%, from 23% to 34% (age adjusted), moving away from the 2010 target of 15%. During the same period, obesity in children and adolescents aged 6–19 years (objective 19-3c) increased 63.6%, from 11% to 18%, moving away from the 2010 target of 5%.

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### Tobacco Use

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Progress was observed for this LHI topic:

- › The percentage of adults aged 18 and over who were current cigarette smokers (objective 27-1a) decreased 12.5% between 1998 and 2008, from 24% to 21% (age adjusted), moving toward the 2010 target of 12%. However, from 2004 to 2008, the proportion of U.S. adults who were current cigarette smokers did not noticeably change. Moreover, health disparities were observed for a number of populations, for example:
  - Among educational groups, adults aged 25 and over with at least some college education had the lowest (best) current cigarette smoking rate, 15% (age adjusted) in 2008. Adults aged 25 and over with less than a high school education had a rate of 30% (age adjusted) in 2008, twice the best group rate [2].

- › Adolescent use of cigarettes in the past month (objective 27-2b), decreased 45.7%, from 35% in 1999 to 19% in 2009, moving toward the 2010 target of 16%.
  - Among racial and ethnic groups, the non-Hispanic black population had the lowest (best) adolescent cigarette smoking rate, 10% in 2009. The rate for the non-Hispanic white population was 22% in 2009, more than twice the best rate [2].

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### Substance Abuse

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Progress for this LHI topic was mixed:

- › The proportion of adolescents not using alcohol or illicit drugs in the past month (objective 26-10a) increased 5.1% between 2002 and 2008, from 78% to 82%, moving toward the 2010 target of 91%.
- › The proportion of adults using illicit drugs in the past month (objective 26-10c) did not change over the decade. As in 2002, the baseline year for this objective, 7.9% of adults aged 18 and over used illicit drugs in the past month in 2008. Similarly, the proportion of adults who engaged in binge drinking in the past month (26-11c) changed very little, increasing 2.5% over the same tracking period, from 24.3% to 24.9%, and moving away from the 2010 target of 13.4%; however, this difference was not statistically significant.

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### Responsible Sexual Behavior

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Four of the five objectives used to monitor this LHI topic moved toward their targets:

- › Condom use among sexually active unmarried persons aged 18–44 increased, moving toward the 2010 targets of 50% for females (objective 13-6a) and 54% for males (objective 13-6b). The proportion of females (or their partners) who used condoms increased 43.5% between 1995 and 2006–08, from 23% to 33%, whereas the proportion of males (or their partners) who used condoms increased 4.8% between 2002 and 2006–08, from 42% to 44%.
- › The proportion of adolescents who had never had sexual intercourse (objective 25-11a) increased 8.0% between 1999 and 2009, from 50% to 54%, moving toward the 2010 target of 56%.
- › Among adolescents who had had sexual intercourse, the proportion who were not sexually active in the last 3 months (objective 25-11b) declined 3.7% between 1999 and 2009, from 27% to 26%, moving away from the target of 30%.

- › The proportion of adolescents who used condoms at last intercourse (objective 25-11c) increased 5.2% between 1999 and 2009, from 58% to 61%, moving toward the 2010 target of 65%.

## Mental Health

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Data to measure progress was available for one of the two objectives used to monitor this LHI topic, objective 18-1, suicide, which increased over the decade, moving away from the 2010 target. Only baseline data were available for objective 18-9b, treatment for adults with depression.

- › The suicide rate (objective 18-1) increased 7.6% between 1999 and 2007, from 10.5 to 11.3 per 100,000 population (age adjusted), moving away from the 2010 target of 4.8 per 100,000. Health disparities were observed for a number of population groups, for example:
  - Among racial and ethnic groups, the non-Hispanic black population had the lowest (best) suicide rate, 5.1 per 100,000 population (age adjusted) in 2007. The rates for the American Indian or Alaska Native and the non-Hispanic white populations were 11.5 and 13.5 per 100,000 (age adjusted), respectively. The rate for the American Indian or Alaska Native population was almost two and a half times the best rate (that for the non-Hispanic black population), whereas the rate for the non-Hispanic white population was more than two and a half times the best rate [2].
  - The non-Hispanic white population had suicide rates of 12.0 per 100,000 population (age adjusted) in 1999 and 13.5 in 2007, whereas the non-Hispanic black population had rates of 5.7 in 1999 and 5.1 in 2007. The disparity between the non-Hispanic white and non-Hispanic black populations increased 54 percentage points between 1999 and 2007 [3].
  - Females had a lower (better) suicide rate than males, 4.7 per 100,000 population (age adjusted) in 2007. The rate for males was 18.4 per 100,000 (age adjusted), almost four times the rate for females [2].
  - Males had suicide rates of 17.8 per 100,000 population (age adjusted) in 1999 and 18.4 in 2007, whereas females had rates of 4.0 in 1999 and 4.7 in 2007. The disparity between males and females declined 53 percentage points between 1999 and 2007 [3].
  - Among education groups, persons with at least some college education had the lowest (best) suicide rate, 9.9 per 100,000 population (age adjusted) in 2002, whereas high school graduates had a rate of 18.4 per 100,000 (age adjusted), almost twice the best group rate [2].

## Injury and Violence

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Progress for this LHI topic was mixed:

- › Motor vehicle crash deaths per 100,000 population (objective 15-15a) declined 6.1% between 1999 and 2007, from 14.7 to 13.8 (age adjusted), moving toward the 2010 target of 8.0.
  - Among racial and ethnic groups, the combined Asian or Pacific Islander population had the lowest (best) rate of motor vehicle crash deaths, 7.0 per 100,000 population (age adjusted) in 2007. The American Indian or Alaska Native, non-Hispanic black, and non-Hispanic white populations had rates of 22.5, 14.1, and 14.2 per 100,000 (age adjusted), respectively. The rate for the American Indian or Alaska Native population was more than three times the best rate (that for the Asian or Pacific Islander population). The rates for the non-Hispanic black and non-Hispanic white populations were about twice the best rate [2].
  - Females had a lower (better) motor vehicle crash death rate than males, 7.9 per 100,000 population (age adjusted) in 2007. The rate for males, 19.9 per 100,000 (age adjusted), was approximately two and a half times that for females [2].
  - Among education groups, persons aged 25–64 with at least some college education had the lowest (best) rate of motor vehicle crash deaths, 8.4 per 100,000 population (age adjusted) in 2002. High school graduates and persons with less than a high school education had rates of 22.3 and 26.0 per 100,000 (age adjusted), respectively. The rate for high school graduates was more than two and a half times the best group rate, whereas the rate for persons with less than a high school education was more than three times the best group rate [2].
- › The homicide rate (objective 15-32) did not change significantly over the decade. In 1999, the baseline year for this objective, the homicide rate was 6.0 per 100,000 population (age adjusted), compared with a rate of 6.1 in 2007 [1].
  - Among racial and ethnic groups, the combined Asian or Pacific Islander population had the lowest (best) rate of deaths from homicide, 2.3 per 100,000 population (age adjusted) in 2007. The rates for the American Indian or Alaska Native, Hispanic or Latino, and non-Hispanic black populations were 6.5, 6.9, and 21.8 per 100,000 (age adjusted), respectively. The rate for the American Indian or Alaska Native population was almost three times the best rate (that for the Asian or Pacific Islander population). The rate for the Hispanic or Latino population was three times the best rate, and the rate for the

non-Hispanic black population was about nine and a half times the best rate [2].

