Heart Disease and Stroke

CHAPTER 12

Co-Lead Agencies

Centers for Disease Control and Prevention
National Institutes of Health

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GOAL:

Improve cardiovascular health and quality of life through the prevention of risk factors; detection and treatment of risk factors; early identification and treatment of heart attacks and strokes; and prevention of recurrent cardiovascular events.

This chapter includes objectives for the Focus Area that monitors coronary heart disease (CHD) and stroke deaths, heart failure hospitalizations, risk factors for heart disease and stroke, knowledge of heart attack and stroke symptoms and response, and the availability of treatment options.

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 for the majority of objectives in this Focus Area over the last decade [1]. Two-thirds of the Heart Disease and Stroke objectives with data to monitor progress moved toward or achieved their Healthy People 2010 targets. However, for three objectives, the change was opposite the direction of the target (Figure 12-1). Moreover, health disparities of 50% or more among racial and ethnic populations and education groups were observed (Figure 12-2), as highlighted below [2].
- The CHD death rate (objective 12-1) declined 35.4% between 1999 and 2007, from 195 to 126 deaths per 100,000 population (age adjusted), exceeding the Healthy People 2010 target of 156 deaths per 100,000. Disparities were observed for a number of population groups, for example:
  - Among racial and ethnic groups, the Asian or Pacific Islander population had the lowest (best) CHD mortality rate, 71 deaths per 100,000 population (age adjusted) in 2007, whereas the non-Hispanic black population had a rate of 153 deaths per 100,000 (age adjusted). The rate for the non-Hispanic black population was more than twice the best group rate [2].
  - Among education groups, persons aged 25–64 with at least some college education had the lowest (best) CHD mortality rate, 30 deaths per 100,000 population (age adjusted) in 2002. Persons aged 25–64 with less than a high school education had a rate of 83 deaths per 100,000 (age adjusted), and high school graduates in the same age group had a rate of 71 deaths per 100,000 (age adjusted). The rate for persons with less than a high school education was almost three times the best group rate, whereas the rate for high school graduates was almost two and a half times the best group rate [2].

- Although the Healthy People 2010 target for CHD deaths was largely met throughout the U.S., there remained geographic pockets with higher rates along the Ohio-Mississippi River Basin, a geographic region generally referred to as "Coronary Valley" (Figure 12-3).

- The stroke death rate (objective 12-7) declined 32.3% between 1999 and 2007, from 62 to 42 deaths per 100,000 (age adjusted), exceeding the 2010 target of 50 deaths per 100,000. Disparities were observed for a number of population groups, for example:

  - Among racial and ethnic groups, the American Indian or Alaska Native population had the lowest (best) rate, 30 deaths per 100,000 population (age adjusted) in 2007. The non-Hispanic black population had a rate of 62 deaths per 100,000 (age adjusted), more than twice the best group rate [2].
  - Among education groups, persons aged 25–64 with at least some college education had the lowest (best) stroke death rate, 7 deaths per 100,000 population (age adjusted) in 2002. Persons aged 25–64 with less than a high school education had a rate of 21 deaths per 100,000 (age adjusted), and high school graduates in the same age group had a rate of 16 deaths per 100,000 (age adjusted). The rate for persons with less than a high school education was three times the best group rate, whereas the rate for high school graduates was almost two and a half times the best group rate [2].

- Although the Healthy People 2010 target for stroke deaths was largely met throughout the U.S., there remained geographic pockets with higher rates in the Southeast, a geographic region generally referred to as the "Stroke Belt" (Figure 12-4).

- Hospitalization rates for congestive heart failure among persons aged 65–74 (objective 12-6a) declined 35.6% between 1997 and 2007, from 13.2 to 8.5 hospitalizations per 1,000, moving toward the 2010 target of 6.5 hospitalizations per 1,000. Congestive heart failure hospitalizations among persons aged 75–84 (objective 12-6b), declined 26.2% between 1997 and 2007, from 26.7 to 19.7 hospitalizations per 1,000, moving toward the 2010 target of 13.5 hospitalizations per 1,000; and among persons aged 85 and over (objective 12-6c), hospitalizations declined 37.6%, from 52.7 to 32.9 per 1,000, moving toward the 2010 target of 26.5 hospitalizations per 1,000.

  - In the 65–74 age group (objective 12-6a), the white population had the lowest (best) rate among racial and ethnic groups, 5.9 hospitalizations per 1,000 population in 2007. The black population had a rate of 14.0 per 1,000, nearly two and a half times the best group rate [2].
  - In the 75–84 age group (objective 12-6b), the white population also had the lowest (best) rate among racial and ethnic groups, 14.8 hospitlaizations per 1,000 population in 2007. The black population had a rate of 25.9 per 1,000, almost twice the best group rate [2].

