

Chapter 2. Quality of Health Care

As better understanding of health and sickness has led to superior ways of preventing, diagnosing, and treating diseases, the health of most Americans has improved dramatically. However, ample evidence indicates that some Americans do not receive the full benefits of high quality care. Specifically, extensive disparities in health care related to race, ethnicity, and socioeconomic status have been demonstrated by a substantial body of public health, social science, and health services research and confirmed by previous releases of the National Healthcare Disparities Report.

Components of Health Care Quality

Quality health care means doing the right thing, at the right time, in the right way, for the right people—and having the best possible results.¹ Quality health care is care that is:²

- **Effective**—Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit.
- **Safe**—Avoiding injuries to patients from the care that is intended to help them.
- **Timely**—Reducing waits and sometimes harmful delays for both those who receive and those who give care.
- **Patient centered**—Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.
- **Equitable**—Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status.
- **Efficient**—Avoiding waste, including waste of equipment, supplies, ideas, and energy.

Health care quality is measured in several ways including:

- **Clinical performance** measures of how well providers deliver specific services needed by specific patients, such as whether children get the immunizations that they need.
- **Assessments by patients** of how well providers meet health care needs from the patient’s perspective, such as whether providers communicate clearly.
- **Outcome measures**—such as death rates from cancers preventable by screening—that may be affected by the quality of health care received.

How This Chapter Is Organized

This chapter presents new information about disparities in the quality of health care in America. The measures used here are the same as those used in the National Healthcare Quality Report (NHQR), and this chapter is constructed to mirror sections in the NHQR—effectiveness, patient safety, timeliness, and patient centeredness. Due to constraints on the length of this report, only a subset of the core measures is presented. Effectiveness of care is presented in Chapter 2 under eight clinical condition or care setting areas: cancer; diabetes; end stage renal disease (ESRD); heart disease; HIV and AIDS; mental health and substance abuse; respiratory diseases; and nursing home, home health, and hospice care. Maternal and child health is discussed in Chapter 4, Priority Populations.

As in previous NHDRs, this chapter's discussion on quality of care focuses on disparities in quality related to race, ethnicity, and socioeconomic status in the general U.S. population. Disparities in quality of care within specific priority populations are presented in Chapter 4. This chapter also presents analyses of changes over time by race, ethnicity, and socioeconomic status, as well as some stratified analyses.

Finally, new composite measures are introduced in this year's NHDR, including timing of antibiotics to prevent postoperative wound infection, communication with doctors in the hospital, communication with nurses in the hospital, communication about medications in the hospital, discharge information from the hospital, postoperative complications, and complications of central venous catheters. For composite details, see Chapter 1, Introduction and Methods.

Categorization of Effectiveness Measures by Health Care Need

In the effectiveness section of this chapter, measures are organized into several categories as related to the patient's need for preventive care, treatment of acute illness, and chronic disease management. There is sizable overlap among these categories, and some measures may be considered to belong in more than one category. Outcome measures are particularly difficult to categorize when prevention, treatment, and management all play important roles. Nevertheless, for the purposes of this report, measures are placed into categories that best fit the general descriptions below:

- **Prevention**—Caring for healthy people is an important component of health care. Educating people about healthy behaviors can help to postpone and avoid illness and disease. Additionally, detecting health problems at an early stage increases the chances of effectively treating them, often reducing suffering and expenditures.
- **Treatment**—Even when preventive care is ideally implemented, it cannot entirely avert the need for acute care. Delivering optimal treatments for acute illness can help reduce the consequences of illness and promote the best recovery possible.
- **Management**—Some diseases, such as diabetes and end stage renal disease, are chronic, which means they cannot simply be treated once; they must be managed across a lifetime. Management of chronic disease often involves lifestyle changes and regular contact with a provider to monitor the status of the disease. For patients, effective management of chronic disease can mean the difference between normal, healthy living and frequent medical problems.

Note that findings for women and children, which parallel those presented in the NHQR for maternal and child health, are presented in the sections on women and children in Chapter 4. Measures presented in effectiveness fall within the three components of health care need as listed below. (For findings related to all core measures of effectiveness, see Tables 2.1a and 2.1b.)

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Section	Measure
Prevention:	
Cancer (colorectal)	Screening for colorectal cancer
Heart disease	Counseling about overweight*
Heart disease	Counseling about exercise
Respiratory diseases	Pneumococcal vaccination
Maternal and child health (women)	Screening for colorectal cancer
Maternal and child health (women)	Prenatal care/maternal care
Maternal and child health (children)	Vaccinations
Maternal and child health (children)	Vision care
Maternal and child health (children)	Counseling about overweight*/healthy eating
Treatment:	
Heart disease	Recommended hospital care for heart failure
Mental health and substance abuse	Receipt of treatment for depression
Mental health and substance abuse	Treatment for illicit drug use
Respiratory diseases	Recommended hospital care for pneumonia
Nursing home, home health, and hospice care	Improved walking or moving
Nursing home, home health, and hospice care	Hospitalization of home care patients
Maternal and child health (women)	Recommended hospital care for heart attack
Maternal and child health (children)	Hospital admissions for gastroenteritis
Management:	
Diabetes	Receipt of recommended services for diabetes
Diabetes	Hemoglobin, cholesterol, blood pressure control*
End stage renal disease (ESRD)	Adequacy of hemodialysis
End stage renal disease (ESRD)	Registration for transplantation
HIV and AIDS	New AIDS cases
HIV and AIDS	PCP and MAC prophylaxis*
Respiratory diseases	Management of asthma for long-term control* ⁱ
Nursing home, home health, and hospice care	Use of physical restraints
Nursing home, home health, and hospice care	Presence of pressure sores
Nursing home, home health, and hospice care	Hospice care* ⁱⁱ
Maternal and child health (women)	New AIDS cases
Maternal and child health (children)	Hospital admissions for asthma*

* Supplemental measure

ⁱ This year's report includes four supplemental measures of asthma management from the National Asthma Survey as follows: counseling persons with asthma about recognizing an attack, counseling persons with asthma about changing their environment, use of a controller medication, and receipt of an asthma management plan.

ⁱⁱ This year's report includes two supplemental measures of hospice care from the National Hospice and Palliative Care Organization Family Evaluation of Hospice Care: hospice patients who did not receive the right amount of medicine for pain and hospice patients who did not receive end-of-life care consistent with their stated wishes.

Effectiveness

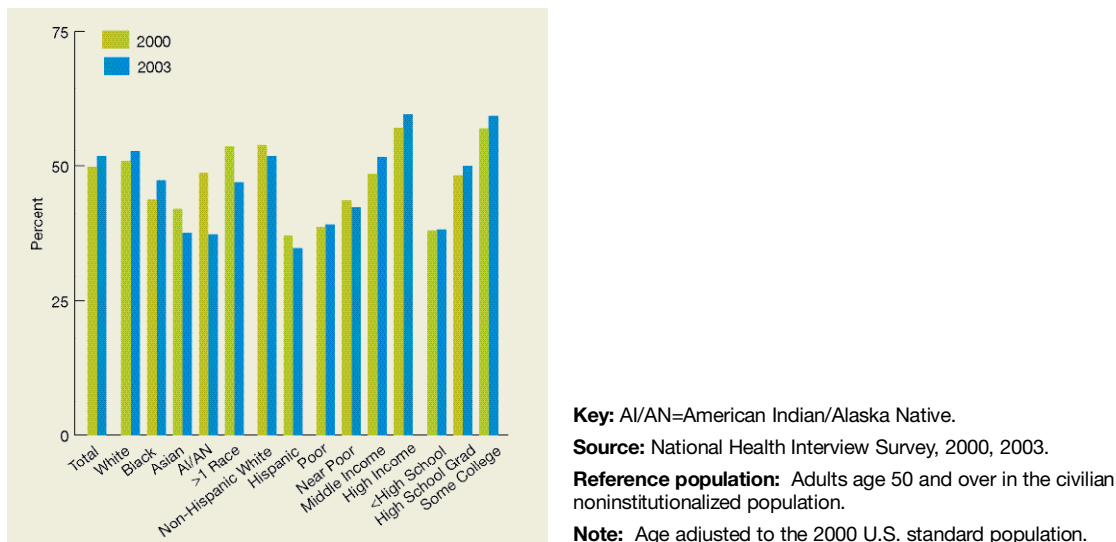
Cancer

Number of deaths (2006 est.)	564,830 ³
Cause of death rank (2003)	2nd ⁴
Number of Americans that have been diagnosed with cancer (2002 est.)	10,100,000 ³
New cases of cancer (2006 est.)	1,399,790 ³
New cases of colorectal cancer (2006 est.)	148,610 ³
Total cost ⁱⁱⁱ (2006)	\$206.3 billion ⁵
Direct costs ^{iv} (2006)	\$78.2 billion ⁵
Cost effectiveness ^v of colorectal cancer screening	\$0-\$14,000/QALY ⁶
Cost effectiveness of cervical cancer screening	\$14,000-\$35,000/QALY ⁶

Prevention: Screening for Colorectal Cancer

Ensuring that all populations have access to appropriate cancer screening services is a core element of reducing cancer health disparities.⁷ This year the NHDR focuses on colorectal cancer; findings for breast cancer are found in the 2005 NHDR. Screening for colorectal cancer—including fecal occult blood testing, sigmoidoscopy, colonoscopy, and proctoscopy—is an effective way of reducing new cases of late stage disease and mortality caused by this cancer.

Figure 2.1. Adults age 50 and over who report having ever received a sigmoidoscopy, colonoscopy, or proctoscopy or who report fecal occult blood test within the past 2 years by race, ethnicity, income, and education, 2000-2003



ⁱⁱⁱTotal cost is composed of the cost of medical care itself (direct cost) and the economic costs of morbidity and mortality (indirect cost).

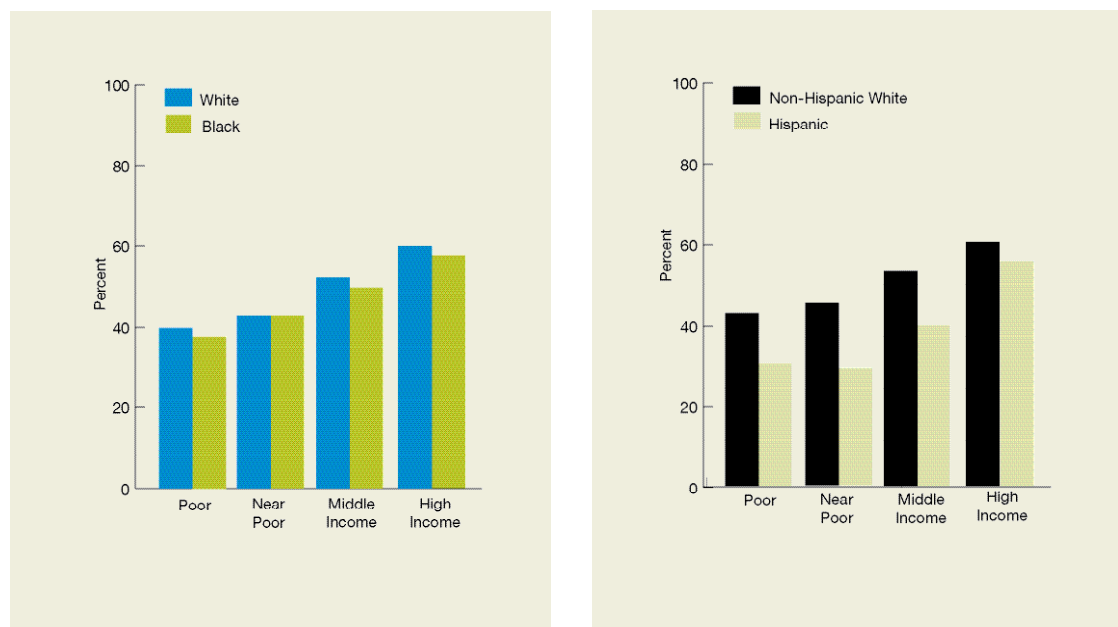
^{iv}Direct costs are defined as “personal health care expenditures for hospital and nursing home care, drugs, home care, and physician and other professional services.”⁵

^vCost effectiveness is measured here by the average net cost of each quality adjusted life year (QALY) that is saved by the provision of a particular health intervention. QALYs are a measure of a year of life adjusted for its value: 1 year in perfect health is equal to 1.0 QALY, and a year in poor health would be something less than 1.0. A lower cost per QALY saved indicates a greater degree of cost effectiveness.

