

12

Heart Disease and Stroke

Heart Disease

- 12-1 Coronary heart disease (CHD) deaths
- 12-2 Knowledge of symptoms of heart attack and importance of calling 911
- 12-3 Artery-opening therapy
- 12-4 Bystander response to cardiac arrest
- 12-5 Out-of-hospital emergency care
- 12-6 Heart failure hospitalizations
 - 12-6a 65 to 74 years
 - 12-6b 75 to 84 years
 - 12-6c 85 years and older

Stroke

- 12-7 Stroke deaths
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Blood Pressure

- 12-9 High blood pressure
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- 12-12 Blood pressure monitoring

Cholesterol

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- 12-15 Blood cholesterol screening
- 12-16 LDL-cholesterol level in CHD patients

Heart Disease

12-1. Reduce coronary heart disease deaths.

National Data Source	National Vital Statistics System (NVSS), CDC, NCHS.
State Data Source	National Vital Statistics System (NVSS), CDC, NCHS.
Healthy People 2000 Objective	15.1 (Heart Disease and Stroke) (also, 1.1, 2.1, 3.1), age adjusted to the 2000 standard population.
Measure	Rate per 100,000 population (age adjusted—see Comments).
Baseline	208 (1998).
Numerator	Number of coronary heart disease-related deaths (ICD-9 codes 402, 410-414, 429.2).
Denominator	Number of persons.
Population Targeted	U.S. resident population.
Questions Used To Obtain the National Data	Not applicable.
Expected Periodicity	Annual.
Comments	<p>Data are age adjusted to the 2000 standard population. Age-adjusted rates are weighted sums of age-specific rates. For information on age adjustment, see Part A, section 5.</p> <p>This objective differs from Healthy People 2000 objective 15.1, which adjusted the death rates using the 1940 standard population. See Appendix C for comparison data.</p> <p>See Part C for a description of NVSS and Appendix A for focus area contact information.</p>



12-2. (Developmental) Increase the proportion of adults aged 20 years and older who are aware of the early warning symptoms and signs of a heart attack and the importance of accessing rapid emergency care by calling 911.

Comments

An operational definition could not be specified at the time of publication.

A proposed national data source is the National Health Interview Survey (NHIS), CDC, NCHS.

Proposed questions to be used to obtain the national data are scheduled to be included in the 2001 NHIS.

See Appendix A for focus area contact information.



12-3. (Developmental) Increase the proportion of eligible patients with heart attacks who receive artery-opening therapy within an hour of symptom onset.

Comments

An operational definition could not be specified at the time of publication.

A proposed national data source is the National Registry of Myocardial Infarction, National Acute Myocardial Infarction Project, HCFA.

See Appendix A for focus area contact information.



12-4. (Developmental) Increase the proportion of adults aged 20 years and older who call 911 and administer cardiopulmonary resuscitation (CPR) when they witness an out-of-hospital cardiac arrest.

Comments

An operational definition could not be specified at the time of publication.

A proposed national data source is the National Health Interview Survey (NHIS), CDC, NCHS.

Proposed questions to be used to obtain the national data are scheduled to be included in the 2001 NHIS.

See Appendix A for focus area contact information.



12-5. (Developmental) Increase the proportion of eligible persons with witnessed out-of-hospital cardiac arrest who receive their first therapeutic electrical shock within 6 minutes after collapse recognition.

Comments

An operational definition could not be specified at the time of publication.

A proposed national data source is the Medical Expenditure Panel Survey (MEPS), AHRQ (formerly AHCPR).

See Appendix A for focus area contact information.



12-6. Reduce hospitalizations of older adults with congestive heart failure as the principal diagnosis.

12-6a. Adults aged 65 to 74 years.

National Data Source National Hospital Discharge Survey (NHDS), CDC, NCHS.

State Data Source State hospital discharge data systems.

Healthy People 2000 Objective Not applicable.

Measure Rate per 1,000 population.

Baseline 13.2 (1997).