- The proportion of persons aged 18 and over who had their blood pressure measured in the past 2 years and who know their blood pressure level (objective 12-12) increased 1.1% between 1998 and 2008, from 90% to 91% (age adjusted), moving toward the Healthy People 2010 target of 95%. Disparities were observed for a number of population groups, for example:

  - Among racial and ethnic groups, the non-Hispanic white and non-Hispanic black populations had the highest (best) rate of blood pressure monitoring, 92% (age adjusted) in 2008, whereas the Hispanic or Latino population had a rate of 82% (age adjusted). When expressed as persons *who do no monitoring*, the rate for the Hispanic or Latino population was more than twice the rate for the non-Hispanic white and the non-Hispanic black populations [2].
  - Among education groups, persons aged 25 and over with at least some college education had the highest (best) rate of blood pressure monitoring, 94% in 2008, whereas persons aged 25 and over with less than a high school education had a rate of 83%. When expressed as persons *who do no monitoring*, the rate for persons with less than a high school education was almost three times the rate for persons with at least some college education [2].
    - Persons with less than a high school education had blood pressure monitoring rates of 84% in 1998 and 83% in 2008, whereas persons with at least some college education had rates of 93% in 1998 and 94% in 2008. When rates are expressed in terms of persons *who do no monitoring*, the disparity between persons without a high school education and those with at least some college education decreased 55 percentage points between 1998 and 2008 [2,3].

- Mean total blood cholesterol levels among persons aged 20 and over (objective 12-13) declined 3.9% from 1988–94 to 2005–08, from 206 to 198 mg/dL (age adjusted), exceeding the 2010 target of 199 mg/dL. During the same period, the proportion of persons aged 20 and over with high blood cholesterol levels (objective 12-14) fell 28.6%, from 21% to 15% (age adjusted), exceeding the 2010 target of 17%.

- The proportion of persons aged 18 and over who were aware of the symptoms of a heart attack and the importance of calling 911 (objective 12-2) declined 11.9% between 2001 and 2008, from 42% to 37% (age adjusted), moving away from the 2010 target of 47%.

- The proportion of persons aged 18 and over who were aware of the symptoms of a stroke (objective 12-8) declined by 10.0% between 2001 and 2009, from 60% to 54% (age adjusted), moving away from the 2010 target of 65%.
- The prevalence of hypertension among persons aged 18 and over (objective 12-9) increased 20.0% from 1988–94 to 2005–08, from 25% to 30% (age adjusted), moving away from the 2010 target of 14%. Disparities were observed for a number of population groups, for example:
  - Among racial and ethnic populations, the Mexican American population had the lowest (best) rate, 26% (age adjusted) in 2005–08. The rate for the non-Hispanic black population was 42% (age adjusted), more than one and a half times the best group rate [2].

Summary of Progress

- Figure 12-1 presents a quantitative assessment of progress in achieving the Healthy People 2010 objectives for Heart Disease and Stroke [1]. Data to measure progress toward target attainment were available for 15 objectives. Of these:
  - Four objectives (12-1, 12-7, 12-13, and 12-14) exceeded their Healthy People 2010 targets.
  - Eight objectives (12-4, 12-6a through c, 12-10 through 12-12, and 12-15) moved toward their targets. A statistically significant difference between the baseline and the final data points was observed for each of these objectives.
  - Three objectives (12-2, 12-8, and 12-9) moved away from their targets. A statistically significant difference between the baseline and the final data points was observed for each of these objectives.
- Two objectives (12-5 and 12-16) remained developmental, and two objectives (12-3a and b) had no follow-up data available to measure progress [4].
- Figure 12-2 displays health disparities in Heart Disease and Stroke 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].
  - Of the 11 objectives with statistically significant racial and ethnic health disparities of 10% or more, the non-Hispanic white population had the unique best rate for three objectives (12-2, 12-8, and 12-10), and the white population (including persons of Hispanic origin) had the best rate for two objectives (12-6a and b). The American Indian or Alaska Native (objective 12-7), Asian or Pacific Islander (objective 12-1), Asian (objective 12-15), Mexican American (objective 12-9), and non-Hispanic black populations (objective 12-14) had the unique best rate for one objective each. The non-Hispanic black and non-Hispanic white populations were tied for the best group rate for one objective (12-12).
  - Females had better rates than males for eight of the nine objectives with statistically significant health disparities of 10% or more by sex (objectives 12-1, 12-2, 12-6a and b, 12-8, 12-10, 12-12, and 12-15). Males had a better rate for one objective (12-14).
  - Persons with at least some college education had the best rates for all seven of the objectives with statistically significant health disparities of 10% or more by education level (objectives 12-1, 12-2, 12-4, 12-7, 12-8, 12-12, and 12-15).
  - Persons with middle/high incomes had the best rate for both of the objectives with statistically significant health disparities of 10% or more by income (objectives 12-9 and 12-10).
  - Persons without disabilities had a better rate than persons with disabilities for two of the three objectives with statistically significant health disparities of 10% or more by disability status (objectives 12-8 and 12-9). Persons with disabilities had a better rate for the other objective (12-10).
  - There were several objectives with health disparities of 100% or more. Most of these were discussed in the Highlights, above.