- In both 2000 and 2003, the proportion of adults age 50 and over who had received recommended colorectal cancer screening was significantly lower among Blacks and Asians compared with Whites; among Hispanics compared with non-Hispanic Whites; among poor, near poor, and middle income persons than among high income persons; and among persons with a high school education or less compared with persons with any college education (Figure 2.1).
- From 2000 to 2003, the proportion of adults age 50 and over who had received recommended colorectal cancer screenings increased significantly for the total population, Whites, non-Hispanic Whites, middle income persons, high income persons, and persons with any college education.

Racial and ethnic minorities are disproportionately of lower socioeconomic status.^{vi,8} To distinguish the effects of race, ethnicity, income, and education on cancer screening, this measure is stratified by income and education level.

Figure 2.2. Adults age 50 and over who reported having ever received a sigmoidoscopy, colonoscopy, or proctoscopy, or a fecal occult blood test within the past 2 years by race (left) and ethnicity (right), stratified by income, 2003

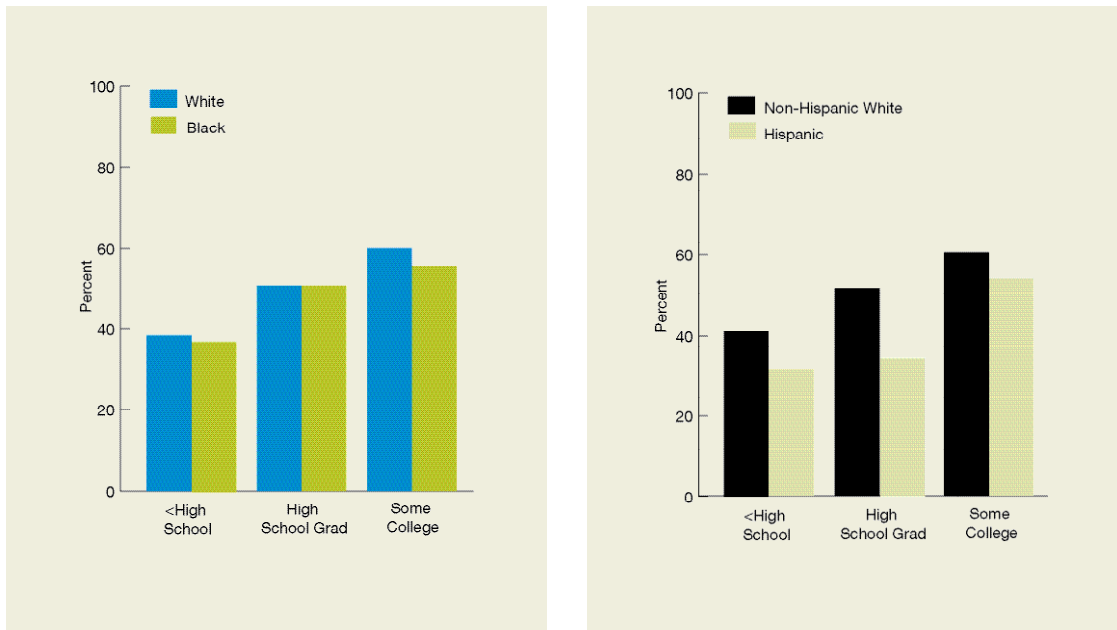


Source: National Health Interview Survey, 2003.

Reference population: Adults age 50 and over in the civilian noninstitutionalized population.

^{vi} As described in Chapter 1, Introduction and Methods, income and educational attainment are used to measure socioeconomic status in the NHDR.

Figure 2.3. Adults age 50 and over who reported having ever received a sigmoidoscopy, colonoscopy, or proctoscopy, or a fecal occult blood test within the past 2 years by race (left) and ethnicity (right), stratified by education, 2003



Source: National Health Interview Survey, 2003.

Reference population: Adults age 50 and over in the civilian noninstitutionalized population.

- Racial and ethnic differences in receipt of recommended colorectal screening vary with income and education level.
- After controlling for income, significant differences between Blacks and Whites are eliminated. Differences between high income Hispanics and non-Hispanic Whites are also eliminated, although differences for all other income groups persist (Figure 2.2).
- After controlling for education, significant differences between Blacks and Whites are eliminated. Differences between Hispanics with at least some college education and respective non-Hispanic Whites are also eliminated, although differences for all other education groups persist (Figure 2.3).

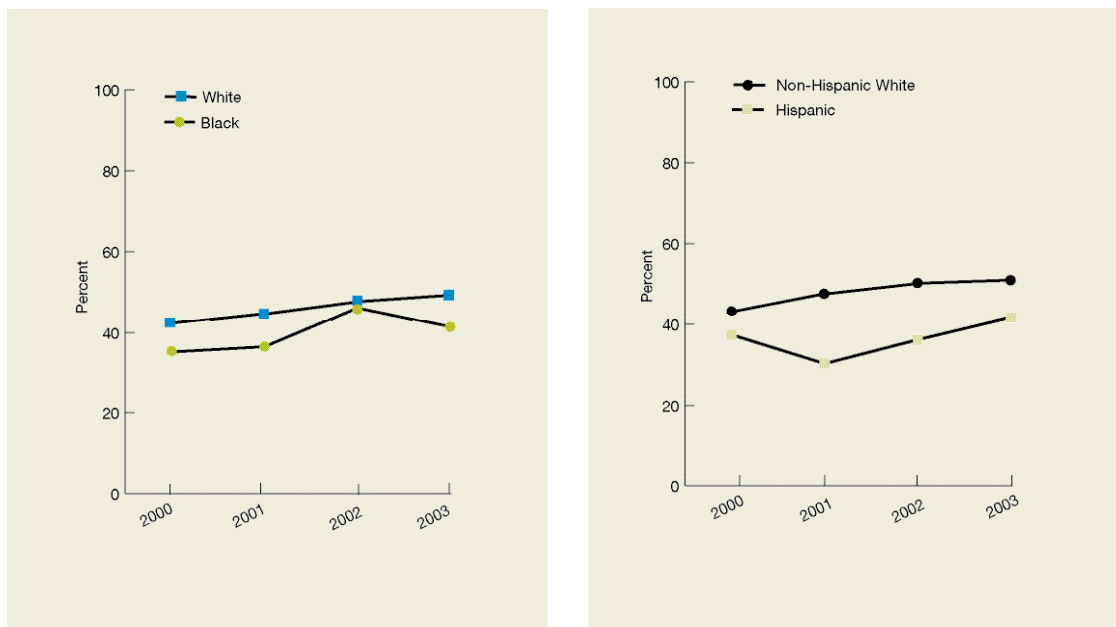
Diabetes

Number of deaths (2003)	73,965 ⁴
Cause of death rank (2003)	6th ⁴
Total number of Americans with diabetes (2005)	20,800,000 ⁹
New cases (age 20 and over, 2005).	1,500,000 ⁹
Total cost (2002).	\$132 billion ¹⁰
Direct medical costs (2002)	\$92 billion ¹⁰

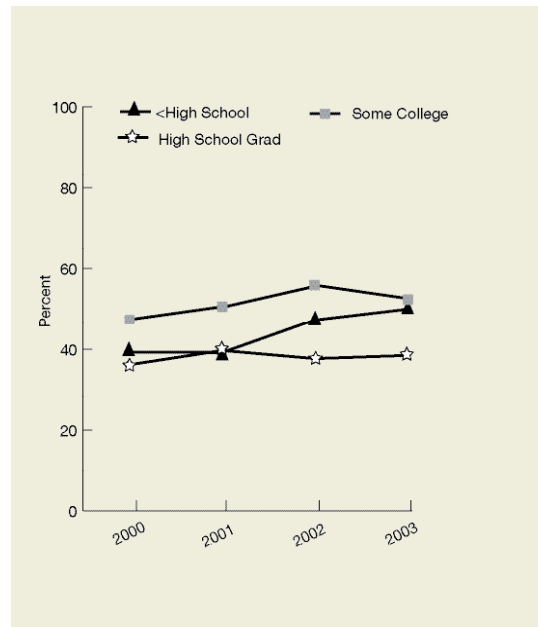
Management: Receipt of Recommended Services for Diabetes

Effective management of diabetes includes HbA1c^{vii} testing, eye examination, and foot examination in the past year, as well as appropriate influenza immunization and lipid management.^{11, 12, 13}

Figure 2.4. Adults age 40 and over with diabetes who had three recommended services for diabetes in the past year, by race (this page, left), ethnicity (this page, right), family income (next page, left), and education (next page, right), 2000-2003



^{vii} HbA1c is glycosylated hemoglobin and provides information about control of blood sugar levels.



Source: Medical Expenditure Panel Survey, 2000-2003.

Reference population: Civilian, noninstitutionalized population of adults age 40 and older.

Note: Recommended services for diabetes are: (1) HBA1c testing, (2) retinal eye examination, and (3) foot examination in past year. Data include persons with both type 1 and type 2 diabetes. Rate is age adjusted to the 2000 standard population.