Numerator	Number of discharges among adults aged 65 to 74 years with a principal diagnosis of congestive heart failure (ICD-9-CM code 428.0).
Denominator	Number of adults aged 65 to 74 years.
Population Targeted	U.S. civilian population.
Questions Used To Obtain the National Data	Not applicable.
Expected Periodicity	Annual.
Comments	Principal diagnosis is the diagnosis chiefly responsible for admission of the person to the hospital. See Part C for a description of NHDS and Appendix A for focus area contact information.



12-6b. Adults aged 75 to 84 years.

National Data Source	National Hospital Discharge Survey (NHDS), CDC, NCHS.
State Data Source	State hospital discharge data systems.
Healthy People 2000 Objective	Not applicable.
Measure	Rate per 1,000 population.
Baseline	26.7 (1997).
Numerator	Number of discharges among adults aged 75 to 84 years with a principal diagnosis of congestive heart failure (ICD-9-CM code 428.0).
Denominator	Number of adults aged 75 to 84 years.
Population Targeted	U.S. civilian population.
Questions Used To Obtain the National Data	Not applicable.
Expected Periodicity	Annual.

Comments See Comments provided with objective 12-6a for more information.



12-6c. Adults aged 85 years and older.

National Data Source National Hospital Discharge Survey (NHDS), CDC, NCHS.

State Data Source State hospital discharge data systems.

Healthy People 2000 Objective Not applicable.

Measure Rate per 1,000 population.

Baseline 52.7 (1997).

Numerator Number of discharges among adults aged 85 years and older with a principal diagnosis of congestive heart failure (ICD-9-CM code 428.0).

Denominator Number of adults aged 85 years and older.

Population Targeted U.S. civilian population.

Questions Used To Obtain the National Data Not applicable.

Expected Periodicity Annual.

Comments See Comments provided with objective 12-6a for more information.



Stroke

12-7. Reduce stroke deaths.

National Data Source National Vital Statistics System (NVSS), CDC, NCHS.

State Data Source National Vital Statistics System (NVSS), CDC, NCHS.

Healthy People 2000 Objective	15.2 (Heart Disease and Stroke) (also 2.22, 3.18), age adjusted to the 2000 standard population.
Measure	Rate per 100,000 population (age adjusted—see Comments).
Baseline	60 (1998).
Numerator	Number of stroke deaths (ICD-9 codes 430-438).
Denominator	Number of persons.
Population Targeted	U.S. resident population.
Questions Used To Obtain the National Data	Not applicable.
Expected Periodicity	Annual.
Comments	<p>Data are age adjusted to the 2000 standard population. Age-adjusted rates are weighted sums of age-specific rates. For information on age adjustment, see Part A, section 5.</p> <p>This objective differs from Healthy People 2000 objective 15.2, which adjusted the death rates using the 1940 standard population. See Appendix C for comparison data.</p> <p>See Part C for a description of NVSS and Appendix A for focus area contact information.</p>



12-8. (Developmental) Increase the proportion of adults who are aware of the early warning symptoms and signs of a stroke.

Comments	<p>An operational definition could not be specified at the time of publication.</p> <p>A proposed national data source is the National Health Interview Survey (NHIS), CDC, NCHS.</p> <p>Proposed questions to be used to obtain the national data are scheduled to be included in the 2001 NHIS.</p> <p>See Appendix A for focus area contact information.</p>
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Blood Pressure

12-9. Reduce the proportion of adults with high blood pressure.

National Data Source	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
State Data Source	Not identified.
Healthy People 2000 Objective	Not applicable.
Measure	Percent (age adjusted—see Comments).
Baseline	28 (1988–94).
Numerator	Number of adults aged 20 years and older with high blood pressure.
Denominator	Number of adults aged 20 years and older.
Population Targeted	U.S. civilian, noninstitutionalized population.
Questions Used To Obtain the National Data	From the 1988–94 National Health and Nutrition Examination Survey: ➤ <i>Are you now taking prescribed medicine?</i>
Expected Periodicity	Annual, beginning with 1999 data.
Comments	<p>Adults are defined as having high blood pressure if they either: (a) have a measurement of systolic blood pressure (SBP) > 140 mmHg or diastolic blood pressure (DBP) > 90 mmHg or (b) report they are taking high blood pressure medicine.</p> <p>Measurements were taken using a sphygmomanometer according to the standardized blood pressure measurement protocols recommended by the American Heart Association.¹</p> <p>A detailed description of the procedures for blood pressure measurement in the NHANES has been published elsewhere.^{2,3}</p> <p>Data are age adjusted to the 2000 standard population. Age-adjusted percents are weighted sums of age-specific percents. For information on age adjustment, see Part A, section 5.</p>