Transition to Healthy People 2020

The goal of the Healthy People 2020 Heart Disease and Stroke Topic Area is consistent with the Healthy People 2010 goal (stated on page 12-3, above). The Healthy People 2020 objectives expand on the prevalence, treatment, and control of individual heart disease and stroke risk factors and also include an overall measure of cardiovascular health that takes into account the status and interaction of all major cardiovascular disease (CVD) risk factors to generate a composite CVD risk score. The objectives also plan to monitor rehabilitation following heart attack and stroke. See HealthyPeople.gov for a complete list of Healthy People 2020 topics and objectives.

The Healthy People 2020 Heart Disease and Stroke Topic Area objectives can be grouped into five sections:

- Prevention of risk factors

- Detection and treatment of risk factors
- Early identification and treatment of heart attack and stroke
- Prevention of recurrent cardiovascular events
- Cross-cutting.

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

- The Healthy People 2020 Heart Disease and Stroke Topic Area has a total of 49 objectives, 31 of which are developmental [4]. The Healthy People 2010 Heart Disease and Stroke Focus Area had 19 objectives, 2 of which were developmental.
- Ten Healthy People 2010 objectives were retained "as is" [5].
  - Nine objectives were retained as measurable: coronary heart disease deaths (objective 12-1), stroke deaths (objective 12-7), knowledge of stroke symptoms (objective 12-8), hypertension prevalence (objective 12-9), blood pressure control (objective 12-10), blood pressure monitoring (objective 12-12), mean total cholesterol (objective 12-13), prevalence of high cholesterol (objective 12-14), and cholesterol screening (objective 12-15).
  - One objective, adults with CHD who have their LDL cholesterol at or below the recommended level (objective 12-16), was retained as developmental.
- Eight Healthy People 2010 objectives were modified to create 12 Healthy People 2020 objectives [6].
  - Three objectives for congestive heart failure hospitalizations among older adults aged 65–74, 75–84, and 85 and over (objectives 12-6a through c) were expanded to heart failure hospitalizations.
  - Fibrinolytic therapy within an hour of symptom onset and percutaneous intervention therapy within 90 minutes of symptom onset of heart attack (objectives 12-3a and b) were modified to within 30 and 90 minutes of hospital arrival, respectively.
  - Training in cardiopulmonary resuscitation (CPR) in the past year (objective 12-4) and timely electrical shock therapy for out-of-hospital cardiac arrest (objective 12-5) were combined into one developmental objective. The resulting Healthy People 2020 objective addresses appropriate bystander response to, and emergency medical services for, out-of hospital cardiac arrest.
  - Taking action to help control blood pressure (objective 12-11) was divided into six objectives. There are five developmental objectives for hypertension regarding meeting recommended guidelines for body mass index (BMI), saturated fat consumption, sodium intake, physical activity, and moderate alcohol consumption, as well as one objective for prescribed antihypertensive medication use among adults with hypertension.
- One Healthy People 2010 objective (objective 12-2) that tracks knowledge of heart attack symptoms and the importance of calling 911 was retained "as is" and was also modified to create three Healthy People 2020 objectives. The other two objectives separately track the two knowledge components.
- Twenty-four new objectives, all of which are developmental, were added to the Healthy People 2020 Heart Disease and Stroke Topic Area:
  - A new objective tracking overall cardiovascular health.
  - A new objective monitoring hypertension prevalence among children and adolescents.
  - Five new objectives for prehypertension regarding meeting recommended guidelines for BMI, saturated fat consumption, sodium intake, physical activity, and moderate alcohol consumption.
  - Eight new objectives on cholesterol-lowering management advice and adherence: diet, physical activity, weight control, and prescribed drug therapy.
  - Three new objectives on aspirin use for CVD risk reduction.
  - Two new rehabilitation objectives for heart attack and stroke survivors.
  - Four new stroke objectives, including knowledge of stroke symptoms and the importance of calling 911, knowledge of the importance of calling 911 for stroke, acute reperfusion therapy within 3 hours of symptom onset for stroke patients, and adults who have had a stroke who have their LDL cholesterol at or below recommended levels.