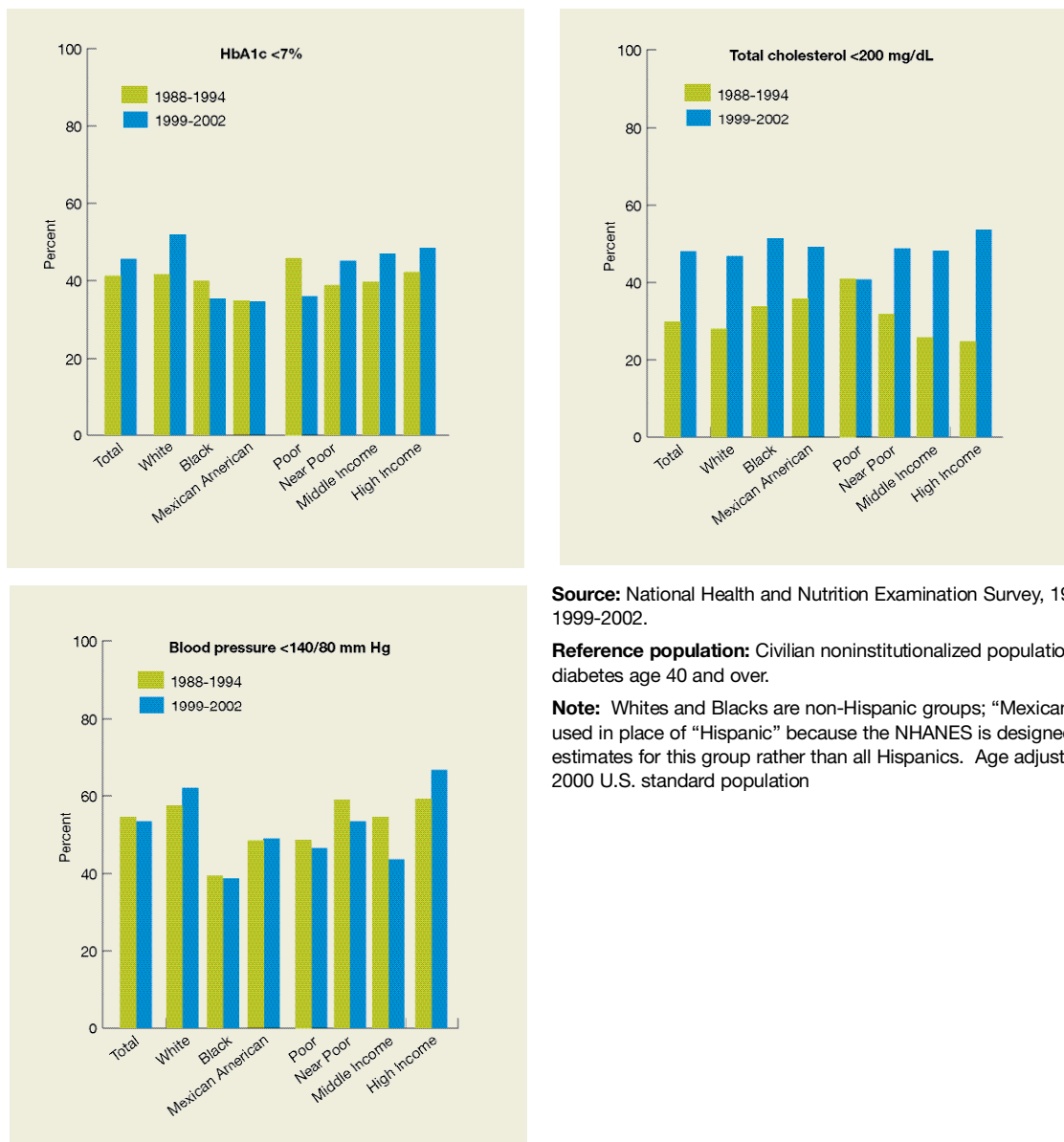
- In 2001, 2002, and 2003, the proportion of adults age 40 and over with diabetes who received three recommended services was significantly lower among Hispanics compared with non-Hispanic Whites (Figure 2.4).^{viii}
- In all 4 years, the proportion of adults age 40 and over with diabetes who received three recommended services was significantly lower among poor compared with high income adults.
- In 2002 and 2003, the proportion of adults age 40 and over with diabetes who received three recommended services was significantly lower among near poor and middle income adults compared with high income adults.
- In 3 of the 4 years, the proportion of adults age 40 and over with diabetes who received three recommended services was significantly lower among adults with a high school education or less compared with adults with any college education.
- In 2003, less than 35% of poor adults, less than 40% of near poor adults and almost 50% of adults age 40 and over with diabetes received the three recommended services compared with 60% of high income adults with diabetes.
- From 2000 to 2003, the proportion of adults age 40 and over with diabetes who received three recommended services increased significantly for the total U.S. population, Whites, non-Hispanic Whites, high income adults, and adults with a high school education. Although the 2002 and 2003 data show a decrease for Blacks, the poor, near poor, and persons with some college education, the trend is not statistically significant.

^{viii} For diabetes care findings for AI/ANs, see text on the focus on Indian Health Service facilities in Chapter 4, Priority Populations.

Management: Hemoglobin, Cholesterol, and Blood Pressure Under Control

People with diagnosed diabetes often have other cardiovascular risk factors such as high blood pressure and high cholesterol. The combination of these conditions with diabetes increases the likelihood of complications from diabetes, such as heart disease and stroke. Therefore, in addition to controlling blood sugar levels, diabetes management often includes treating high blood pressure and high cholesterol. HbA1c testing determines the average blood sugar level over 2-3 months and provides information about control of blood sugar levels. Checking blood pressure and cholesterol levels is also needed to assess control of these risk factors.^{ix}

Figure 2.5. Adults age 40 and over with diagnosed diabetes with HbA1c (top left), total cholesterol (top right), and blood pressure (bottom left) under control, by race/ethnicity and income, 1988-1994 and 1999-2002



Source: National Health and Nutrition Examination Survey, 1988-1994 and 1999-2002.

Reference population: Civilian noninstitutionalized population with diabetes age 40 and over.

Note: Whites and Blacks are non-Hispanic groups; “Mexican American” is used in place of “Hispanic” because the NHANES is designed to provide estimates for this group rather than all Hispanics. Age adjusted to the 2000 U.S. standard population

^{ix} Blood pressure control guidelines were updated in 2005. Previously, having a blood pressure reading of <140/90 mm Hg was considered under control. For this measure, the new threshold of <140/80 mm Hg has been applied to historical data for the sake of consistency and comparability.

- In 1999-2002, only 45.5% of adults with diagnosed diabetes had their HbA1c under optimal control (<7.0%), and the proportion was significantly lower among Blacks and Mexican Americans compared with Whites. No significant changes were observed in the proportion of adults with diagnosed diabetes with their HbA1c under control between the 1988-1994 and 1999-2002 time periods (Figure 2.5).
- In 1999-2002, only 48.1% of adults with diagnosed diabetes had their total cholesterol under control (<200 mg/dL). In 1988-1994, poor adults were significantly more likely than high income adults to have their cholesterol under control, but in 1999-2002 this disparity was eliminated. From 1988-1994 to 1999-2002, the proportion of adults with diagnosed diabetes who had their cholesterol under control increased significantly for all populations except poor adults.
- In 1999-2002, only 53.4% of adults with diagnosed diabetes had their blood pressure under control (<140/80 mm Hg based on average of three measurements). In 1999-2002, the proportion was significantly lower among Blacks and Mexican Americans compared with Whites and among poor and middle income adults compared with high income adults. In 1988-1994, the proportion was significantly lower only among Blacks compared with Whites. From 1988-1994 to 1999-2002, the proportion of adults with diagnosed diabetes who had their blood pressure under control did not change significantly for any group.

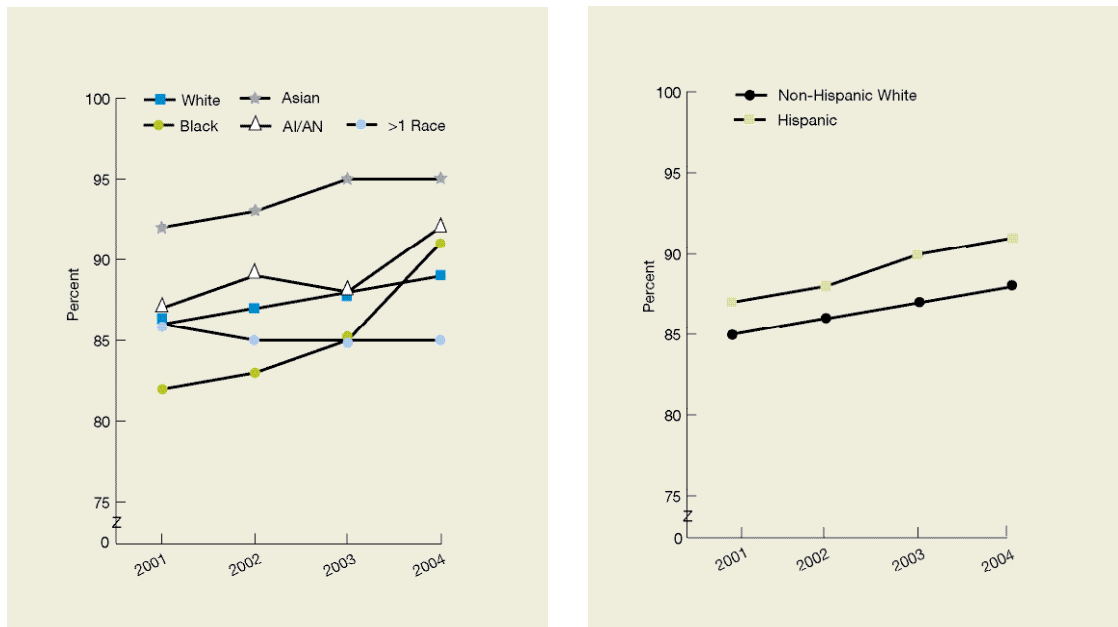
End Stage Renal Disease (ESRD)

Total ESRD deaths (2003)	82,588 ¹⁴
Total cases (2003)	452,957 ¹⁴
New cases (2003)	102,567 ¹⁴
Total ESRD program expenditures (2003)	\$27.3 billion ¹⁴

Management: Adequacy of Hemodialysis

End stage renal disease is failure of the kidneys to filter waste products from the body, necessitating dialysis.¹⁵ Adequacy of dialysis is important to the 70% of ESRD patients on dialysis.

Figure 2.6. Hemodialysis patients age 18 and over with adequate dialysis (urea reduction ratio 65% or higher), by race (left) and ethnicity (right), 2001-2004



Key: AI/AN=American Indian or Alaska Native.

Source: ESRD Clinical Performance Measures Project, 2001-2004.