- The non-Hispanic white population had the lowest (best) rate of deaths from homicide at baseline, 2.9 deaths per 100,000 (age adjusted) in 1999, whereas the combined Asian or Pacific Islander population had the best rate at the most recent data point, 2.3 per 100,000 (age adjusted) in 2007. The non-Hispanic black population had rates of 20.7 and 21.8 per 100,000 (age adjusted) in 1999 and 2007, respectively. Between 1999 and 2007, the disparity between the non-Hispanic black population and the group with the best rate increased 234 percentage points [3].
- Females had a lower (better) homicide rate than males, 2.5 per 100,000 population (age adjusted) in 2007. The rate for males was 9.6 per 100,000 (age adjusted), nearly four times the rate for females [2].
- Among education groups, persons aged 25–64 with at least some college education had the lowest (best) rate of deaths from homicide, 2.6 per 100,000 population (age adjusted) in 2002. The rates for high school graduates and persons with less than a high school education were 10.5 and 16.0 per 100,000 (age adjusted), respectively. High school graduates had a rate that was approximately four times the best group rate (that for persons aged 25–64 with at least some college education); the rate for persons with less than a high school education was more than six times the best group rate [2].

## Environmental Quality

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There was substantial progress for this LHI topic. Two of the three environmental quality objectives exceeded their 2010 targets:

- › The proportion of people living in counties that exceeded National Ambient Air Quality Standards (NAAQS) for ozone (objective 8-1a) declined 25% between 1997 and 2010, from 43% to 36%, moving toward the 2010 target of 0%. However, the final year for which data were available 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 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 rate; the rate for the non-Hispanic black population was almost twice the best rate; the rate for the Hispanic or Latino population was more than two and a half times the best rate; and the rate for the Asian population was nearly three times the best 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 as high as 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 percentage of children aged 6 years and under exposed to tobacco smoke at home (objective 27-9) decreased 70.4% between 1994 and 2005, from 27% to 8%, exceeding the 2010 target of 10%. However, disparities were observed among a number of population groups, for example:
  - Among income groups, children aged six years and under living in middle/high-income households had the lowest (best) rates of exposure to tobacco smoke at home, 5% in 2005, whereas children living in poor or near-poor households had rates of 15% and 12%, respectively. The rate for children living in poor households was three times the best group rate, whereas the rate for children living in near-poor households was almost two and a half times the best group rate [2].
  - Children living in poor households had rates of exposure to tobacco smoke of 38% in 1994 and 15% in 2005; those living in near-poor households had rates of 33% in 1994 and 12% in 2005; whereas those living in middle/high-income households had rates of 19% in 1994 and 5% in 2005. The disparity between children living in poor households and those living in middle/high-income households increased 100 percentage points between 1994 and 2005. During the same period, the disparity between children living in near-poor households and those living in middle/high-income households increased 66 percentage points [3].
- › The percentage of nonsmokers aged 4 years and over exposed to environmental tobacco smoke (objective

27-10) declined 51.2% from 1988–94 to 2005–08, from 84% to 41% (age adjusted), exceeding the 2010 target of 56%.

## Immunization

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Progress was observed for the three objectives monitoring this LHI topic:

- › The proportion of young children aged 19–35 months who were fully immunized (objective 14-24a) increased 6.8% between 1998 and 2008, from 73% to 78%, moving toward the 2010 target of 80%.
- › Vaccination of noninstitutionalized high risk persons aged 65 and over for influenza and pneumonia both increased between 1998 and 2008, moving toward the 2010 targets of 90%. The proportion who had received an influenza vaccination in the past 12 months (objective 14-29a) increased 4.7%, from 64% to 67%, and the proportion who had ever received a pneumococcal vaccination (objective 14-29b) increased 30.4%, from 46% to 60% over the tracking period.

## Access to Health Care

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Progress for this LHI topic was mixed:

- › Rates of persons with health insurance (objective 1-1) did not change over the decade. As in 1997, the baseline year for this objective, 83% of the U.S. population under age 65 had health insurance coverage in 2008. Disparities were observed for a number of population groups, for example:
  - Among racial and ethnic groups, the non-Hispanic white population had the highest (best) rate of health insurance coverage, 88% in 2008, whereas the American Indian or Alaska Native population and the Hispanic or Latino population had rates of 72% and 67%, respectively. When expressed as persons *without* health insurance, the rate for the American Indian or Alaska Native population was more than twice the best rate (that for the non-Hispanic white population). The rate for the Hispanic or Latino population was nearly three times the best rate [2].
  - The American Indian or Alaska Native population had health insurance coverage rates of 62% in 1999 and 72% in 2008, whereas the non-Hispanic white population had a rate of 88% in both 1999 in 2008. When rates are expressed in terms of persons *without* health insurance, the disparity between the American Indian or Alaska Native population and the non-Hispanic white population decreased 83 percentage points between 1999 and 2008 [2,3].

- Among income groups, the middle/high-income population had the highest (best) rate of health insurance coverage, 89% in 2008, whereas the poor and near-poor populations had rates of 71% and 69%, respectively. When expressed as persons *without* health insurance, the rate for the poor population was more than two and a half times the best rate (that for the middle/high-income population). The rate for the near-poor population was almost three times the best rate [2].
- The poor population had health insurance coverage rates of 66% in 1997 and 71% in 2008, whereas the middle/high-income population had rates of 90% in 1997 and 89% in 2008. When rates are expressed in terms of persons *without* health insurance, the disparity between the poor population and the middle/high-income population decreased 76 percentage points between 1997 and 2008 [2,3].
- › The proportion of persons with a source of ongoing care (objective 1-4a) declined 1.1% between 1998 and 2008, from 87% to 86%, moving away from the 2010 target of 96%.
  - Among racial and ethnic groups, the non-Hispanic white population had the highest (best) rate, 89% in 2008, whereas the Hispanic or Latino population had a rate of 77%. When expressed as persons *without* a specific source of ongoing care, the rate for the Hispanic or Latino population was more than twice the best rate [2].
  - Among income groups, the middle/high-income population had the highest rate, 90% in 2008, whereas the poor and near-poor populations had rates of 78% and 80%, respectively. When expressed as persons *without* a specific source of ongoing care, the rates for the poor and near-poor populations were about twice the best rate [2].
- › Hospitalizations for pediatric asthma (objective 1-9a) declined 35.2% between 1996 and 2008, from 23.0 to 14.9 admissions per 100,000 population aged under 18 years, exceeding the 2010 target of 17.3 admissions per 100,000 population.
- › The proportion of pregnant women who began prenatal care in the first trimester (objective 16-6a) increased 1.2% between 1998 and 2002, from 83% to 84%, moving toward the 2010 target of 90%.
  - Non-Hispanic white women had the highest (best) rate of prenatal care among racial and ethnic populations, 89% in 2002, whereas the American Indian or Alaska Native, Hispanic or Latino, and non-Hispanic black women had rates of 70%, 77%, and 75%, respectively. When expressed as women *not receiving* prenatal care, the rates for American Indian or Alaska Native,

Hispanic or Latino, and non-Hispanic black women were more than twice the best rate (that for non-Hispanic white women) [2].

- Women aged 20 and over with at least some college education had the best rate of prenatal care among education groups, 92% in 2002, whereas high school graduates and women with less than a high school education had rates of 83% and 72%, respectively, among women aged 20 and over. When expressed as women aged 20 and over *not receiving* prenatal care, the rate for high school graduates was more than twice the best rate; and the rate for women with less than a high school education was three and a half times the best rate [2].