Six new objectives that address incidence, case fatality, and recurrence rates for both heart attacks and strokes were proposed but not included in the Healthy People 2020 Heart Disease and Stroke Topic Area due to lack of national data sources.

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 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.

Beginning in 2003, education data for CHD and stroke deaths (objectives 12-1 and 12-7) from the National Vital Statistics System were suppressed. The educational attainment item was changed in the new U.S. Standard Certificate of 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 [7].

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 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.

References and Notes

1. Displayed in the Progress Chart (Figure 12-1), 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 12-1 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 12-2). 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 12-2 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 12-2 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. 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.

Comprehensive Summary of Objectives: Heart Disease and Stroke

Objective	Description	Data Source or Objective Status
12-1	Coronary heart disease (CHD) deaths (age adjusted, per 100,000 population)	National Vital Statistics System—Mortality (NVSS-M), CDC, NCHS.
12-2	Knowledge of heart attack symptoms and importance of calling 911 (age adjusted, 20+ years)	National Health Interview Survey (NHIS), CDC, NCHS.
12-3a	Fibrinolytics within an hour of symptom onset	National Registry of Myocardial Infarction (NRMI-4), National Acute Myocardial Infarction Project, CMS.
12-3b	Percutaneous intervention (PCI) within 90 minutes of symptom onset	National Registry of Myocardial Infarction (NRMI-4), National Acute Myocardial Infarction Project, CMS.
12-4	Training in cardiopulmonary resuscitation (CPR) in past year (age adjusted, 20+ years)	National Health Interview Survey (NHIS), CDC, NCHS.
12-5	Timely electrical shock therapy for out-of-hospital cardiac arrest	Developmental.
12-6a	Congestive heart failure hospitalizations—65–74 years (per 1,000 population)	National Hospital Discharge Survey (NHDS), CDC, NCHS.
12-6b	Congestive heart failure hospitalizations—75–84 years (per 1,000 population)	National Hospital Discharge Survey (NHDS), CDC, NCHS.
12-6c	Congestive heart failure hospitalizations—85+ years (per 1,000 population)	National Hospital Discharge Survey (NHDS), CDC, NCHS.
12-7	Stroke deaths (age adjusted, per 100,000 population)	National Vital Statistics System—Mortality (NVSS-M), CDC, NCHS.
12-8	Knowledge of stroke symptoms (age adjusted, 20+ years)	National Health Interview Survey (NHIS), CDC, NCHS.
12-9	High blood pressure (age adjusted, 18+ years)	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
12-10	High blood pressure control (age adjusted, 18+ years)	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
12-11	Taking action to help control blood pressure (age adjusted, 18+ years)	National Health Interview Survey (NHIS), CDC, NCHS.
12-12	Adults who had their blood pressure measured in past 2 years and know their blood pressure level (age adjusted, 18+ years)	National Health Interview Survey (NHIS), CDC, NCHS.
12-13	Mean total blood cholesterol levels (mg/dL, age adjusted, 20+ years)	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
12-14	High blood cholesterol levels (age adjusted, 20+ years)	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
12-15	Blood cholesterol screening in past 5 years (age adjusted, 18+ years)	National Health Interview Survey (NHIS), CDC, NCHS.
12-16	Adults with CHD who have their LDL cholesterol at or below the recommended level	Developmental.

Figure 12-1. Progress Toward Target Attainment for Focus Area 12: Heart Disease and Stroke

LEGEND — Moved away from target[1] | Moved toward target | Met or exceeded target