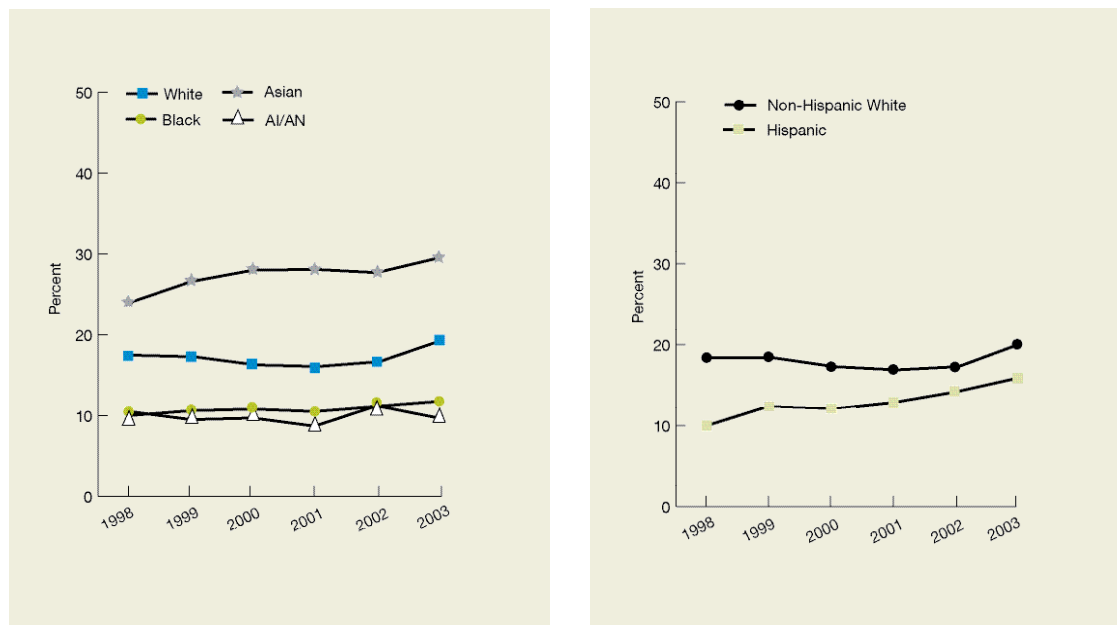
Reference population: ESRD hemodialysis patients age 18 and over.

- In all 4 years, the proportion of adult hemodialysis patients who received adequate dialysis was significantly lower among Blacks and higher among Asians compared with Whites. (Figure 2.6).
- In 2003 and 2004, the proportion of adult hemodialysis patients who received adequate dialysis was significantly higher among Hispanics compared with non-Hispanic Whites.
- The proportion of adult hemodialysis patients who received adequate dialysis improved significantly from 2001 to 2004 for the total population of hemodialysis patients (data not shown), Whites, Blacks, non-Hispanic Whites, and Hispanics.

Management: Registration for Transplantation

Kidney transplantation often allows persons with ESRD to continue a lifestyle most similar to that which they had before their kidney failure.¹⁶ It is important that persons with ESRD are registered on the waiting list for kidney transplantation to increase the likelihood of transplantation. However, there are many more people on the waiting list for transplantation than people who receive transplantation; thus, being on the waiting list does not ensure one will receive a transplant.¹⁷

Figure 2.7. Dialysis patients under age 70 registered on the waiting list for transplantation, by race (left) and ethnicity (right), 1998-2003



Key: AI/AN=American Indian or Alaska Native.

Source: U.S. Renal Data System, 1998-2003.

Reference population: ESRD hemodialysis patients and peritoneal dialysis patients age 0-70.

- In all 6 years, the proportion of dialysis patients registered for transplantation was significantly lower among Blacks and AI/ANs and higher among Asians compared with Whites (Figure 2.7).
- In all 6 years, the proportion of dialysis patients registered for transplantation was significantly lower among Hispanics compared with non-Hispanic Whites.
- From 1998 to 2003, the proportion of dialysis patients registered for transplantation improved significantly among Whites, Blacks, Asians, non-Hispanic Whites, and Hispanics, but no group achieved the Healthy People 2010 target of 66%.

Heart Disease

Number of deaths (2003)	684,462 ⁴
Cause of death rank (2003)	1st ⁴
Number of cases of coronary heart disease each year	13,200,000 ¹⁸
Number of cases of heart failure each year	5,000,000 ¹⁸
Number of cases of high blood pressure each year	65,000,000 ¹⁸
Number of heart attacks each year	7,200,000 ¹⁸
Number of new cases of congestive heart failure each year	550,000 ¹⁸
Total cost of cardiovascular disease (2006 est.)	\$403.0 billion ⁵
Total cost of congestive heart failure (2006 est.)	\$29.6 billion ¹⁸
Direct medical costs of cardiovascular disease (2005 est.)	\$257.6 billion ⁵
Cost effectiveness of hypertension screening	\$14,000-\$35,000/QALY ⁶
Cost effectiveness of aspirin chemoprophylaxis	cost savings ^{x 6}

Prevention: Counseling Obese Adults About Overweight

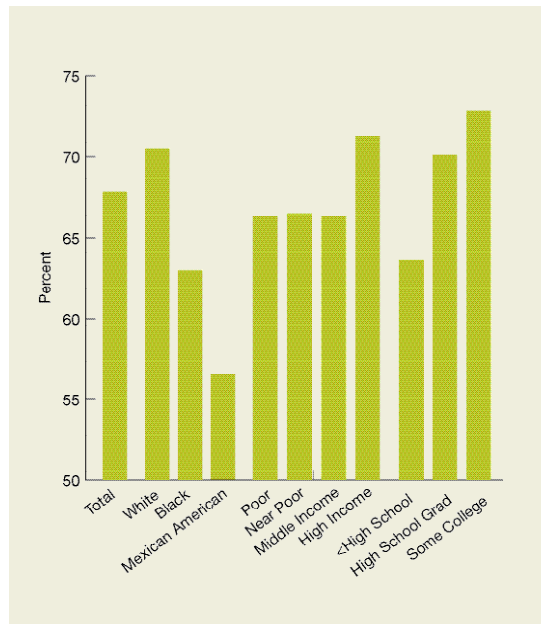
This year, new measures related to overweight and obesity are presented in the NHDR. In this section, measures for counseling obese adults about overweight and exercise are presented. In Chapter 4, Priority Populations, a measure for counseling children about overweight is presented in the section on children.

Over 32% of adults age 20 and older in the United States are obese,^{xi,19} putting them at increased risk for many chronic, deadly conditions such as hypertension, cancer, diabetes, and coronary heart disease.²⁰ Reducing obesity is a major objective in preventing heart disease and stroke.²¹ Although physician guidelines recommend that health care providers screen all adult patients for obesity,²² obesity remains underdiagnosed among U.S. adults.²³ The health care system has a central role to play in helping people become aware of the risks of obesity when they are overweight and suggesting strategies for reducing these risks.

^x Unlike other interventions which often involve greater costs for health benefits, this intervention actually results in net cost savings to society.

^{xi} Obesity is defined as having a body mass index (BMI) of 30 or higher. It is noteworthy that BMI incorporates both a person's weight and height in determining if he or she is overweight or obese.

Figure 2.8. Obese adults (body mass index of 30 or higher) age 20 and over who were told by a doctor or health professional that they were overweight by race/ethnicity, income, and education, 1999-2002



Source: National Health and Nutrition Examination Survey, 1999-2002

Reference population: Civilian noninstitutionalized population age 20 and over.

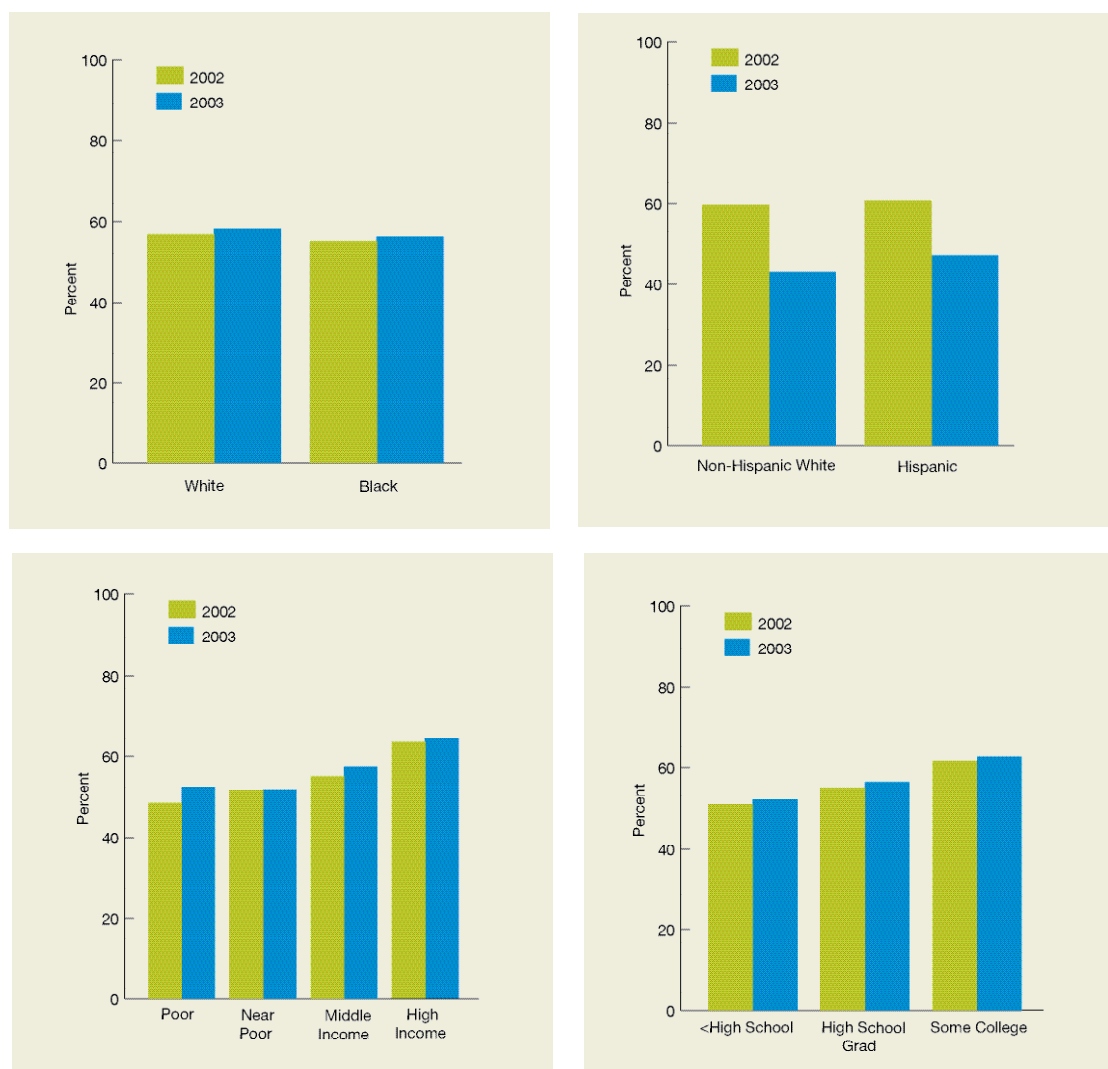
Note: Whites and Blacks are non-Hispanic populations. Education groups are for adults age 25 and over only. Rates other than the total are age adjusted to the 2000 standard population.

- Over two-thirds (67.8%) of obese adults were told by a doctor or health professional that they were overweight (Figure 2.8).
- The proportion of obese adults who were told by a doctor or health professional that they were overweight was significantly lower among Blacks and Mexican Americans compared with Whites; and among adults with less than a high school education compared with adults with any college education.

Prevention: Counseling Obese Adults About Exercise

Exercise counseling within the clinical setting is an important component of effective weight loss interventions.²² Regular exercise aids in weight loss and blood pressure control efforts, reducing the risk of heart disease, stroke, diabetes, and other diseases.

Figure 2.9. Obese adults (body mass index of 30 or higher) who were given advice about exercise by race (top left), ethnicity (top right), income (bottom left), and education (bottom right), 2002 and 2003



Key: AI/AN=American Indian or Alaska Native.