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## Summary of Progress

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- › Figure LHI-1 presents a quantitative assessment of progress [1] in achieving the Healthy People 2010 LHIs. Data to measure progress toward target attainment were available for 27 objectives. Of these:
  - Three objectives exceeded their Healthy People 2010 targets (objectives 1-9a, 27-9, and 27-10).
  - Fourteen objectives moved toward their targets. A statistically significant difference between the baseline and the final data points was observed for eight of these objectives (14-24a, 14-29a and b, 15-15a, 16-6a, 26-10a, 27-1a, and 27-2b). No significant difference was observed for one objective (22-7); and data to test the significance of the difference were unavailable for five objectives (8-1a, 13-6a and b, and 25-11a and c).
  - Three objectives showed no change (objectives 1-1, 22-2, and 26-10c).
  - Seven objectives moved away from their targets. A statistically significant difference between the baseline and final data points was observed for four of these objectives (1-4a, 18-1, 19-2, and 19-3c). No significant differences were observed for two objectives (15-32 and 26-11c); and data to test the significance of the difference were unavailable for one objective (25-11b).
- › One objective had no follow-up data available to measure progress (objective 18-9b).
- › Figure LHI-2 displays health disparities [2] for the LHIs from the best group rate for each characteristic at the most recent data point. It also displays changes in disparities from the baseline to the most recent data point [3].
  - Twenty-four objectives had statistically significant racial and ethnic health disparities of 10% or more. In addition, one objective had racial and ethnic health disparities of 10% or more but lacked data to assess statistical significance. Of these 25 objectives, the non-Hispanic white population had the best rate for 12 objectives (1-1, 1-4a, 14-29a and b, 16-6a, 18-9b, 19-2, 22-2, 22-7, 25-11a and c, and 27-9). The non-Hispanic black population had the best rate for 6 objectives (13-6a and b, 18-1, 26-10a, 26-11c, and 27-2b); the Hispanic or Latino population had the best rate for 3 objectives (26-10c, 27-1a, and 27-10); the combined Asian or Pacific Islander population had the best rate for 2 objectives (15-15a and 15-32); the American Indian or Alaska Native population had the best rate for 1 objective (8-1a); and persons of two or more races had the best rate for 1 objective (14-24a).
  - Females had better rates for 12 of the 14 objectives with statistically significant health disparities of 10% or more by sex (objectives 1-1, 1-4a, 1-9a, 14-29b, 15-15a, 15-32, 18-1, 18-9b, 26-10c, 26-11c, 27-1a, and 27-10). Males had better rates for the remaining 2 objectives (22-7 and 25-11c).
  - Persons with at least some college education had the best rate for all 12 objectives with statistically significant health disparities of 10% or more by education (objectives 13-6a and b, 14-29a and b, 15-15a, 15-32, 16-16a, 18-1, 22-2, 26-10c, 27-1a, and 27-10).
  - Persons with middle/high incomes had the best rate for seven of the nine objectives with statistically significant health disparities of 10% or more by income (objectives 1-1, 1-4a, 13-6a, 19-2, 19-3c, 27-1a, and 27-9). Near-poor and poor persons had the best rate for one objective each (14-24a and 26-10a, respectively).
  - One objective had a statistically significant health disparity of 10% or more by geographic location and one had a health disparity of 10% or more by geographic location but lacked data to assess statistical significance. Persons living in urban or metropolitan areas had a better rate for one (objective 1-1), whereas persons living in rural or nonmetropolitan areas had a better rate for the other (objective 8-1a).
  - Eight objectives had statistically significant health disparities of 10% or more by disability status. Persons with disabilities (objectives 1-1, 1-4a, and 14-29a and b) and those without disabilities (objectives 13-6a, 19-2, 22-2, 27-1a) each had the best rate for the four of these objectives.
  - Health disparities of 100% or more were observed for some objectives among racial and ethnic populations, as well as by sex, education level, income, and geographic location. Changes in disparities of 50 percentage points or more between the baseline and most recent data points also were observed. Many of these disparities are discussed in the Highlights, above.

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# Transition to Healthy People 2020

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Moving from Healthy People 2010 (HP2010) to Healthy People 2020 (HP2020), the Leading Health Indicators (LHIs) have evolved to reflect the most recent federal policy recommendations, as well as a greater emphasis in HP2020 on the determinants of health. The differences between the HP2010 LHIs and the HP2020 LHIs are summarized below.

More detailed information about the HP2020 LHIs can be found at the HP2020 website, available from <http://www.healthypeople.gov>.

- › There are 12 HP2020 LHI topics, monitored through 26 HP2020 LHIs. In comparison, the 10 HP2010 LHI topics were monitored through 28 HP2010 LHIs. This set of 28 includes the original 22 LHIs introduced at the launch of HP2010, as well as 6 supplemental LHIs which were added later.
- › The HP2010 LHI topics ‘Physical Activity’ and ‘Overweight and Obesity’ were combined and expanded to form the HP2020 LHI topic ‘Nutrition, Physical Activity, and Obesity.’
  - The objectives on obesity among adults (HP2010 objective 19-2) and among children and adolescents (HP2010 objective 19-3c) were retained as LHIs (HP2020 objectives NWS-9 and NWS-10.4, respectively). However, the age range for children and adolescents was changed from 6–19 years in HP2010 to 2–19 years in HP2020.
  - The objective on moderate physical activity among adults (HP2010 objective 22-2) was modified to reflect new physical activity guidelines (HP2020 objective PA-2.4) and retained as an LHI [4].
  - The objective on rigorous physical activity among adolescents (HP2010 objective 22-7) was not retained as an LHI.
  - An objective on vegetable consumption was added as an LHI (HP2020 objective NWS-15.1).
- › The HP2010 LHI topic ‘Tobacco Use’ was renamed ‘Tobacco’ in the HP2020 LHIs.
  - The objectives on cigarette smoking among adults (HP2010 objective 27-1a) and adolescents (HP2010 objective 27-2b) were retained unmodified as LHIs (HP2020 objectives TU-1.1 and TU-2.2, respectively) [4].
- › The HP2010 LHI topic ‘Substance Abuse’ is also included in the HP2020 LHIs.
  - The objective on adult binge drinking in the past month (HP2010 objective 26-11c) was modified to reflect a new definition for women (HP2020 objective SA-14.3) and retained as an LHI.
- The objective on adult illicit drug use in the past 30 days (HP2010 objective 26-10c) was not retained as an LHI.
- The objective on adolescents not using alcohol or illicit drugs in the past 30 days (HP2010 objective 26-10a) was modified to measure adolescents using alcohol or illicit drugs in the past 30 days (HP2020 objective SA-13.1) and retained as an LHI.
- › The HP2010 LHI topic ‘Responsible Sexual Behavior’ was renamed ‘Reproductive and Sexual Health’ in the HP2020 LHIs.
  - All five objectives (HP2010 objectives 13-6a and b, and 25-11a through c) were not retained as LHIs; instead, the proportion of sexually active females who received reproductive health services (HP2020 objective FP-7.1) was added as an LHI.
  - A new objective on persons with HIV who know their serostatus (HP2020 objective HIV-13) was added as an LHI.
- › The HP2010 LHI topic ‘Mental Health’ is also included in the HP2020 LHIs.
  - The objective on suicide (HP2010 objective 18-1) was retained unmodified as an LHI (HP2020 objective MHMD-1).
  - The objective on treatment for adults with depression (HP2010 objective 18-9b) was not retained as an LHI.
  - An objective on adolescents who experience major depressive episodes (HP2020 objective MHMD-4.1) was added as an LHI.
- › The HP2010 LHI topic ‘Injury and Violence’ is also included in the HP2020 LHIs.
  - The objective on homicides (HP2010 objective 15-32) was retained unmodified as an LHI (HP2020 objective IVP-29).
  - The objective on deaths from motor vehicle crashes (HP2010 objective 15-15a) was not retained as an LHI.
  - An objective on fatal injuries (HP2020 objective IVP-1.1) was added as an LHI.
- › The HP2010 LHI topic ‘Environmental Quality’ is also included in the HP2020 LHIs.
  - The objectives on exposure to ozone (HP2010 objective 8-1a) and secondhand smoke (HP2010 objective 27-10) were modified and retained as LHIs. The objective on exposure to ozone was modified and expanded to reflect new air quality guidelines (HP2020 objective EH-1), and the

objective on secondhand smoke is now restricted to children aged 3–11 years (HP2020 objective TU-11.1) instead of ages 4 years and over.