Objective	Percent of targeted change achieved[2] (0 25 50 75 100)	2010 Target	Baseline (Year)	Final (Year)	Baseline vs. Final: Difference[3]	Baseline vs. Final: Statistically Significant[4]	Baseline vs. Final: Percent Change[5]
12-1. Coronary heart disease (CHD) deaths (age adjusted, per 100,000 population)	176.9%	156	195 (1999)	126 (2007)	-69	Yes	-35.4%
12-2. Knowledge of heart attack symptoms and importance of calling 911 (age adjusted, 20+ years)		47%	42% (2001)	37% (2008)	-5	Yes	-11.9%
12-4. Training in cardiopulmonary resuscitation (CPR) in past year (age adjusted, 20+ years)	50.0%	12%	8% (2001)	10% (2008)	2	Yes	25.0%
12-6. Congestive heart failure hospitalizations (per 1,000 population)							
a. 65–74 years	70.1%	6.5	13.2 (1997)	8.5 (2007)	-4.7	Yes	-35.6%
b. 75–84 years	53.0%	13.5	26.7 (1997)	19.7 (2007)	-7.0	Yes	-26.2%
c. 85+ years	75.6%	26.5	52.7 (1997)	32.9 (2007)	-19.8	Yes	-37.6%
12-7. Stroke deaths (age adjusted, per 100,000 population)	166.7%	50	62 (1999)	42 (2007)	-20	Yes	-32.3%
12-8. Knowledge of stroke symptoms (age adjusted, 20+ years)		65%	60% (2001)	54% (2009)	-6	Yes	-10.0%
12-9. High blood pressure (age adjusted, 18+ years)		14%	25% (1988–94)	30% (2005–08)	5	Yes	20.0%
12-10. High blood pressure control (age adjusted, 18+ years)	44.2%	68%	25% (1988–94)	44% (2005–08)	19	Yes	76.0%
12-11. Taking action to help control blood pressure (age adjusted, 18+ years)	50.0%	98%	84% (1998)	91% (2008)	7	Yes	8.3%
12-12. Adults who had their blood pressure measured in past 2 years and know their blood pressure level (age adjusted, 18+ years)	20.0%	95%	90% (1998)	91% (2008)	1	Yes	1.1%
12-13. Mean total blood cholesterol levels (mg/dL, age adjusted, 20+ years)	114.3%	199	206 (1988–94)	198 (2005–08)	-8	Yes	-3.9%
12-14. High blood cholesterol levels (age adjusted, 20+ years)	150.0%	17%	21% (1988–94)	15% (2005–08)	-6	Yes	-28.6%
12-15. Blood cholesterol screening in past 5 years (age adjusted, 18+ years)	61.5%	80%	67% (1998)	75% (2008)	8	Yes	11.9%

Figure 12-1. Progress Toward Target Attainment for Focus Area 12: Heart Disease and Stroke (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 12-3a, 12-3b, 12-5, and 12-16.

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

DATA SOURCES

12-1.	National Vital Statistics System—Mortality (NVSS-M), CDC, NCHS.
12-2.	National Health Interview Survey (NHIS), CDC, NCHS.
12-4.	National Health Interview Survey (NHIS), CDC, NCHS.
12-6a–c.	National Hospital Discharge Survey (NHDS), CDC, NCHS.
12-7.	National Vital Statistics System—Mortality (NVSS-M), CDC, NCHS.
12-8.	National Health Interview Survey (NHIS), CDC, NCHS.
12-9–12-10.	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
12-11–12-12.	National Health Interview Survey (NHIS), CDC, NCHS.
12-13–12-14.	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
12-15.	National Health Interview Survey (NHIS), CDC, NCHS.

Figure 12-2. Health Disparities Table for Focus Area 12: Heart Disease and Stroke

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.