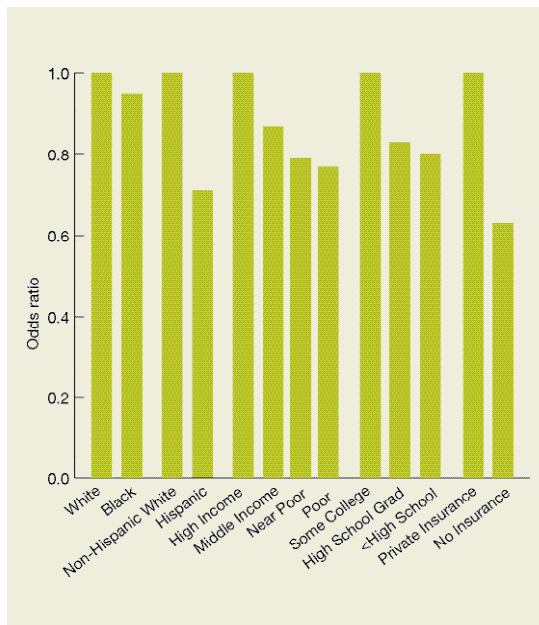
Source: Medical Expenditure Panel Survey, 2002 and 2003.

Reference population: Civilian noninstitutionalized population age 18 and over.

- In both years, the proportion of obese adults who were given advice about exercise was significantly lower among Hispanics compared with non-Hispanic Whites; among poor, near poor, and middle income adults compared with high income adults; and among adults with a high school education or less compared with adults with any college education (Figure 2.9).
- From 2002 to 2003, the proportion of adults who were obese who were given advice about exercises did not change significantly for any group.

Each year, multivariate analyses are conducted in support of the NHDR to identify the independent effects of race, ethnicity, and socioeconomic status on quality of health care. Past reports have listed some of these findings. This year, the NHDR presents the results of a multivariate model for one measure: obese adults who were given advice about exercise. Adjusted odds ratios are shown to quantify the relative magnitude of disparities after controlling for a number of confounding factors.

Figure 2.10. Obese adults (body mass index of 30 or higher) who were given advice about exercise: Adjusted odds ratios, 2002 and 2003



Source: Medical Expenditure Panel Survey, 2002 and 2003.

Reference population: Obese civilian noninstitutionalized population ages 18-64.

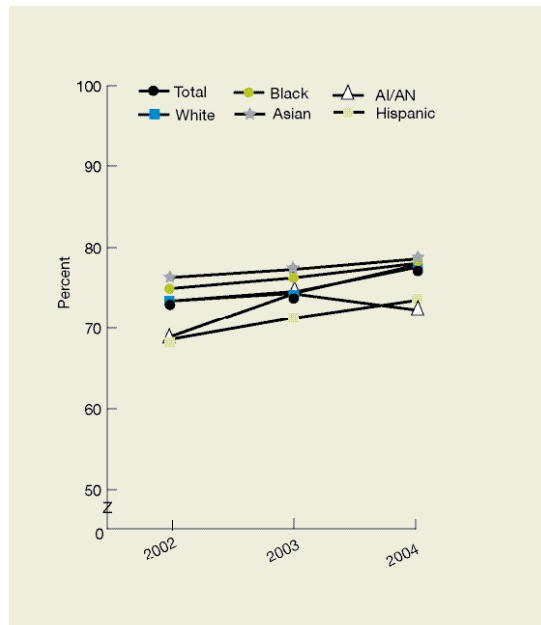
Note: Adjusted odds ratios are calculated from logistic regression models controlling for race, ethnicity, income, education, insurance, age, gender, and residence location. White, non-Hispanic White, high income, some college, and private insurance are reference groups with odds ratio=1; odds ratios <1 indicate that group is less likely to receive service than reference group. For example, compared with obese adults with private insurance, the chances that obese adults with no insurance were given advice about exercise is 0.63 after controlling for other factors. Another way to state this is that obese adults with no insurance are 37% less likely than obese adults with private insurance to receive advice about exercise.

- In multivariate models controlling for race, ethnicity, income, education, insurance, age, gender, and residence location, Hispanics were 29% less likely than non-Hispanic Whites, poor individuals were 23% less likely than high income individuals, individuals with less than a high school education were 20% less likely than individuals with some college education, and individuals with no health insurance were 37% less likely than individuals with private insurance to receive advice about exercise when obese (Figure 2.10).

Treatment: Recommended Hospital Care for Heart Failure

Recommended hospital care for heart failure includes evaluation of the left ventricular ejection fraction and receipt of an ACE inhibitor for the left ventricular systolic dysfunction.

Figure 2.11. Recommended hospital care received by Medicare patients with heart failure, by race/ethnicity, 2002-2004



Key: AI/AN=American Indian or Alaska Native.

Source: Medicare Quality Improvement Organization program, 2002-2004.

Denominator: Medicare beneficiaries hospitalized for heart failure, all ages.

Note: Whites, Blacks, AI/ANs, and Asians are non-Hispanic groups. Composite incorporates the following measures: (1) receipt of evaluation of left ventricular ejection fraction, and (2) receipt of ACE inhibitor for left ventricular systolic dysfunction. Composite is calculated by averaging the percentage of the population that received each of the two incorporated components of care. For further details on composite measures, see Chapter 1, Introduction and Methods.

- From 2002 to 2004, the overall percentage of Medicare patients with heart failure who received recommended hospital care improved from 73.4% to 77.7% (Figure 2.11).
- In 2002 and 2004, this percentage was significantly lower among Hispanics compared with Whites. In 2004 the percentage was also significantly lower among AI/ANs compared with Whites.
- From 2002 to 2004, the percentage of Medicare patients with heart failure who received recommended hospital care improved significantly for the total population and among Whites, Blacks, and Hispanics.

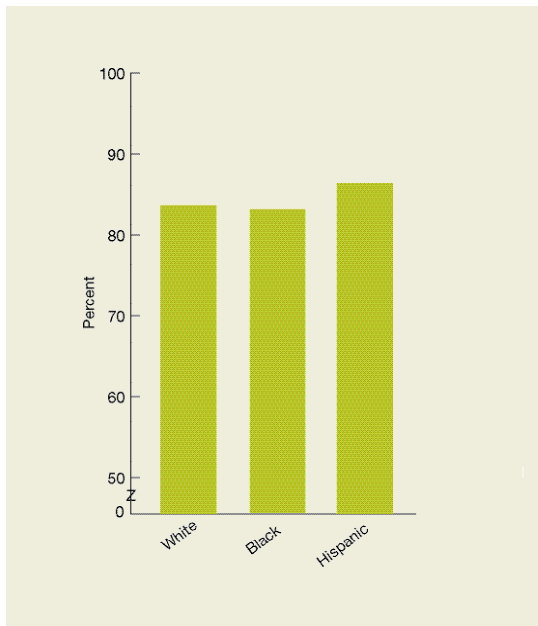
HIV and AIDS

Number of AIDS deaths (2004)	15,798 ²⁴
Number of persons in the U.S. living with HIV (2003 est.)	1,039,000-1,185,000 ²⁵
Number of persons living in the U.S. with AIDS (2004)	415,193 ²⁴
New cases of HIV annually (2003 est.)	approximately 40,000 ²⁵
New AIDS cases (2004 est.)	42,514 ²⁴
Federal spending on HIV/AIDS care (fiscal year 2004).	\$11.6 billion ²⁶

Management: PCP and MAC Prophylaxis

Management of chronic HIV disease includes outpatient and inpatient services. Because national data on HIV care are not routinely collected, HIV measures tracked in NHDR come from the HIV Research Network, which consists of 18 medical practices across the United States that treat large numbers of HIV patients. Although program data are collected from all Ryan White CARE Act grantees,²⁷ the aggregate nature of the data make it difficult to assess the quality of care provided by Ryan White CARE Act providers. Without adequate treatment, as HIV disease progresses, CD4 cell counts fall and patients become increasingly susceptible to opportunistic infections. When CD4 cell counts fall below 200, medicine to prevent development of *Pneumocystis pneumonia* (PCP) is routinely recommended; when CD4 cell counts fall below 50, medicine to prevent development of disseminated *Mycobacterium avium* complex (MAC) infection is routinely recommended.²⁸

Figure 2.12. HIV patients with CD4 cell count <200 who received PCP prophylaxis in the past year, by race/ethnicity, 2003



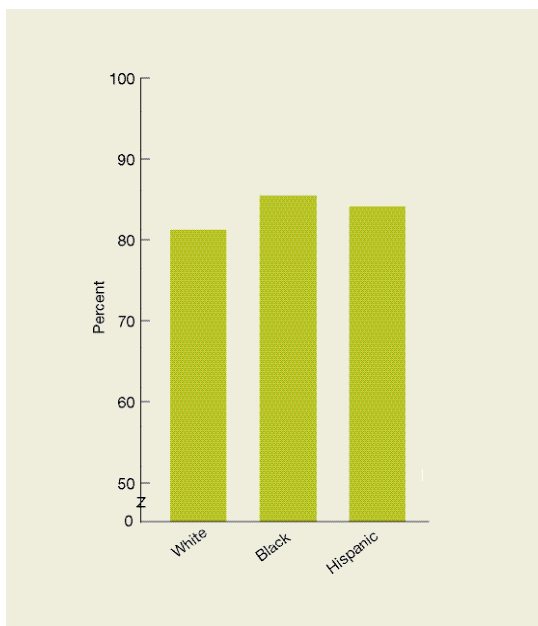
Source: HIV Research Network, 2003.

Reference population: HIV patients age 18 and older receiving care from HIV Research Network providers.

Note: Whites and Blacks are non-Hispanic populations.

- The proportion of HIV patients with CD4 cell count <200 who received PCP prophylaxis did not differ significantly by race/ethnicity (Figure 2.12).

Figure 2.13. HIV patients with CD4 cell count <50 who received MAC prophylaxis in the past year, by race/ethnicity, 2003



Source: HIV Research Network, 2003.

Reference population: HIV patients age 18 and older receiving care from HIV Research Network providers.

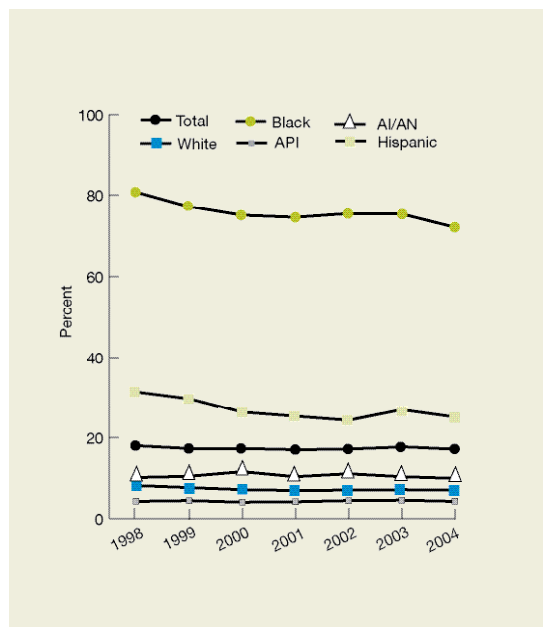
Note: Whites and Blacks are non-Hispanic populations.