See Part C for a description of NHANES and Appendix A for focus area contact information.



12-10. Increase the proportion of adults with high blood pressure whose blood pressure is under control.

National Data Source	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
State Data Source	Not identified.
Healthy People 2000 Objective	15.4 (Heart Disease and Stroke) (also 2.26), age adjusted to the 2000 standard population.
Measure	Percent (age adjust—see Comments).
Baseline	18 (1988–94).
Numerator	Number of adults aged 18 years and older who have been told by a doctor or other health professional to take prescribed blood pressure medicine and are now taking it and whose systolic blood pressure is less than 140 mmHg and diastolic blood pressure is less than 90 mmHg.
Denominator	Number of adults with high blood pressure aged 18 years and older.
Population Targeted	U.S. civilian, noninstitutionalized population.
Questions Used To Obtain the National Data	From the 1988–94 National Health and Nutrition Examination Survey: <ul style="list-style-type: none">➤ <i>Because of your high blood pressure/hypertension, have you ever been told by a doctor or other health professional to take prescribed medicine?</i>➤ <i>Are you now taking prescribed medicine?</i>
Expected Periodicity	Annual beginning with 1999 data.
Comments	See Comments provided with objective 12-9.



12-11. Increase the proportion of adults with high blood pressure who are taking action (for example, losing weight, increasing physical activity, or reducing sodium intake) to help control their blood pressure.

National Data Source	National Health Interview Survey (NHIS), CDC, NCHS.
State Data Source	Behavioral Risk Factor Surveillance System (BRFSS), CDC, NCCDPHP.
Healthy People 2000 Objective	Adapted from 15.5 (Heart Disease and Stroke).
Measure	Percent (age adjusted—see Comments).
Baseline	82 (1998).
Numerator	Number of adults aged 18 years and older with high blood pressure who are dieting, reducing salt or sodium intake, exercising, reducing alcohol consumption or taking high blood pressure medications.
Denominator	Number of adults with high blood pressure aged 18 years and older.
Population Targeted	U.S. civilian, noninstitutionalized population.
Questions Used To Obtain the National Data	From the 1998 National Health Interview Survey: [NUMERATOR:] <ul style="list-style-type: none">➤ <i>Has a doctor or other health professional EVER advised you to go on a diet or change your eating habits to help lower your blood pressure?</i> [If yes:]<ul style="list-style-type: none">○ <i>Are you NOW following this advice?</i>➤ <i>Has a doctor or other health professional EVER advised you to cut down on salt or sodium in your diet to help lower your blood pressure?</i> [If yes:]<ul style="list-style-type: none">○ <i>Are you NOW following this advice?</i>➤ <i>Has a doctor or other health professional EVER advised you to reduce alcohol consumption to help lower your blood pressure?</i>

[If yes:]

- *Are you NOW following this advice?*

- *Has a doctor or other health professional EVER advised you to exercise to help lower your blood pressure?*

[If yes:]

- *Are you NOW following this advice?*

- *Was any medication EVER prescribed by a doctor to help lower your blood pressure?*

[If yes:]

- *Are you NOW following this advice?*

[DENOMINATOR:]

- *Were you told on two or more DIFFERENT visits that you had hypertension, also called high blood pressure?*

[If yes:]

- *Was this only during pregnancy?*

Expected Periodicity

Periodic.

Comments

People with high blood pressure are defined as those who are told on two or more occasions by a physician or other health professional that they had high blood pressure. Pregnancy-related high blood pressure is excluded.