- The objective on exposure to tobacco smoke at home among children (HP2010 objective 27-9) was not retained as an LHI.
- › The HP2010 LHI topic ‘Immunization’ was expanded to form the HP2020 LHI topic ‘Clinical Preventive Services.’
  - The objective on fully immunized young children (HP2010 objective 14-24a) was modified to reflect new immunization guidelines (HP2020 objective IID-8) and retained as an LHI.
  - The two objectives on immunization of noninstitutionalized high-risk older adults (HP2010 objectives 14-29a and b) were not retained as LHIs.
  - Objectives on colorectal cancer screening (HP2020 objective C-16), adults with hypertension who have their blood pressure under control (HP2020 objective HDS-12), and adults with diabetes with uncontrolled glycemia (HP2020 objective D-5.1) were added as LHIs.
- › The HP2010 LHI topic ‘Access to Health Care’ was renamed ‘Access to Health Services’ in the HP2020 LHIs.
  - The objective on medical insurance (HP2010 objective 1-1) was retained unmodified as an LHI (HP2020 objective AHS-1.1), though it was referred to as health insurance in Healthy People 2010.
  - The objectives on hospitalization for pediatric asthma (HP2010 objective 1-9a) and prenatal care beginning first trimester (objective 16-6a) were not retained as LHIs.
  - The objective on source of ongoing care (HP2010 objective 1-4a) was not retained as an LHI; instead, the objective on persons with a usual primary care provider (HP2020 objective AHS-3) was added as an LHI.
- › There are three new LHI topics in HP2020, resulting in four new LHIs.
  - ‘Maternal, Infant, and Child Health’ is monitored through two objectives: infant mortality (HP2020 objective MICH-1.3) and preterm births (HP2020 objective MICH-9.1).
  - ‘Oral Health’ is monitored through one objective on persons who used the oral health care system in the past year (HP2020 objective OH-7).
  - ‘Social Determinants’ is monitored through one objective on students who graduate with a regular diploma 4 years after starting 9<sup>th</sup> grade (HP2020 objective AH-5.1).

Table LHI-1, “A Crosswalk Between the Healthy People 2010 and Healthy People 2020 Leading Health Indicators,” summarizes the Healthy People 2010 LHIs and the Healthy People 2020 LHIs as well as changes between the two sets of indicators.

[Appendix D](#), “A Crosswalk Between Objectives From Healthy People 2010 to Healthy People 2020,” summarizes all changes between the two decades of objectives.

Table LHI-1. A Crosswalk Between the Healthy People 2010 and Healthy People 2020 Leading Health Indicators

Healthy People 2010 Leading Health Indicators		Healthy People 2020 Leading Health Indicators		Change Between Sets
<b>Physical Activity</b>	22-2. Regular physical activity—Moderate or vigorous (age adjusted, 18+ years)	<b>Nutrition, Physical Activity, and Obesity</b>	PA-2.4. Adults meeting objectives for aerobic physical activity and for muscle-strengthening activity (18+ years)	Retained as an LHI and modified to reflect new physical activity guidelines
	22-7. Vigorous physical activity in students (grades 9–12)		Not a Healthy People 2020 LHI	Not retained as an LHI
<b>Overweight and Obesity</b>	19-2. Obesity in adults (age adjusted, 20+ years)		NWS-9. Obesity in adults (age adjusted, 20+ years)	Retained unmodified as an LHI
	19-3c. Obesity in children and adolescents (6–19 years)		NWS-10.4. Obesity in children and adolescents (2–19 years)	Retained as an LHI with modified age range
Not a Healthy People 2010 LHI			NWS-15.1. Contribution of total vegetables to diets (2+ years)	New LHI
<b>Tobacco Use</b>	27-1a. Cigarette use by adults (age adjusted, 18+ years)		<b>Tobacco</b>	TU-1.1. Cigarette use by adults (age adjusted, 18+ years)
	27-2b. Cigarette use in past month by students (grades 9–12)	TU-2.2. Cigarette use in past month by students (grades 9–12)		Retained unmodified as an LHI
<b>Substance Abuse</b>	26-10a. Adolescents not using alcohol or illicit drugs in past 30 days (12–17 years)	<b>Substance Abuse</b>	SA-13.1. Adolescents using alcohol or illicit drugs in past 30 days (12–17 years)	Retained as an LHI and modified to measure converse
	26-10c. Adults using illicit drugs in past 30 days (18+ years)		Not a Healthy People 2020 LHI	Not retained as an LHI
	26-11c. Adults binge drinking in the past month (18+ years)		SA-14.3. Adults binge drinking in the past month (18+ years)	Retained as an LHI and modified to reflect new definition for women
<b>Responsible Sexual Behavior</b>	13-6a. Condom use among sexually active unmarried persons—females (18–44 years)	<b>Reproductive and Sexual Health</b>	Not a Healthy People 2020 LHI	Not retained as an LHI
	13-6b. Condom use among sexually active unmarried persons—males (18–44 years)		Not a Healthy People 2020 LHI	Not retained as an LHI
	25-11a. Students who never had sexual intercourse (grades 9–12)		Not a Healthy People 2020 LHI	Not retained as an LHI
	25-11b. Students who had sexual intercourse, but not in the past 3 months (grades 9–12)		Not a Healthy People 2020 LHI	Not retained as an LHI
	25-11c. Students who used condoms at last intercourse (grades 9–12)		Not a Healthy People 2020 LHI	Not retained as an LHI
Not a Healthy People 2010 LHI			FP-7.1. Sexually active females who receive reproductive health services (15–44 years)	New LHI
Not a Healthy People 2010 LHI		HIV-13. Persons with HIV who know their serostatus (13+ years)	New LHI	

Table LHI-1. A Crosswalk Between the Healthy People 2010 and Healthy People 2020 Leading Health Indicators (continued)