- The proportion of HIV patients with CD4 cell count <50 who received MAC prophylaxis did not differ significantly by race/ethnicity (Figure 2.13).

Management: New AIDS Cases

Currently, existing comprehensive data on HIV infection rates across the Nation are lacking; however, early and appropriate treatment of HIV disease can delay progression to AIDS. Improved management of chronic HIV disease has likely contributed to declines in new AIDS cases. For example, as the use of highly active antiretroviral therapy (HAART) to treat HIV infection became widespread in the mid-1990s, rates of new AIDS cases declined.^{29,30}

Figure 2.14. New AIDS cases per 100,000 population age 13 and over, by race/ethnicity, 1998-2004



Key: API=Asian or Pacific Islander; AI/AN=American Indian or Alaska Native.

Source: HIV/AIDS Reporting System, 1998-2004.

Reference population: U.S. population age 13 years and over.

Note: The source categorizes race/ethnicity as a single item. White=non-Hispanic White; Black=non-Hispanic Black.

- From 1998 to 2004, the overall rate of new AIDS cases declined from 18.0 to 17.1 cases per 100,000 persons (Figure 2.14).
- From 1998 to 2004, the rate of new AIDS cases fell from 80.7 to 72.1 per 100,000 among non-Hispanic Blacks, from 31.3 to 25.0 per 100,000 among Hispanics, and from 8.2 to 7.1 per 100,000 among non-Hispanic Whites.
- In 2004, the rate of new AIDS cases among Blacks was more than 10 times as high and the rate among Hispanics was over 3 times as high as the rate among Whites.
- No group has accomplished the Healthy People 2010 target of 1.0 new AIDS case per 100,000 population.

Mental Health and Substance Abuse

Cause of death rank – suicide (2003)	11th ⁴
Alcohol-related motor vehicle deaths (2004)	16,694 ³¹
Students grades 9-12 who have seriously considered suicide (2005)	16.9% ³²
People 12 or older with alcohol and/or illicit drug dependence or abuse (2004)	22,506,000 ³³
People 18 or older with diagnosable mental disorder (2004)	21,417,000 ³³
Adults with co-occurring diagnosable mental disorder and substance dependence or abuse (2004)	4,600,000 ³³
Youth ages 12-17 with a major depressive episode during the past year	2,225,000 (9.0 %) ³⁴
Adults 18 and older with a major depressive episode during the past year	17,100,000 (8.0%) ³⁵
Lifetime prevalence of major depressive disorder	9.5% ³⁶
Lifetime prevalence of dysthymic disorder	6.1% ³⁶
People with any mental disorder in past year, U.S. (2001-2003)	28.1% ³⁷
People with anxiety disorders, U.S. (2001-2003)	18.7% ³⁷
People with mood disorders, U.S. (2001-2003)	9.7% ³⁷
People with impulse-control disorders, U.S. (2001-2003)	10.4% ³⁷
People with substance abuse disorders, U.S. (2001-2003)	7.2% ³⁷
Direct medical expenditures for substance abuse and mental disorders (2001 est.)	\$104 billion ³⁸
Cost effectiveness of problem drinking screening and brief counseling	\$14,000-\$35,000/QALY ⁶

In a cross-national survey among adults in 14 countries conducted from 2001-2003, the United States had the highest rate with any mental disorders including substance abuse.^{xii, 39} The proportion of those with any mental disorders was 26%. The 12-month prevalence of anxiety disorders in the United States is 18%; mood disorders, 10%; impulse-control disorder, 7%; and any substance disorder is 4%. Mental health and substance abuse treatment quality improvement programs have been shown to improve outcomes and reduce costs.³⁷

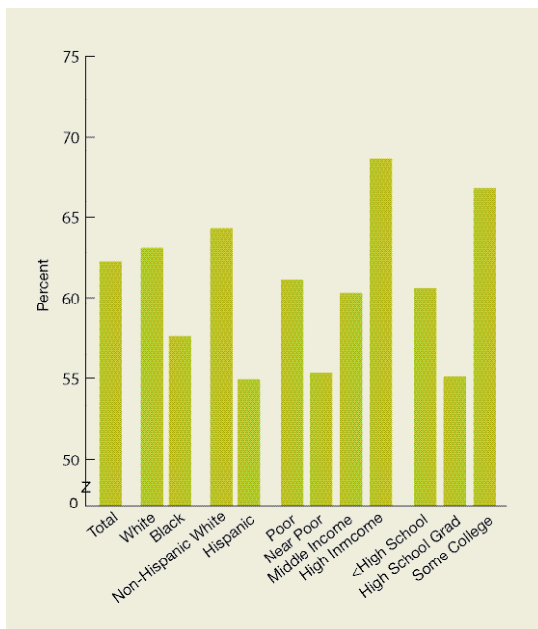
Suicide is often the result of untreated depression, and may be prevented when its warning signs are detected and treated. However, cultural, religious, or social stigma in certain population groups prevents the acknowledgment of the condition and hinders seeking care for depression, suicidal ideation, and related conditions.^{40, 41, 42} As a result, suicides are often underreported. Suicide rates should be used cautiously as a measure of differences in access to quality care among population groups, especially among racial and ethnic groups.^{43, 44}

^{xii} Readers should note that, to some extent, this finding may be attributable to different rates of screening and diagnosis for different countries.

Treatment: Receipt of Treatment for Depression

Treatment for depression is an effective way to reduce the chances of future major depressive episodes. However, cost of care, societal stigma, and fragmented organization of services represent significant barriers to treatment for depression.⁴⁵

Figure 2.15. Adults with a major depressive episode in the past year who received treatment for depression in the past year, 2004



Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2004.

Reference population: U.S. population age 18 and older who had a major depressive episode in the past year.

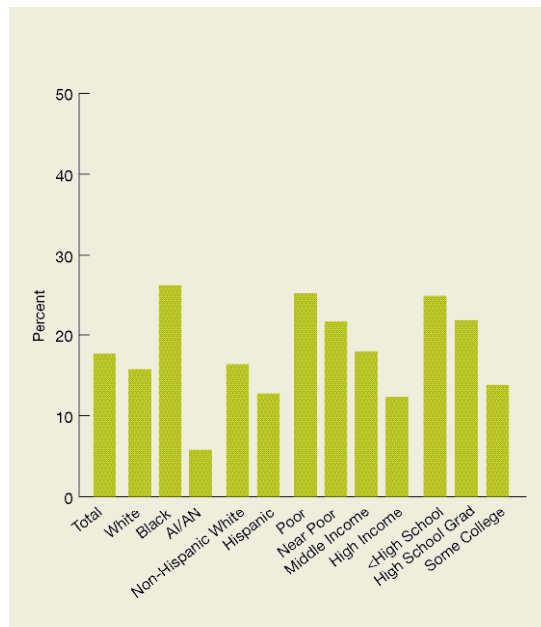
Note: Major depressive episode is defined as a period of at least 2 weeks when a person experienced a depressed mood or loss of interest or pleasure in daily activities and had a majority of the symptoms for depression as described in the 4th edition of the *Diagnostic and Statistical Manual of Mental Health Disorders (DSM-IV)*.

- The proportion of adults with a major depressive episode in the past year who received treatment for depression in the past year was significantly lower among adults with a high school education compared with adults with any college education and among near poor compared with high income adults (Figure 2.15).

Treatment: Treatment for Illicit Drug Use

Illicit drug^{xiii} use is a medical problem that can have a direct toxic effect on a number of body organs as well as exacerbate numerous health and mental health conditions. Treatment for illicit drug use at a specialty facility is an effective way to reduce the chances of future illicit drug use.

Figure 2.16. Persons age 12 and over who needed treatment for illicit drug use and received it at a specialty facility in the past year, 2002-2004



Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2004.

Reference population: U.S. population age 12 and over who needed treatment for illicit drug use in the past year.

Note: Estimates by education were only available for persons age 18 and over. *Received illicit drug treatment at a specialty facility* refers to treatment received at a hospital (inpatient), a rehabilitation facility (inpatient or outpatient), or mental health center in order to reduce or stop drug use, or for medical problems associated with drug use. Respondents were classified as needing treatment for an illicit drug problem if they met at least one of the three criteria during the past year: (1) dependent on any illicit drug; (2) abuse of any illicit drug; or (3) received treatment for an illicit drug problem at a specialty facility (i.e., drug and alcohol rehabilitation facilities [inpatient or outpatient], hospitals [inpatient only], and mental health centers).

- The proportion of persons age 12 and over who needed treatment for illicit drug use and received it at a specialty facility in the past year was significantly higher among Blacks compared with Whites; among poor and near poor persons compared with high income persons; and among persons with a high school education or less compared with persons with any college education (Figure 2.16).
- The proportion of persons age 12 and over who needed treatment for illicit drug use and received it at a specialty facility in the past year was significantly lower among AI/ANs compared with Whites.
- Only Blacks and persons with less than a high school education achieved the Healthy People 2010 target of 24% of persons age 12 and over who needed treatment for illicit drug use actually receiving such treatment.

^{xiii} Illicit drugs included in this measure are marijuana/hashish, cocaine (including crack), inhalants, hallucinogens, heroin, or prescription-type psychotherapeutic (non-medical use) drugs.