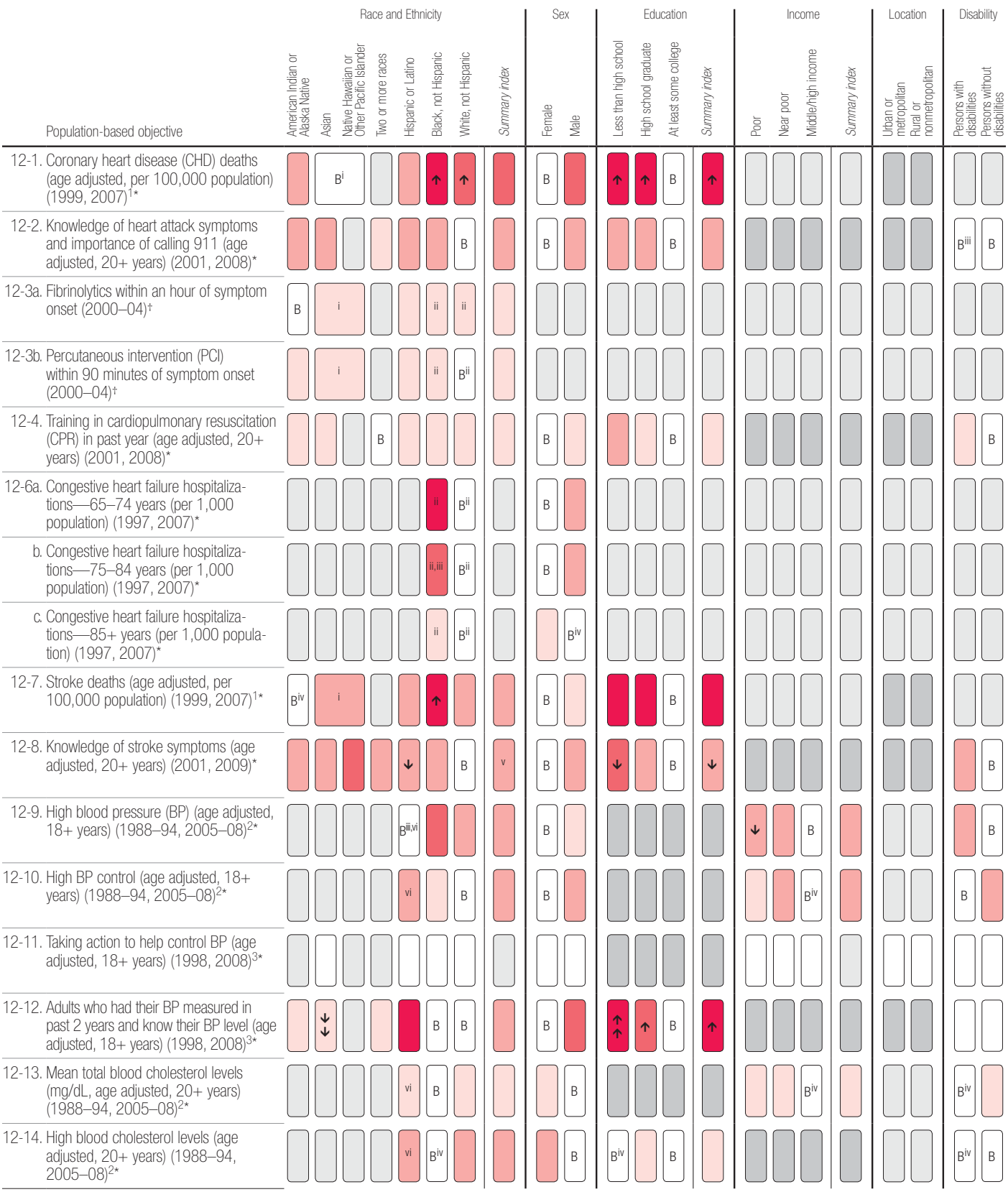
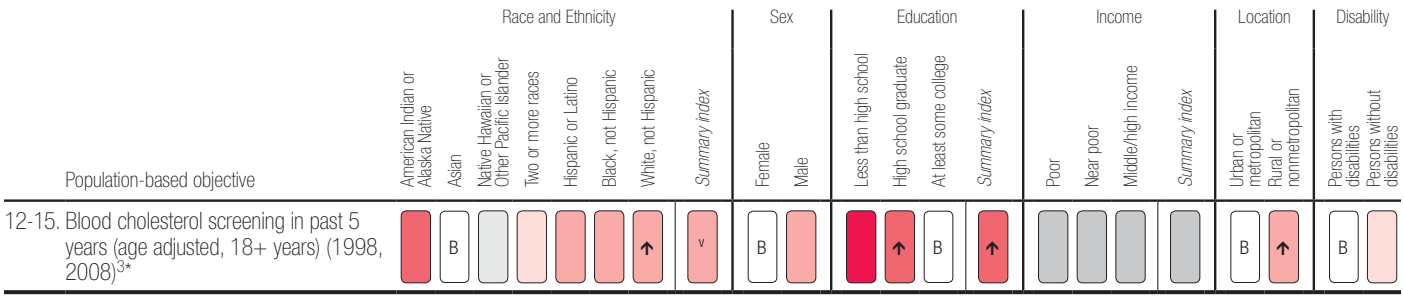


Figure 12-2. Health Disparities Table for Focus Area 12: Heart Disease and Stroke (continued)



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 12-5 and 12-16.

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.

- B — The group with the best rate for specified characteristic.
- b — 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 education level are for 2002.

[2] Baseline data by disability status are for 1991–94.

[3] Baseline data by race and ethnicity are for 2003.

[i] Data are for Asian or Pacific Islander.

[ii] Data include persons of Hispanic origin.

[iii] 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.

Figure 12-2. Health Disparities Table for Focus Area 12: Heart Disease and Stroke (continued)

[iv] 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.