Healthy People 2010 Leading Health Indicators		Healthy People 2020 Leading Health Indicators		Change Between Sets
<b>Mental Health</b>	18-1. Suicide (age adjusted, per 100,000 population)	<b>Mental Health</b>	MHMD-1. Suicide (age adjusted, per 100,000 population)	Retained unmodified as an LHI
	18-9b. Treatment for adults with depression (18+ years)		Not a Healthy People 2020 LHI	Not retained as an LHI
Not a Healthy People 2010 LHI			MHMD-4.1. Adolescents who experience major depressive episodes (MDE) (12–17 years)	New LHI
<b>Injury and Violence</b>	15-15a. Deaths from motor vehicle crashes (age adjusted, per 100,000 population)	<b>Injury and Violence</b>	Not a Healthy People 2020 LHI	Not retained as an LHI
	15-32. Homicides (age adjusted, per 100,000 population)		IVP-29. Homicides (age adjusted, per 100,000 population)	Retained unmodified as an LHI
Not a Healthy People 2010 LHI			IVP-1.1. Fatal injuries (age adjusted, per 100,000 population)	New LHI
<b>Environmental Quality</b>	8-1. Percent of persons exposed to ozone	<b>Environmental Quality</b>	EH-1. Number of days the Air Quality Index (AQI) exceeds 100	Retained as an LHI and modified to reflect new air quality guidelines
	27-9. Exposure to tobacco smoke at home among children (≤6 years)		Not a Healthy People 2020 LHI	Not retained as an LHI
	27-10. Exposure to environmental tobacco smoke among nonsmokers (age adjusted, 4+ years)		TU-11.1 Children exposed to secondhand smoke (3–11 years)	Retained as an LHI and modified to reflect new age range and secondhand smoke guidelines
<b>Immunization</b>	14-24a. Fully immunized young children (19–35 months)	<b>Clinical Preventive Services</b>	14-24a. Fully immunized young children (19–35 months)	Retained as an LHI and modified to reflect new immunization guidelines
	14-29a. Vaccination of noninstitutionalized high-risk older adults—Influenza vaccine in past 12 months (age adjusted, 65+ years)		Not a Healthy People 2020 LHI	Not retained as an LHI
	14-29b. Vaccination of noninstitutionalized high-risk older adults—Pneumococcal vaccine ever received (age adjusted, 65+ years)		Not a Healthy People 2020 LHI	Not retained as an LHI
Not a Healthy People 2010 LHI		C-16. Colorectal cancer screening based on most recent guidelines (50–75 years)	New LHI	
Not a Healthy People 2010 LHI		HDS-12. Adults with hypertension whose blood pressure is under control (18+ years)	New LHI	
Not a Healthy People 2010 LHI		D-5.1. Diabetic population with an A1c value greater than 9 percent	New LHI	

Table LHI-1. A Crosswalk Between the Healthy People 2010 and Healthy People 2020 Leading Health Indicators (continued)

Healthy People 2010 Leading Health Indicators		Healthy People 2020 Leading Health Indicators		Change Between Sets
<b>Access to Health Care</b>	1-1. Persons with health insurance (<65 years)	<b>Access to Health Services</b>	AHS-1.1. Persons with medical insurance (<65 years)	Retained unmodified as an LHI
	1-4a. Source of ongoing care		AHS-3. Persons with a usual primary care provider	Changed to an alternate objective
	1-9a. Hospitalization for pediatric asthma (admissions per 10,000 population, <18 years)		Not a Healthy People 2020 LHI	Not retained as an LHI
	16-6a. Prenatal care beginning in first trimester		Not a Healthy People 2020 LHI	Not retained as an LHI
Not a Healthy People 2010 LHI		<b>Maternal, Infant, and Child Health</b>	MICH-1.3. Infant deaths (<1 year, per 1,000 live births)	New LHI
Not a Healthy People 2010 LHI			MICH-9.1. Preterm births	New LHI
Not a Healthy People 2010 LHI		<b>Oral Health</b>	OH-7. Persons who used the oral health care system in the past year (2+ years)	New LHI
Not a Healthy People 2010 LHI		<b>Social Determinants</b>	AH-5.1. Students who graduate with a regular diploma 4 years after starting 9 <sup>th</sup> grade.	New LHI

## Data Considerations

Beginning in 2003, education data for the mortality objectives 15-15a (motor vehicle crash deaths), 15-32 (homicides), and 18-1 (suicide), and the natality objective 16-6a (prenatal care), from the National Vital Statistics System, were suppressed. The educational attainment item was changed in the new U.S. Standard Certificates of Birth and Death in 2003 to be consistent with the Census Bureau data and to improve the ability to identify specific types of educational degrees. Many states, however, are still using the 1989 version of the U.S. Standard Certificate of Death, which focuses on highest school grade completed. As a result, educational attainment data collected using the 2003 version are not comparable with data collected using the 1989 version [5].

Data for objective 16-6a (early prenatal care) were based upon the information recorded on birth certificates and also collected by States and local vital records offices. Due to the desire to produce more robust information, the 2003 revision of the standard birth certificate introduced improved standards which produce non-comparable rates [6,7]. For Healthy People 2010, data obtained from the 1997 version of the standard birth certificate was used from baseline through 2002 to track this objective.

The data label used for objective 19-3c “overweight or obesity” in children and adolescents was revised since the Healthy People 2010 Midcourse Review and progress reviews to “obesity” even though the definition (BMI at or above the sex- and age-specific 95<sup>th</sup> percentile from the 2000 CDC Growth Charts) and interpretation are still the same. This change is consistent with revisions made by the American Academy of Pediatrics, the Institute of Medicine, and other organizations. Strictly speaking, overweight refers to weight in excess of a weight standard which could be due to a greater lean body mass, and obesity refers to excess body fatness. Because the indexes used are based on body mass rather than fatness, the original terminology of “overweight” for children at or above the 95<sup>th</sup> percentile was intended to clarify that this cut-off point should not be used as diagnostic criteria. Rather, these children may or may not have excess body fat and should, therefore, be screened for obesity. However, because body fat is difficult to measure and the majority of children with BMI at or above the 95<sup>th</sup> percentile have high adiposity, on a population-wide basis, high weight-for-height can be considered as an adequate indicator of obesity [8].

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 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.

In general, data on educational attainment are presented for persons aged 25 and over, consistent with guidance given by the Census Bureau. However, because of the requirements of the different data systems, the age groups used to calculate educational attainment for any specific objective may differ from the age groups used to report the data for other Healthy People 2010 objectives, as well as from select populations within the same objective. Therefore, the reader is urged to exercise caution in interpreting the data by educational attainment shown in the Health Disparities Table. See *Healthy People 2010: General Data Issues*, referenced below.

Additional 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 DATA2010 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.

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## References and Notes

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1. Displayed in the Progress Chart (Figure LHI-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 LHI-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 LHI-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 LHI-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 LHI-2 footnotes, as well as the [Technical Appendix](#), for more detail.
4. As of the Healthy People 2020 launch, Healthy People 2020 objectives that were modified from Healthy

People 2010 had some change in the numerator or denominator definitions, the data source(s), or data collection methodology. Healthy People 2020 objectives that were unmodified had no change in the numerator or denominator definitions, the data source(s), or data collection methodology.

5. Xu JQ, Kochanek KD, Murphy SL, Tejada-Vera B. Deaths: Final data for 2007. National vital statistics reports; vol 58 no 19. Hyattsville, MD: National Center for Health Statistics. 2010. Available from: [http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58\\_19.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr58/nvsr58_19.pdf).
6. Ogden CL, Flegal KM. Changes in terminology for childhood overweight and obesity. National health

statistics reports; no 25. Hyattsville, MD: National Center for Health Statistics. 2010. Available from: <http://www.cdc.gov/nchs/data/nhsr/nhsr025.pdf>.

7. National Center for Health Statistics. 2003 revision of the U.S. Standard Certificate of Live Birth. 2003. Available from: [http://www.cdc.gov/nchs/nvss/vital\\_certificate\\_revisions.htm](http://www.cdc.gov/nchs/nvss/vital_certificate_revisions.htm).
8. National Center for Health Statistics. Report of the panel to evaluate the U.S. Standard Certificates and Reports. National Center for Health Statistics. 2000. Available from: [http://www.cdc.gov/nchs/data/dvs/panelreport\\_acc.pdf](http://www.cdc.gov/nchs/data/dvs/panelreport_acc.pdf).