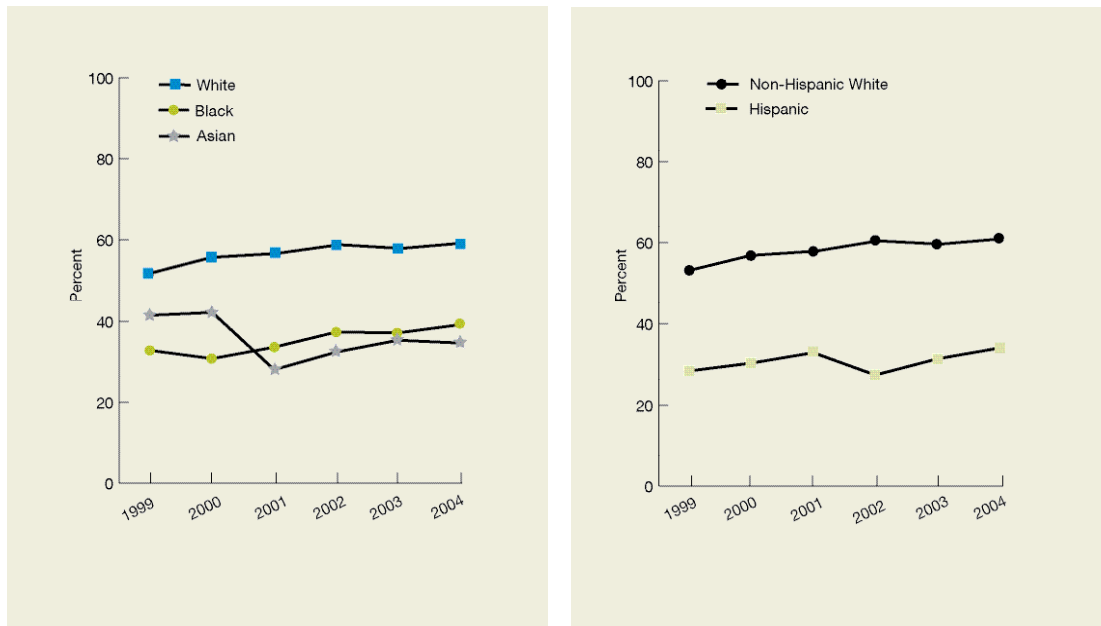
Respiratory Diseases

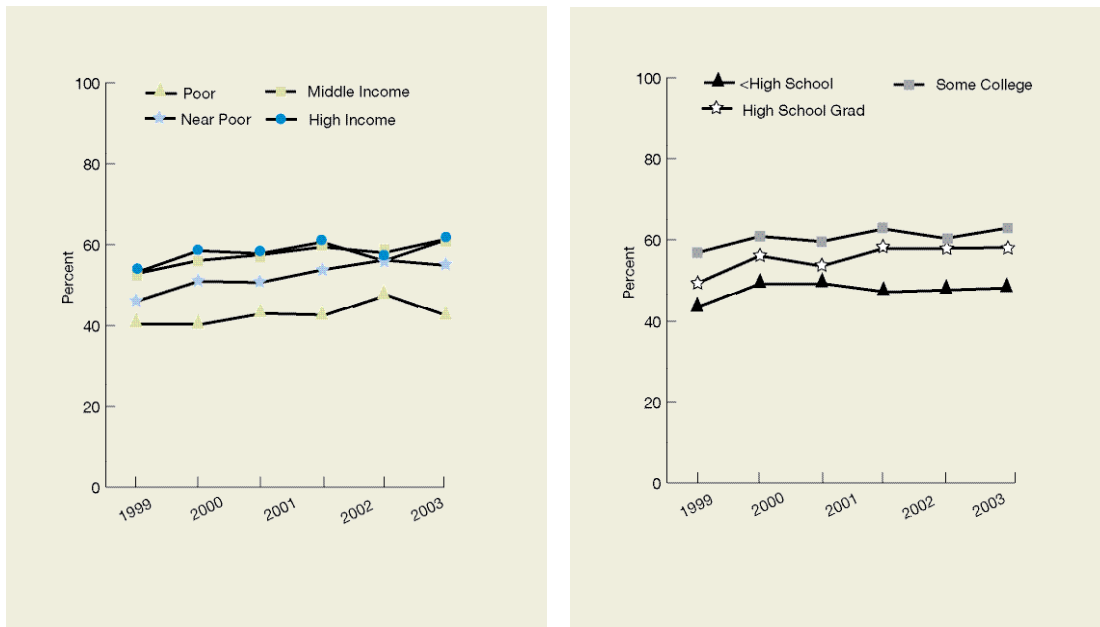
Number of deaths due to lung diseases (2001)	231,545 ⁴⁶
Number of deaths, influenza and pneumonia combined (2003)	64,847 ⁴
Cause of death rank, influenza and pneumonia combined (2003)	7th ⁴
People 18 or over with an asthma attack in past 12 months, U.S. (2003)	13,623,000 ⁴⁷
People under 18 with an asthma attack in past 12 months, U.S. (2003)	3,975,000 ⁴⁸
Annual number of cases of the common cold in the U.S. (est)	>1 billion ⁴⁹
Annual number of pneumonia cases due to <i>Streptococcus pneumoniae</i>	4,800,000 ⁵⁰
Total cost of lung diseases (2006 est.)	\$144.2 billion ⁵
Direct medical costs of lung diseases (2006 est.)	\$87.0 billion ⁵
Total approximate cost of upper respiratory infections (annual)	\$40 billion ⁵¹
Total cost of asthma (2004)	\$27.6 billion ⁴⁶
Direct medical costs of asthma (2004)	\$11.5 billion ⁴⁶
Cost effectiveness of tobacco use screening and brief intervention	cost savings ⁶
Cost effectiveness of influenza immunization	\$0-\$14,000/QALY ⁶
Cost effectiveness of pneumococcal immunization	cost savings ⁶

Prevention: Pneumococcal Vaccination

Vaccination is an effective strategy for reducing illness, death, and disparities associated with pneumococcal disease and influenza.^{52, 53}

Figure 2.17. Adults age 65 and over who ever had pneumococcal vaccination, by race (this page, left), ethnicity (this page, right), income (next page, left), and education (next page, right), 1999-2004





Source: National Health Interview Survey, 1999-2003.

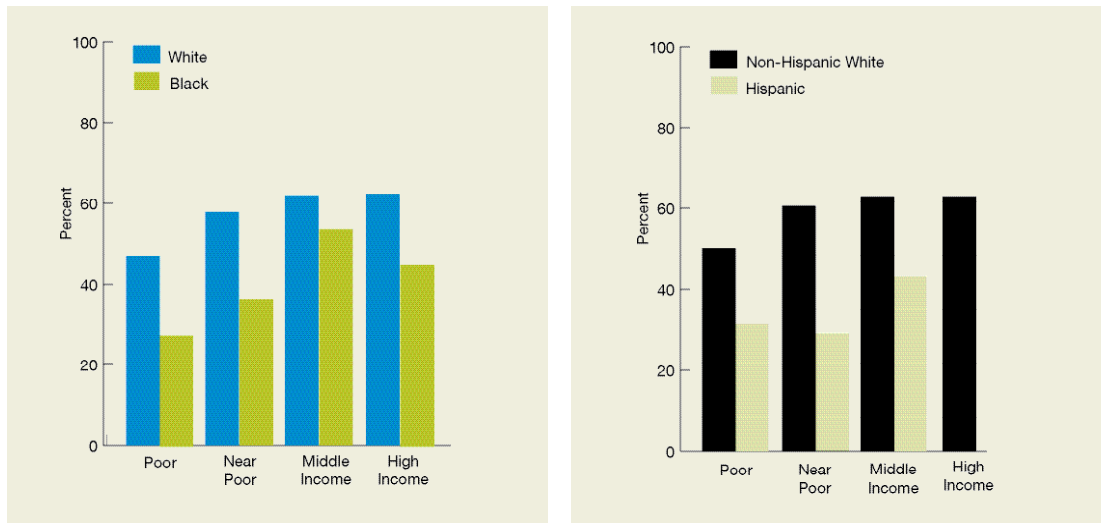
Reference population: Civilian noninstitutionalized population age 65 and over.

Note: Age adjusted to the 2000 standard population.

- In all 6 years, the proportion of adults age 65 and over who ever had pneumococcal vaccine was significantly lower among Blacks compared with Whites; Hispanics compared with non-Hispanic Whites; poor compared with high income elderly; and elderly with less than a high school education compared with elderly with any college education (Figure 2.17).
- In 5 of the 6 years, rates were also significantly lower among Asians compared with Whites; near poor compared with high income elderly; and high school graduates compared with elderly who had any college education.
- From 1999 to 2004, the overall proportion of adults age 65 and over with pneumococcal vaccine (data not shown) improved significantly, from 49.9% to 57.0%. Improvements were observed among Whites, non-Hispanic Whites, near poor, middle income, and high income persons, and all education groups.
- No group achieved the Healthy People 2010 target of 90% of adults age 65 and over having received pneumococcal vaccination.

Racial and ethnic minorities are disproportionately of lower socioeconomic status. To distinguish the effects of race, ethnicity, income, and education on pneumococcal vaccination, this measure is stratified by income and education level.

Figure 2.18. Adults age 65 and over who ever had pneumococcal vaccination, by race (left) and ethnicity (right), stratified by income, 2004

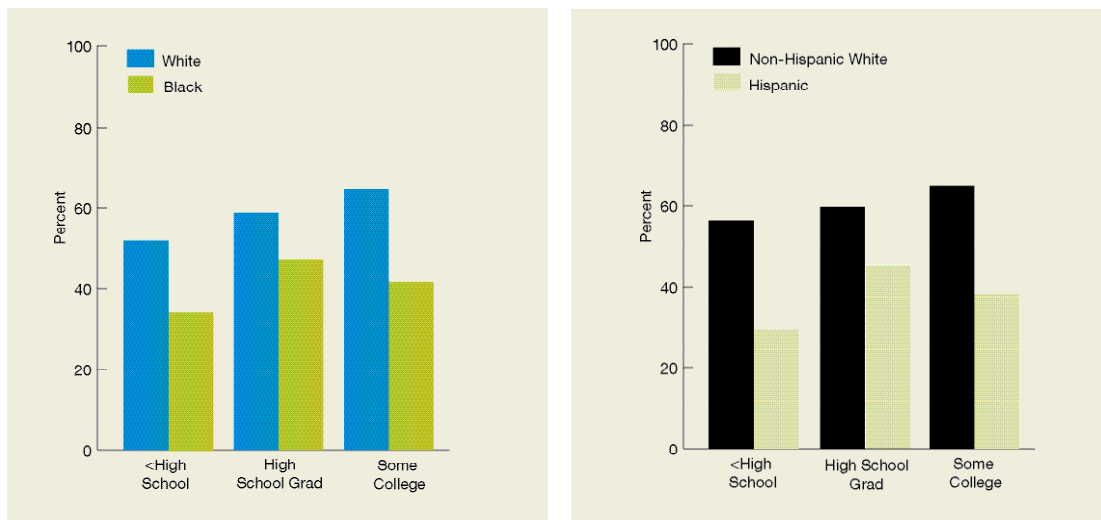


Source: National Health Interview Survey, 2004.

Reference population: Civilian noninstitutionalized population age 65 and older.

Note: Age adjusted to the 2000 standard population. Estimates are not available for high income Hispanics.

Figure 2.19. Adults age 65 and over who ever had pneumococcal vaccination, by race (left) and ethnicity (right), stratified by education, 2004



Source: National Health Interview Survey, 2004.

Reference population: Civilian noninstitutionalized population age 65 and older.

Note: Age adjusted to the 2000 standard population.

- Poor, near poor, and Blacks of every education level were significantly less likely than respective Whites to report pneumococcal vaccination (Figures 2.18 and 2.19).
- Hispanics of every income and education level were significantly less likely than respective non-Hispanic Whites to report pneumococcal vaccination.

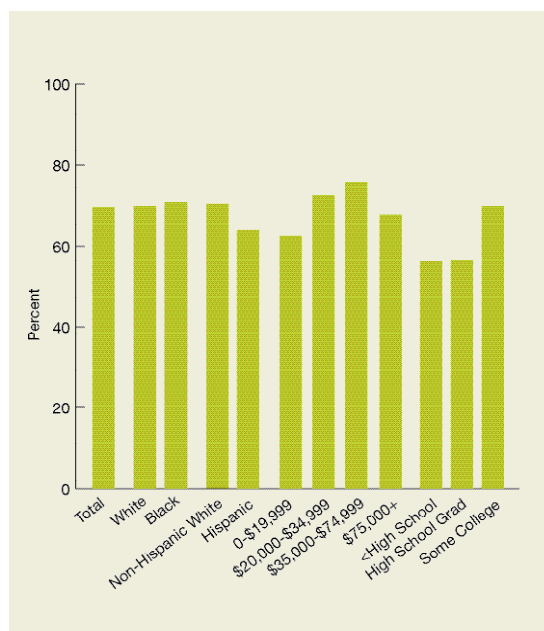
Management: Asthma Management for Long-Term Control

Improving quality of care for people with asthma can reduce the occurrence of asthma attacks and avoidable hospitalizations. The National Asthma Education and Prevention Program (NAEPP), coordinated by the National Heart, Lung and Blood Institute, develops and disseminates science-based guidelines for the diagnosis and management of asthma.⁵⁴ These recommendations are built around four essential components of asthma management critical for effective long-term control of asthma: assessment and monitoring, controlling factors contributing to symptom exacerbation, pharmacotherapy, and education for partnership in care.⁵⁵

The National Asthma Survey in 2003, sponsored by the CDC National Center for Environmental Health and conducted by the National Center for Health Statistics, is the most comprehensive national data set on asthma prevalence and asthma care. It examines the health, socioeconomic, behavioral, and environmental predictors that relate to better control of asthma.