Adults are classified as taking action to control their blood pressure if they are now following advice on any of the actions listed above: diet/change eating habits, cut down on salt intake, reduce alcohol consumption, exercise, or take medication.

Data are age adjusted to the 2000 standard population. Age-adjusted percents are weighted sums of age-specific percents. For information on age adjustment, see Part A, section 5.

This objective is adapted from Healthy People 2000 objective 15.5, which tracked the proportion of people with high blood pressure who were taking medication, dieting to lose weight, cutting down on salt, and exercising to help control their blood pressure. This measure tracks the proportion of adults with high blood pressure who are reducing alcohol consumption, in addition to the other actions, to help control their blood pressure; the measure is age adjusted to the 2000 standard population.

In Healthy People 2000, a person with high blood pressure was defined as "...EVER been told by a doctor or other health professional that you had hypertension, also called high blood pressure" while in Healthy People 2010, a person is defined as "...told on two or more DIFFERENT visits that you had high blood pressure."

See Part C for a description of NHIS and BRFSS, and Appendix A for focus area contact information.



12-12. Increase proportion of adults who have had their blood pressure measured within the preceding 2 years and can state whether their blood pressure was normal or high.

National Data Source	National Health Interview Survey (NHIS), CDC, NCHS.
State Data Source	Not identified.
Healthy People 2000 Objective	15.13 (Heart Disease and Stroke), age adjusted to the 2000 standard population.
Measure	Percent (age adjusted—see Comments).
Baseline	90 (1998).
Numerator	Number of adults aged 18 years and older who had their blood pressure measured within the preceding 2 years and can state level.
Denominator	Number of adults aged 18 years and older.

Population Targeted

U.S. civilian, noninstitutionalized population.

Questions Used To Obtain the National Data

From the 1998 National Health Interview Survey:

➤ *About how long has it been since you had your blood pressure checked by a doctor or health professional?*

- 0) *Never*
(Number) _____ *Days*
- _____ *Weeks*
- _____ *Months*
- _____ *Years*

➤ *At that time, did the doctor or health professional say your blood pressure was high, low, or normal?*

- 1) *Not told*
- 2) *High*
- 3) *Low*
- 4) *Normal*
- 5) *Borderline*
- 6) *Other - Specify* _____

Expected Periodicity

Periodic.

Comments

An adult was considered able to state their blood pressure level if they responded high, low, normal, or borderline (categories 2-5) to the second question above.

Data are age adjusted to the 2000 standard population. Age-adjusted percents are weighted sums of age-specific percents. For information on age adjustment, see Part A, section 5.

See Part C for a description of NHIS and Appendix A for focus area contact information.



Cholesterol

12-13. Reduce the mean total blood cholesterol levels among adults.

National Data Source

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

State Data Source

Not identified.

Healthy People 2000 Objective	15.6 (Heart Disease and Stroke) (also 2.27), age adjusted to the 2000 standard population).
Measure	Mean (age adjusted—see Comments).
Baseline	206 (1988–94).
Numerator	Sum of all cholesterol values for adults aged 20 years and older.
Denominator	Number of cholesterol measurements for adults aged 20 years and older.
Population Targeted	U.S. civilian, noninstitutionalized population.
Questions Used To Obtain the National Data	Not applicable.
Expected Periodicity	Annual beginning with 1999 data.
Comments	<p>Total cholesterol is a combination of high-density lipoproteins (HDL), low-density lipoproteins (LDL), and very-low density lipoproteins (VLDL).</p> <p>Total blood cholesterol is measured enzymatically in a series of coupled reactions. A description of the laboratory procedures for the total cholesterol measurement in NHANES is published by NCHS.^{4, 5}</p> <p>Data are age adjusted to the 2000 standard population. Age-adjusted percents are weighted sums of age-specific percents. For information on age adjustment, see Part A, section 5.</p> <p>See Part C for a description of NHANES and Appendix A for focus area contact information.</p>



12-14. Reduce the proportion of adults with high total blood cholesterol levels.

National Data Source	National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.
State Data Source	Not identified.
Healthy People 2000 Objective	15.7 (Heart Disease and Stroke) (also 2.25), age adjusted to the 2000 standard population.