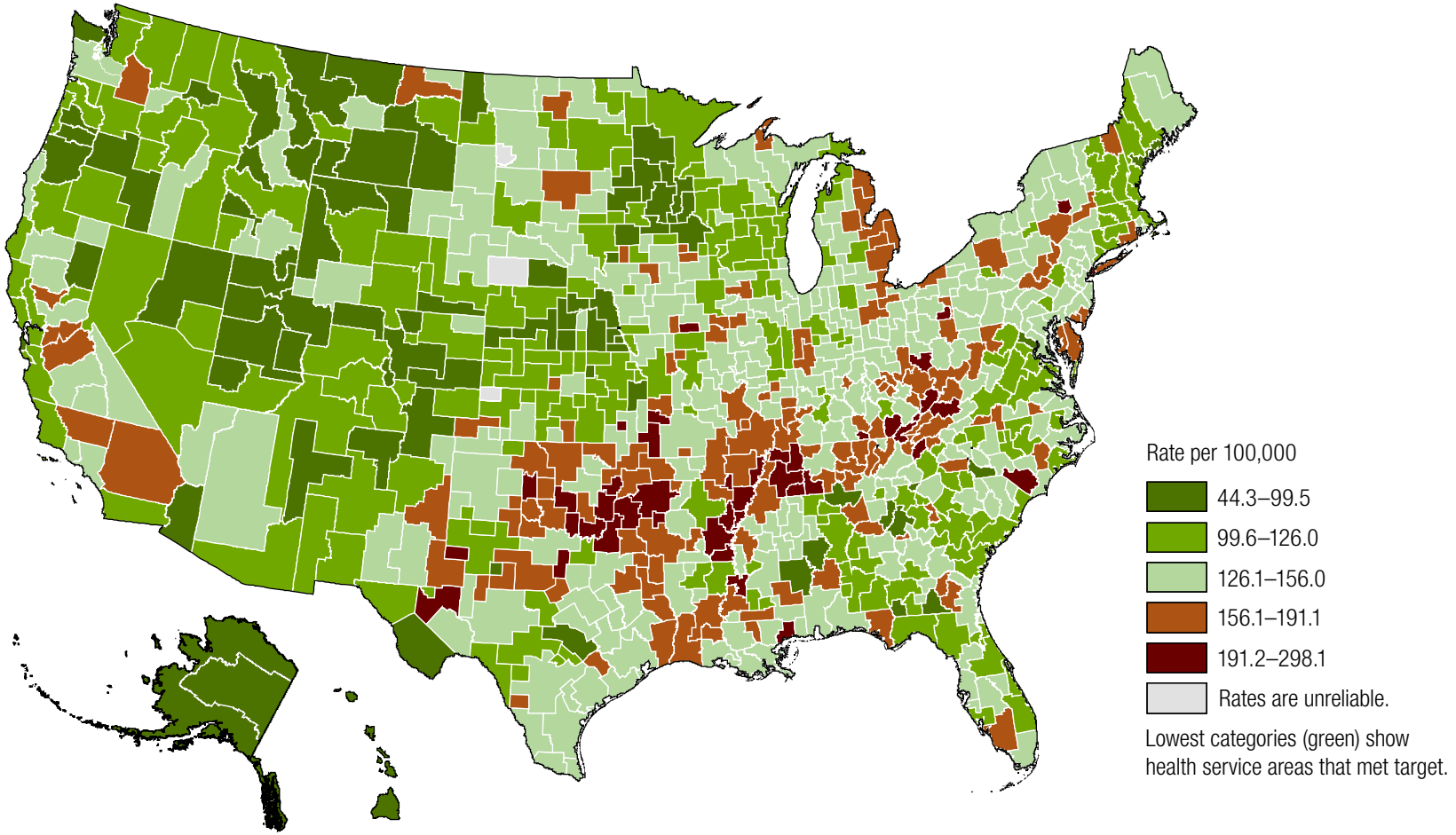
[v] Change in the summary index cannot be assessed. See Technical Appendix.

[vi] Data are for Mexican American.

DATA SOURCES

12-1.	National Vital Statistics System—Mortality (NVSS-M), CDC, NCHS.
12-2.	National Health Interview Survey (NHIS), CDC, NCHS.
12-3a–b.	National Registry of Myocardial Infarction (NRMI-4), National Acute Myocardial Infarction Project, CMS.
12-4.	National Health Interview Survey (NHIS), CDC, NCHS.
12-6a–c.	National Hospital Discharge Survey (NHDS), CDC, NCHS.
12-7.	National Vital Statistics System—Mortality (NVSS-M), CDC, NCHS.
12-8.	National Health Interview Survey (NHIS), CDC, NCHS.
12-9–12-10.	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
12-11–12-12.	National Health Interview Survey (NHIS), CDC, NCHS.
12-13–12-14.	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
12-15.	National Health Interview Survey (NHIS), CDC, NCHS.