## Comprehensive Summary of Objectives: Leading Health Indicators

Objective	Description	Data Source
1-1	Persons with health insurance (<65 years)	National Health Interview Survey (NHIS), CDC, NCHS.
1-4a	Source of ongoing care	National Health Interview Survey (NHIS), CDC, NCHS.
1-9a	Hospitalization for pediatric asthma (admissions per 10,000 population, <18 years)	Healthcare Cost and Utilization Project (HCUP), AHRQ.
8-1a	Percent of persons exposed to harmful air pollutants—Ozone	Air Quality System (AQS), Environmental Protection Agency (EPA).
13-6a	Condom use among sexually active unmarried persons (18–44 years)—Females	National Survey of Family Growth (NSFG), CDC, NCHS.
13-6b	Condom use among sexually active unmarried persons (18–44 years)—Males	National Survey of Family Growth (NSFG), CDC, NCHS.
14-24a	Fully immunized young children 19–35 months	National Immunization Survey (NIS): CDC, NCIRD; CDC, NCHS.
14-29a	Vaccination of noninstitutionalized high-risk older adults—Influenza vaccine in past 12 months (age adjusted, 65+ years)	National Health Interview Survey (NHIS), CDC, NCHS.
14-29b	Vaccination of noninstitutionalized high-risk older adults—Pneumococcal vaccine ever received (age adjusted, 65+ years)	National Health Interview Survey (NHIS), CDC, NCHS.
15-15a	Deaths from motor vehicle crashes—Age adjusted, per 100,000 population	National Vital Statistics System—Mortality (NVSS–M), CDC, NCHS.
15-32	Homicides (age adjusted, per 100,000 population)	National Vital Statistics System—Mortality (NVSS–M), CDC, NCHS.
16-6a	Prenatal care—Beginning in first trimester	National Vital Statistics System—Nativity (NVSS–N), CDC, NCHS.
18-1	Suicide (age adjusted, per 100,000 population)	National Vital Statistics System—Mortality (NVSS–M), CDC, NCHS.
18-9b	Treatment for adults with depression (18+ years)	National Comorbidity Survey—Replication (NCS–R), NIH, NIMH.
19-2	Obesity in adults (age adjusted, 20+ years)	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
19-3c	Obesity in children and adolescents 6–19 years	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
22-2	Regular physical activity—Moderate or vigorous (age adjusted, 18+ years)	National Health Interview Survey (NHIS), CDC, NCHS.

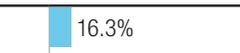
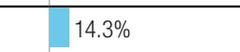
## Comprehensive Summary of Objectives: Leading Health Indicators (continued)

Objective	Description	Data Source
22-7	Vigorous physical activity in students (grades 9–12)	Youth Risk Behavior Surveillance System (YRBSS), CDC, NCCDPHP.
25-11a	Students who never had sexual intercourse (grades 9–12)	Youth Risk Behavior Surveillance System (YRBSS), CDC, NCCDPHP.
25-11b	Students who had sexual intercourse, but not in the past 3 months (grades 9–12)	Youth Risk Behavior Surveillance System (YRBSS), CDC, NCCDPHP.
25-11c	Students who used condoms at last intercourse (grades 9–12)	Youth Risk Behavior Surveillance System (YRBSS), CDC, NCCDPHP.
26-10a	Adolescents not using alcohol or illicit drugs in past 30 days (12–17 years)	National Survey on Drug Use and Health (NSDUH), SAMHSA.
26-10c	Adults using illicit drugs in past 30 days (18+ years)	National Survey on Drug Use and Health (NSDUH), SAMHSA.
26-11c	Binge drinking in the past month—Adults (18+ years)	National Survey on Drug Use and Health (NSDUH), SAMHSA.
27-1a	Cigarette use by adults (age adjusted, 18+ years)	National Health Interview Survey (NHIS), CDC, NCHS.
27-2b	Cigarette use in past month by students (grades 9–12)	Youth Risk Behavior Surveillance System (YRBSS), CDC, NCCDPHP.
27-9	Exposure to tobacco smoke at home among children ( $\leq 6$ years)	National Health Interview Survey (NHIS), CDC, NCHS.
27-10	Exposure to environmental tobacco smoke among nonsmokers (age adjusted, 4+ years)	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.

Figure LHI-1. Progress Toward Target Attainment for Leading Health Indicators

LEGEND		 Moved away from target <sup>1</sup>	 Moved toward target	 Met or exceeded target					
Objective	Percent of targeted change achieved <sup>2</sup>	2010 Target	Baseline (Year)	Final (Year)	Baseline vs. Final				
					Difference <sup>3</sup>	Statistically Significant <sup>4</sup>	Percent Change <sup>5</sup>		
<b>Physical Activity</b>									
22-2. Regular physical activity—Moderate or vigorous (age adjusted, 18+ years)	0.0%	50%	32% (1997)	32% (2008)	0	No	0.0%		
22-7. Vigorous physical activity in students (grades 9–12)	15.0%	85%	65% (1999)	68% (2009)	3	No	4.6%		
<b>Overweight and Obesity</b>									
19-2. Obesity in adults (age adjusted, 20+ years)		15%	23% (1988–94)	34% (2005–08)	11	Yes	47.8%		
19-3c. Obesity in children and adolescents (6–19 years)		5%	11% (1988–94)	18% (2005–08)	7	Yes	63.6%		
<b>Tobacco Use</b>									
27-1a. Cigarette use by adults (age adjusted, 18+ years)	25.0%	12%	24% (1998)	21% (2008)	-3	Yes	-12.5%		
27-2b. Cigarette use in past month by students (grades 9–12)	84.2%	16%	35% (1999)	19% (2009)	-16	Yes	-45.7%		
<b>Substance Abuse</b>									
26-10a. Adolescents not using alcohol or illicit drugs in past 30 days (12–17 years)	30.8%	91%	78% (2002)	82% (2008)	4	Yes	5.1%		
26-10c. Adults using illicit drugs in past 30 days (18+ years)	0.0%	3.2%	7.9% (2002)	7.9% (2008)	0.0	No	0.0%		
26-11c. Adults binge drinking in the past month (18+ years)		13.4%	24.3% (2002)	24.9% (2008)	0.6	No	2.5%		
<b>Responsible Sexual Behavior</b>									
13-6. Condom use among sexually active unmarried persons (18–44 years)									
a. Females	37.0%	50%	23% (1995)	33% (2006–08)	10	Not tested	43.5%		
b. Males*	16.7%	54%	42% (2002)	44% (2006–08)	2	Not tested	4.8%		
25-11a. Students who never had sexual intercourse (grades 9–12)	66.7%	56%	50% (1999)	54% (2009)	4	Not tested	8.0%		
25-11b. Students who had sexual intercourse, but not in the past 3 months (grades 9–12)*		30%	27% (1999)	26% (2009)	-1	Not tested	-3.7%		
25-11c. Students who used condoms at last intercourse (grades 9–12)*	42.9%	65%	58% (1999)	61% (2009)	3	Not tested	5.2%		

Figure LHI-1. Progress Toward Target Attainment for Leading Health Indicators (continued)