Measure	Percent (age adjusted—see Comments).
Baseline	21 (1988–94).
Numerator	Number of adults aged 20 years and older with total blood cholesterol > 240 mg/dL.
Denominator	Number of adults aged 20 years and older.
Population Targeted	U.S. civilian, noninstitutionalized population.
Questions Used To Obtain the National Data	Not applicable.
Expected Periodicity	Annual, beginning with 1999 data.
Comments	<p>Total cholesterol is a combination of HDL, LDL, and VLDL.</p> <p>Total blood cholesterol is measured enzymatically in a series of coupled reactions. A description of the procedures for the total cholesterol measurement in NHANES has been published by NCHS.^{4, 5}</p> <p>Blood cholesterol levels less than 200 mg/dL are considered desirable. Levels of 240 mg/dL or above are considered high. Levels of 200-239 mg/dL are considered borderline.</p> <p>Data are age adjusted to the 2000 standard population. Age-adjusted percents are weighted sums of age-specific percents. For information on age adjustment, see Part A, section 5.</p> <p>See Part C for a description of NHANES and Appendix A for focus area contact information.</p>



12-15. Increase the proportion of adults who have had their blood cholesterol checked within the preceding 5 years.

National Data Source	National Health Interview Survey (NHIS), CDC, NCHS.
State Data Source	Behavioral Risk Factor Surveillance System (BRFSS), CDC, NCCDPHP.

Healthy People 2000 Objective	15.14 (Heart Disease and Stroke), age adjusted to the 2000 standard population.
Measure	Percent (age adjusted—see Comments).
Baseline	67 (1998).
Numerator	Number of adults aged 18 years and older who have had their cholesterol checked within 5 years.
Denominator	Number of adults aged 18 years and older.
Population Targeted	U.S. civilian, noninstitutionalized population.
Questions Used To Obtain the National Data	<p>From the 1998 National Health Interview Survey:</p> <p>➤ <i>When was the last time that you had your blood cholesterol level checked by a doctor or health professional?</i></p> <p><i>0) Never</i></p> <p><i>1) A year ago or less</i></p> <p><i>2) More than 1 year but not more than 2 years</i></p> <p><i>3) More than 2 years but not more than 3 years</i></p> <p><i>4) More than 3 years but not more than 5 years</i></p> <p><i>5) Over 5 years</i></p>
Expected Periodicity	Periodic.
Comments	<p>An adult was considered as having had their blood cholesterol checked within the preceding 5 years if they responded to <u>any</u> of the categories in 1 through 4 of the question above.</p> <p>Data are age adjusted to the 2000 standard population. Age-adjusted percents are weighted sums of age-specific percents. For information on age adjustment, see Part A, section 5.</p> <p>See Part C for a description of NHIS and BRFSS and Appendix A for focus area contact information.</p>



12-16. (Developmental) Increase the proportion of persons with coronary heart disease who have their LDL-cholesterol level treated to a goal of less than or equal to 100 mg/dL.

Comments

An operational definition could not be specified at the time of publication.

A proposed data source is the National Health and Nutrition Examination Survey (NHANES), CDC, NCHS.

See Appendix A for focus area contact information.



References

1. U.S. Department of Health and Human Services (HHS), National Center for Health Statistics (NCHS). *Third National Health and Nutrition Examination Survey, 1998–1994*, NHANES III Adult Household Questionnaire Data Files (CD-ROM). Public Use Data File Documentation No. 76200. Hyattsville, MD: Centers for Disease Control and Prevention (CDC), 1996.
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3. Frohlich, E.D.; Grim, C.; Labarthe, D.R.; et al. Recommendations for human blood pressure determination by sphygmomanometer. *Hypertension* 11:210A-222A, 1988.
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5. Gunter, E.W.; Lewis, B.G.; and Koncikowski, S.M. *Laboratory Procedures Used for the Third National Health and Nutrition Examination Survey (NHANES III), 1988–94*. HHS, Public Health Service, CDC, 1996.