Figure 12-3. Coronary Heart Disease Deaths, 2005–07
Healthy People 2010 objective 12-1 • Target = 156 per 100,000

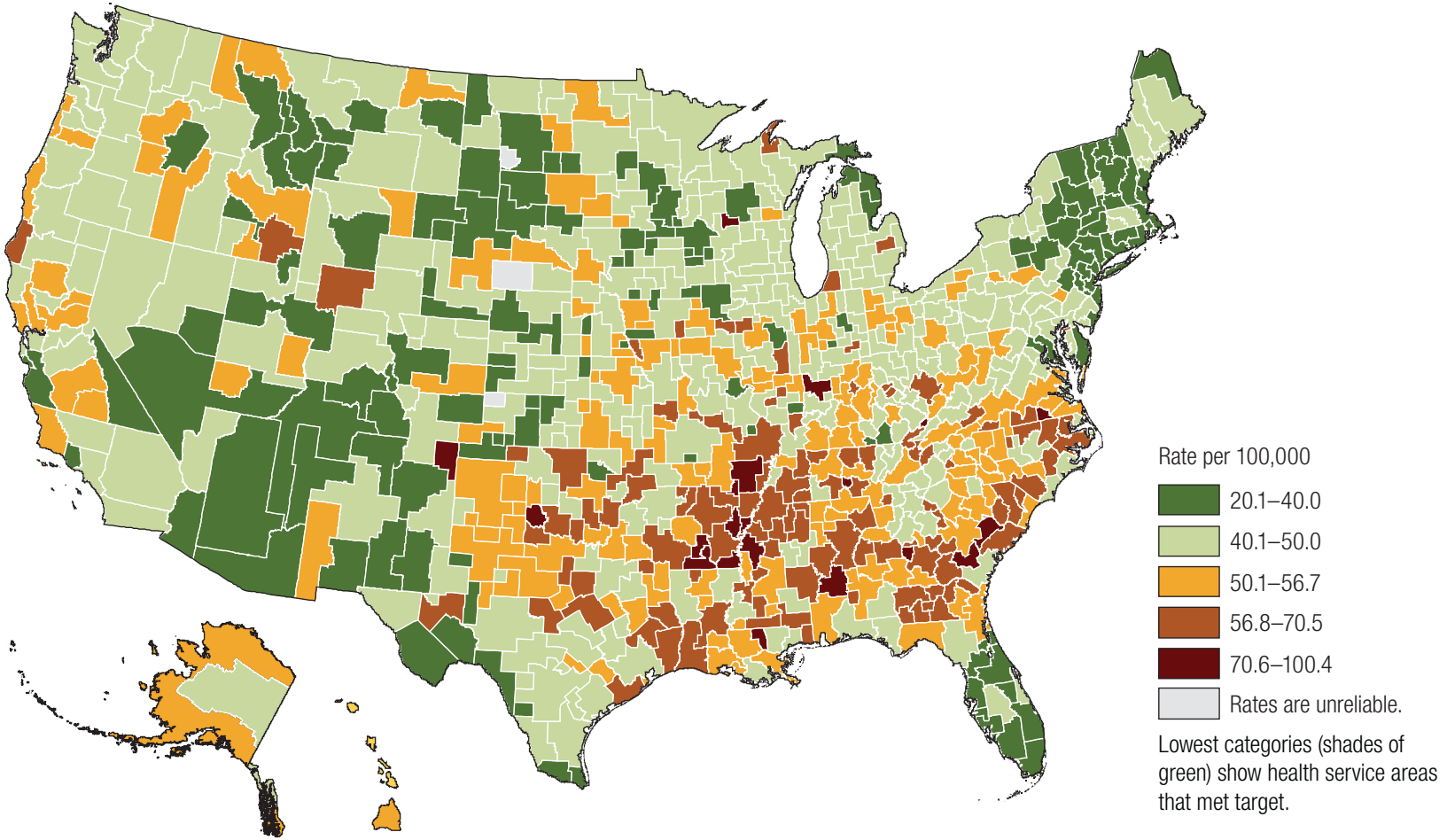


NOTES: Data are for ICD-10 codes I20–I25 reported as underlying cause. Rates are age adjusted to the 2000 standard population and are displayed by a modified Jenks classification for U.S. health service areas.

SOURCE: National Vital Statistics System—Mortality (NVSS-M), CDC, NCHS.

Figure 12-4. Stroke Deaths, 2005–07

Healthy People 2010 objective 12-7 • Target = 50 per 100,000



NOTES: Data are for ICD-10 codes I60–I69 reported as underlying cause. Rates are age adjusted to the 2000 standard population and are displayed by a modified Jenks classification for U.S. health service areas.

SOURCE: National Vital Statistics System—Mortality (NVSS-M), CDC, NCHS.