Objective	Percent of targeted change achieved <sup>2</sup>	2010 Target	Baseline (Year)	Final (Year)	Baseline vs. Final		
					Difference <sup>3</sup>	Statistically Significant <sup>4</sup>	Percent Change <sup>5</sup>
<b>Mental Health</b>							
18-1. Suicide (age adjusted, per 100,000 population)*		4.8	10.5 (1999)	11.3 (2007)	0.8	Yes	7.6%
<b>Injury and Violence</b>							
15-15a. Deaths from motor vehicle crashes (age adjusted, per 100,000 population)		8.0	14.7 (1999)	13.8 (2007)	-0.9	Yes	-6.1%
15-32. Homicides (age adjusted, per 100,000 population)		2.8	6.0 (1999)	6.1 (2007)	0.1	No	1.7%
<b>Environmental Quality</b>							
8-1a. Percent of persons exposed to ozone		0%	43% (1997)	36% (2010)	-7	Not tested	-16.3%
27-9. Exposure to tobacco smoke at home among children (≤6 years)*		10%	27% (1994)	8% (2005)	-19	Yes	-70.4%
27-10. Exposure to environmental tobacco smoke among nonsmokers (age adjusted, 4+ years)		56%	84% (1988–94)	41% (2005–08)	-43	Yes	-51.2%
<b>Immunization</b>							
14-24a. Fully immunized young children 19–35 months		80%	73% (1998)	78% (2008)	5	Yes	6.8%
14-29. Vaccination of noninstitutionalized high-risk older adults (age adjusted, 65+ years)							
a. Influenza vaccine in past 12 months		90%	64% (1998)	67% (2008)	3	Yes	4.7%
b. Pneumococcal vaccine ever received		90%	46% (1998)	60% (2008)	14	Yes	30.4%
<b>Access to Health Care</b>							
1-1. Persons with health insurance (<65 years)		100%	83% (1997)	83% (2008)	0	No	0.0%
1-4a. Source of ongoing care		96%	87% (1998)	86% (2008)	-1	Yes	-1.1%
1-9a. Hospitalization for pediatric asthma (admissions per 10,000 population, <18 years)*		17.3	23.0 (1996)	14.9 (2008)	-8.1	Yes	-35.2%
16-6a. Prenatal care beginning in first trimester		90%	83% (1998)	84% (2002)	1	Yes	1.2%

## Figure LHI-1. Progress Toward Target Attainment for Leading Health Indicators (continued)

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### 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 objective 18-9b.

### FOOTNOTES

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

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

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

<sup>4</sup> 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.

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

\* Supplemental measure. See [LHI chapter](#) text for more information.

### DATA SOURCES

1-1.	National Health Interview Survey (NHIS), CDC, NCHS.
1-4a.	National Health Interview Survey (NHIS), CDC, NCHS.
1-9a.	Healthcare Cost and Utilization Project (HCUP), AHRQ.
8-1a.	Air Quality System (AQS), Environmental Protection Agency (EPA).
13-6a–b.	National Survey of Family Growth (NSFG), CDC, NCHS.
14-24a.	National Immunization Survey (NIS); CDC, NCIRD; CDC, NCHS.
14-29a–b.	National Health Interview Survey (NHIS), CDC, NCHS.
15-15a.	National Vital Statistics System—Mortality (NVSS-M), CDC, NCHS.
15-32.	National Vital Statistics System—Mortality (NVSS-M), CDC, NCHS.
16-6a.	National Vital Statistics System—Natality (NVSS-N), CDC, NCHS.
18-1.	National Vital Statistics System—Mortality (NVSS-M), CDC, NCHS.
19-2.	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
19-3c.	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
22-2.	National Health Interview Survey (NHIS), CDC, NCHS.
22-7.	Youth Risk Behavior Surveillance System (YRBSS), CDC, NCCDPHP.
25-11a–c.	Youth Risk Behavior Surveillance System (YRBSS), CDC, NCCDPHP.
26-10a.	National Survey on Drug Use and Health (NSDUH), SAMHSA.
26-10c.	National Survey on Drug Use and Health (NSDUH), SAMHSA.
26-11c.	National Survey on Drug Use and Health (NSDUH), SAMHSA.
27-1a.	National Health Interview Survey (NHIS), CDC, NCHS.
27-2b.	Youth Risk Behavior Surveillance System (YRBSS), CDC, NCCDPHP.
27-9.	National Health Interview Survey (NHIS), CDC, NCHS.
27-10.	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.

Figure LHI-2. Health Disparities Table for Leading Health Indicators

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							Sex		Education			Income			Location		Disability				
	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	Summary index	Female	Male	Less than high school	High school graduate	At least some college	Summary index	Poor	Near poor	Middle/high income	Summary index	Urban or metropolitan	Rural or nonmetropolitan	Persons with disabilities	Persons without disabilities
<b>Physical Activity</b>																						
22-2. Regular physical activity—Moderate or vigorous (age adjusted, 18+ years) (1997, 2008) <sup>1*</sup>	Red	Red	Red	Red	Red	Red	B <sup>i</sup>	Red	Red	B	Red	Red	B	Red	Grey	Grey	Grey	Grey	B	Red	Red	B
22-7. Vigorous physical activity in students (grades 9–12) (1999, 2009) <sup>*</sup>	Grey	Grey	Grey	Grey	Red	Red	B	Red	Red	B	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
<b>Overweight and Obesity</b>																						
19-2. Obesity in adults (age adjusted, 20+ years) (1988–94, 2005–08) <sup>2,3*</sup>	Grey	Grey	Grey	Grey	Red	Red	B	Red	Red	B	Grey	Grey	Grey	Grey	Red	Grey	B	Grey	Grey	Grey	Red	B
19-3c. Obesity in children and adolescents 6–19 years (1988–94, 2005–08) <sup>3*</sup>	Grey	Grey	Grey	Grey	Red	Red	B <sup>i</sup>	Grey	B	Red	Grey	Grey	Grey	Grey	Red	Grey	B	Grey	Grey	Grey	Grey	Grey
<b>Tobacco Use</b>																						
27-1a. Cigarette use by adults (age adjusted, 18+ years) (1998, 2008) <sup>1*</sup>	Red	b	Red	Red	B	Red	Red	Grey	B	Red	Red	Red	B	Red	Red	Red	B	Red	Grey	Grey	Red	B
27-2b. Cigarette use in past month by students (grades 9–12) (1999, 2009) <sup>*</sup>	Grey	Grey	Grey	Grey	Red	Red	B <sup>i</sup>	Red	B	Red	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
<b>Substance Abuse</b>																						
26-10a. Adolescents not using alcohol or illicit drugs in past 30 days (12–17 years) (2002, 2008) <sup>4*</sup>	Red	b	Red	Red	B	Red	Red	Grey	B	B	Grey	Grey	Grey	Grey	B <sup>i</sup>	Red	Red	Red	Grey	Grey	Grey	Grey
26-10c. Adults using illicit drugs in past 30 days (18+ years) (2002, 2008) <sup>*</sup>	Red	b	Red	Red	B	Red	Red	Grey	B	Red	Red	Red	B	Red	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
26-11c. Adults binge drinking in the past month (18+ years) (2002, 2008) <sup>4*</sup>	Red	b	Red	Red	B	Red	Red	Grey	B	Red	Grey	Grey	Grey	Grey	B	Red	Red	Red	Grey	Grey	Grey	Grey
<b>Responsible Sexual Behavior</b>																						
13-6a. Condom use among sexually active unmarried persons—females (18–44 years) (1995, 2006–08) <sup>5‡</sup>	Grey	Grey	Grey	Grey	Red	Red	B <sup>i</sup>	Red	Grey	Grey	Red	Red	B	Red	Red	Red	B	Red	B	B <sup>i</sup>	Red	B
b. Condom use among sexually active unmarried persons—males (18–44 years) (2002, 2006–08) <sup>5‡§</sup>	Grey	Grey	Grey	Grey	Red	Red	B	Red	Grey	Grey	Red	Red	B	Red	Red	Red	B	Red	B <sup>i</sup>	Red	Red	B
25-11a. Students who never had sexual intercourse (grades 9–12) (1999, 2009) <sup>‡</sup>	Grey	Grey	Grey	Grey	Red	Red	B	Red	B	B <sup>i</sup>	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
25-11b. Students who had sexual intercourse, but not in the past 3 months (grades 9–12) (1999, 2009) <sup>‡§</sup>	Grey	Grey	Grey	Grey	B	Red	Red	Red	Red	B	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey
25-11c. Students who used condoms at last intercourse (grades 9–12) (1999, 2009) <sup>‡§</sup>	Grey	Grey	Grey	Grey	Red	Red	B <sup>i</sup>	Red	Red	B	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey

Figure LHI-2. Health Disparities Table for Leading Health Indicators (continued)

Population-based objective	Race and Ethnicity							Sex		Education			Income			Location		Disability				
	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	Summary index	Female	Male	Less than high school	High school graduate	At least some college	Summary index	Poor	Near poor	Middle/high income	Summary index	Urban or metropolitan	Rural or nonmetropolitan	Persons with disabilities	Persons without disabilities
<b>Mental Health</b>																						
18-1. Suicide (age adjusted, per 100,000 population) (1999, 2007) <sup>6*s</sup>	↑	↑ <sup>v</sup>			↑	B	↑	↑	B	↓		↑	B									
18-9b. Treatment for adults with depression (18+ years) (2002)*							B					B										
<b>Injury and Violence</b>																						
15-15a. Deaths from motor vehicle crashes (age adjusted, per 100,000 population) (1999, 2007) <sup>6*</sup>		B <sup>v</sup>					↑	B	↑		↑	↑	B	↑								
15-32. Homicides (age adjusted, per 100,000 population) (1999, 2007) <sup>6*</sup>		B <sup>iv</sup>			↑	↑	↑	B	↑				B									
<b>Environmental Quality</b>																						
8-1a. Percent of persons exposed to ozone (1997, 2010) <sup>7+</sup>	B				↑			B	B										↑	↑	B	
27-9. Exposure to tobacco smoke at home among children (≤6 years) (1994, 2005) <sup>8*s</sup>					b		B		B					↑	↑	B	↑					
27-10. Exposure to environmental tobacco smoke among nonsmokers (age adjusted, 4+ years) (1988–94, 2005–08)*					B <sup>ii</sup>		↑	B			↑	↑	B	↑								
<b>Immunization</b>																						
14-24a. Fully immunized young children 19–35 months (1998, 2008) <sup>9,10*</sup>	b	b			B <sup>i</sup>			B <sup>i</sup>	B						B							
14-29a. Vaccination of noninstitutionalized high-risk older adults—Influenza vaccine in past 12 months (age adjusted, 65+ years) (1998, 2008) <sup>1*</sup>							B	iii	B <sup>i</sup>			B									B	
b. Vaccination of noninstitutionalized high-risk older adults—Pneumococcal vaccine ever received (age adjusted, 65+ years) (1998, 2008) <sup>1*</sup>					↑		B	↑	B <sup>i</sup>	↑		B									B	
<b>Access to Health Care</b>																						
1-1. Persons with health insurance (<65 years) (1997, 2008) <sup>1*</sup>	↓						B	iii	B					↓	↓	B	↓		B		B	
1-4a. Source of ongoing care (1998, 2008) <sup>1*</sup>							B	iii	B					↑	↑	B	↑		B		B	
1-9a. Hospitalization for pediatric asthma (admissions per 10,000 population, <18 years) (1996, 2008) <sup>s</sup>									B													
16-6a. Prenatal care beginning in first trimester (1998, 2002)*	↑	v					B				↑	↑	B	↑								

Figure LHI-2. Health Disparities Table for Leading Health Indicators (continued)

NOTES

See DATA2010 at <http://wonder.cdc.gov/data2010> for all Healthy People 2010 tracking data.

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.

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](#).

‡ Measures of variability were available only for the most recent data. Thus, the variability of best group rates was assessed only for the most recent data, and statistical significance was tested only for the most recent data. 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 displayed according to their magnitude, since measures of variability were not available at baseline and therefore statistical significance of changes in disparity could not be tested. See [Technical Appendix](#).

§ Supplemental measure. See LHI chapter text for more information.

<sup>1</sup> Baseline data by race and ethnicity are for 1999.

<sup>2</sup> Baseline data by disability status are for 1991–94.

<sup>3</sup> Data by income are categorized using only two groups: lower income ( $\leq 130\%$  of Federal poverty level, displayed under "poor") and higher income ( $> 130\%$  of Federal poverty level, displayed under "middle/high income").

<sup>4</sup> Baseline data by income are for 2005.

<sup>5</sup> Data by education level are for persons aged 25–44 years.

<sup>6</sup> Most recent data by education level are for 2002.

<sup>7</sup> Most recent data by race and ethnicity, by sex, and by location, are for 2004.

<sup>8</sup> Baseline data by race and ethnicity are for 2005.

<sup>9</sup> Baseline data by race and ethnicity are for 2000.

<sup>10</sup> Baseline data by income exclude "middle/high income" for comparability with most recent data year.

Figure LHI-2. Health Disparities Table for Leading Health Indicators (continued)

FOOTNOTES (continued)

- <sup>i</sup> 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](#).
- <sup>ii</sup> Data are for Mexican American.
- <sup>iii</sup> Change in the summary index cannot be assessed. See [Technical Appendix](#).
- <sup>iv</sup> Reliability criterion for best group rate not met, or data available for only one group, at baseline. Change in disparity cannot be assessed. See [Technical Appendix](#).
- <sup>v</sup> Data are for Asian or Pacific Islander.

DATA SOURCES

- 1-1. National Health Interview Survey (NHIS), CDC, NCHS.
- 1-4a. National Health Interview Survey (NHIS), CDC, NCHS.
- 1-9a. Healthcare Cost and Utilization Project (HCUP), AHRQ.
- 8-1a. Air Quality System (AQS), Environmental Protection Agency (EPA).
- 13-6a–b. National Survey of Family Growth (NSFG), CDC, NCHS.
- 14-24a. National Immunization Survey (NIS); CDC, NCIRD; CDC, NCHS.
- 14-29a–b. National Health Interview Survey (NHIS), CDC, NCHS.
- 15-15a. National Vital Statistics System—Mortality (NVSS-M), CDC, NCHS.
- 15-32. National Vital Statistics System—Mortality (NVSS-M), CDC, NCHS.
- 16-6a. National Vital Statistics System—Nativity (NVSS-N), CDC, NCHS.
- 18-1. National Vital Statistics System—Mortality (NVSS-M), CDC, NCHS.
- 18-9b. National Comorbidity Survey—Replication (NCS-R), NIH, NIMH.
- 19-2. National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
- 19-3c. National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
- 22-2. National Health Interview Survey (NHIS), CDC, NCHS.
- 22-7. Youth Risk Behavior Surveillance System (YRBSS), CDC, NCCDPHP.
- 25-11a–c. Youth Risk Behavior Surveillance System (YRBSS), CDC, NCCDPHP.
- 26-10a. National Survey on Drug Use and Health (NSDUH), SAMHSA.
- 26-10c. National Survey on Drug Use and Health (NSDUH), SAMHSA.
- 26-11c. National Survey on Drug Use and Health (NSDUH), SAMHSA.
- 27-1a. National Health Interview Survey (NHIS), CDC, NCHS.
- 27-2b. Youth Risk Behavior Surveillance System (YRBSS), CDC, NCCDPHP.
- 27-9. National Health Interview Survey (NHIS), CDC, NCHS.
- 27-10. National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.