Counseling persons with asthma about recognizing an attack. Patient self-assessment is one of the primary methods for monitoring asthma. Patients should be trained to recognize symptom patterns indicating inadequate asthma control and the need for additional therapy.

Figure 2.20. Persons with current asthma who reported they were taught to recognize early signs of an attack, by race, ethnicity, income, and education, 2003



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Asthma Survey, 2003.

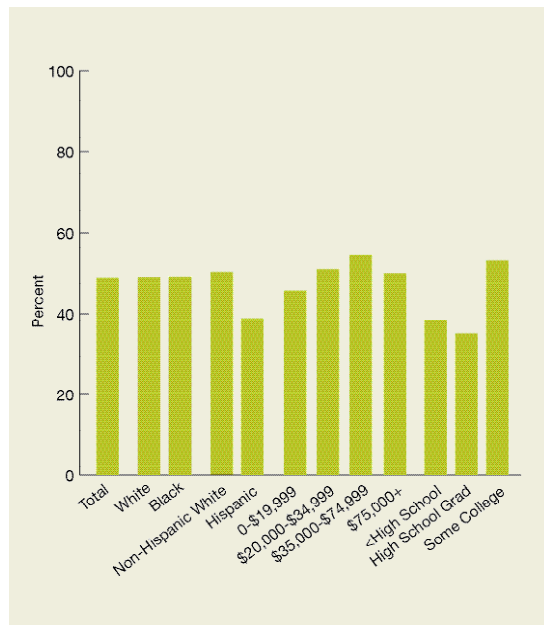
Reference population: Civilian noninstitutionalized population with asthma, all ages. Education groups are for adults age 25 and over only.

Note: Numerical income categories are used in place of the NHDR's usual descriptive categories because that is how data are collected for this measure.

- The percentage of those with current asthma who reported they were taught to recognize early signs of an attack was 69.7% (Figure 2.20).
- High school graduates with current asthma were significantly less likely to report that they were taught to recognize early signs of an attack compared with people with at least some college education. No other significant differences were observed.

Counseling persons with asthma about changing their environment. Environmental tobacco smoke, dust mites, cockroaches, and animal allergens can trigger asthma exacerbations in sensitized persons. Ways of controlling environmental triggers and reducing exposure to environmental allergens and irritants should be discussed with asthma patients.

Figure 2.21. Persons with current asthma who reported they were told how to change their environment to help control their asthma, by race, ethnicity, income, and education, 2003



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Asthma Survey, 2003.

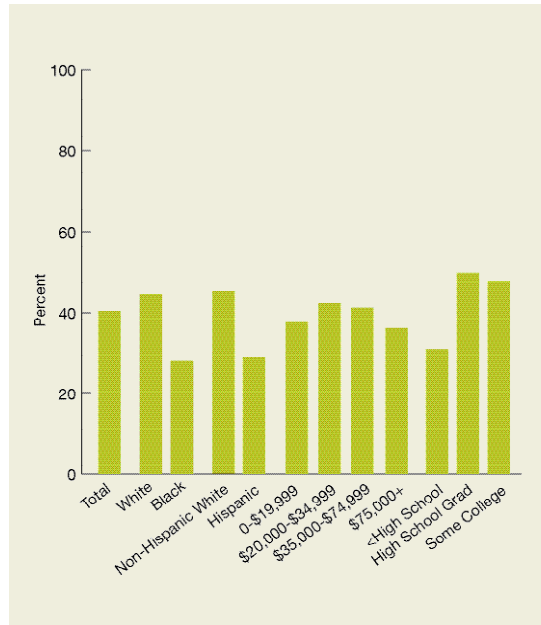
Reference population: Civilian noninstitutionalized population with asthma, all ages. Education groups are for adults age 25 and over only.

Note: Numerical income categories are used in place of the NHDR's usual descriptive categories because that is how data are collected for this measure.

- Nearly half (48.8%) of persons with current asthma reported they were told how to change their environment to help control their asthma (Figure 2.21).
- Persons with a high school education or less with current asthma were significantly less likely than persons with at least some college education to report they were told how to change their environment to help control their asthma. No other significant differences were observed.

Use of a controller medication. Daily long-term control medication is necessary to prevent exacerbations and chronic symptoms for all patients with persistent asthma. Appropriate controller medications for people with mild persistent asthma^{xiv, 55, 56} include inhaled corticosteroids, cromolyn, nedocromil, theophylline, or leukotriene modifiers.⁵⁷

Figure 2.22. Persons with current asthma who reported using a controller medication in the past 3 months, by race, ethnicity, income, and education, 2003



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Asthma Survey, 2003.

Reference population: Civilian noninstitutionalized population with asthma, all ages. Education groups are for adults age 25 and over only.

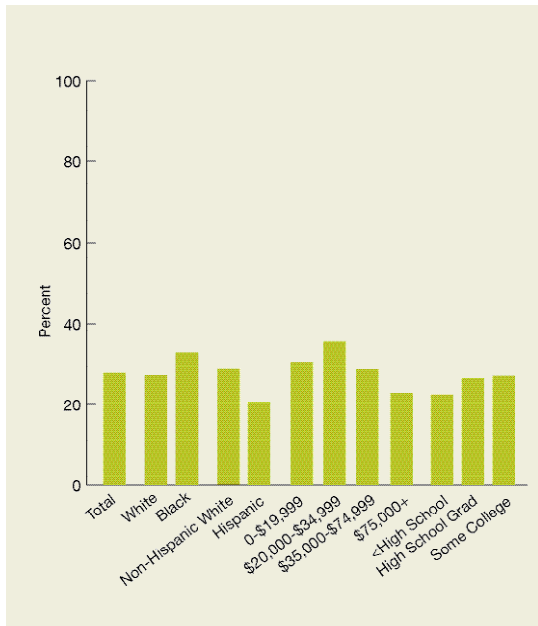
Note: Numerical income categories are used instead of the NHDR's usual descriptive categories because that is how data are collected for this measure.

- The percentage of persons with current asthma who reported using a controller medication in the past 3 months was 40.4% (Figure 2.22).
- Blacks with current asthma were significantly less likely than Whites to report using a controller medication in the past 3 months. No other significant differences were observed.

^{xiv} “Mild persistent asthma” refers to people who experience asthma symptoms more than 2 days per week, more than 2 nights per month, and other clinical indicators.

Receipt of an asthma management plan. Providers should develop a written plan as part of educating patients regarding self management, especially for patients with moderate or severe persistent asthma and those with a history of severe exacerbation.

Figure 2.23. Persons with current asthma who reported they received an asthma management plan, by race, ethnicity, income, and education, 2003



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Asthma Survey, 2003.

Reference population: Civilian noninstitutionalized population with asthma, all ages. Education groups are for adults age 25 and over only.

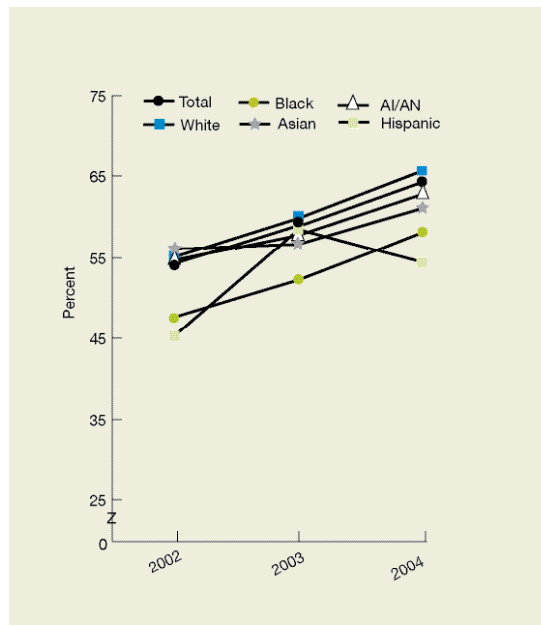
Note: Numerical income categories are used instead of the NHDR’s usual descriptive categories because that is how data are collected for this measure.

- Only 27.7% of persons with current asthma reported receiving an asthma management plan (Figure 2.23).
- There were no significant differences by race, ethnicity, income, or education in reported receipt of an asthma management plan. No other significant differences were observed.

Treatment: Recommended Hospital Care for Pneumonia

Approximately 5 million cases of pneumonia occur annually and result in nearly 55 million days of restricted activity, 31.5 million bed days, and 1.3 million hospitalizations each year.⁵⁸ The Centers for Medicare & Medicaid Services tracks a set of measures for quality of pneumonia care for hospitalized patients from the CMS Quality Improvement Organization (QIO) program which has been adopted by the Hospital Quality Alliance (HQA).

Figure 2.24. Recommended hospital care received by Medicare patients with pneumonia, by race/ethnicity, 2002-2004



Key: AI/AN=American Indian or Alaska Native.

Source: Quality Improvement Organization program, 2002-2004.

Denominator: Medicare beneficiaries with pneumonia who are hospitalized, all ages.

Note: Whites, Blacks, Asians, and AI/ANs are non-Hispanic groups. Composite includes the following five measures: (1) receipt of antibiotics within 4 hours, (2) receipt of appropriate antibiotics, (3) receipt of blood culture before antibiotics, (4) receipt of influenza screening (i.e., person is assessed as to whether he or she would be a good candidate for vaccination) or vaccination, and (5) receipt of pneumococcal screening or vaccination. Composite is calculated by averaging the percentage of opportunities for care in which the patient received all five incorporated components of care. For further details on composite measures, see Chapter 1, Introduction and Methods.

- From 2002 to 2004, the overall percentage of Medicare patients with pneumonia who received recommended hospital care^{xv} improved significantly from 54.3% to 64.4% (Figure 2.24).
- In all 3 years, this percentage was significantly lower among Blacks and Hispanics compared with Whites. In 2004 the percentage was also significantly lower among Asians compared with Whites.
- From 2002 to 2004, the percentage of Medicare patients with pneumonia who received recommended hospital care improved significantly for the total population and among all racial/ethnic groups.

^{xv} “Recommended hospital care” is a composite of five separate measures (see Note to Figure 2.24 above for a list of these measures). For further details on composite measures, see Chapter 1, Introduction and Methods.

Nursing Home, Home Health, and Hospice Care

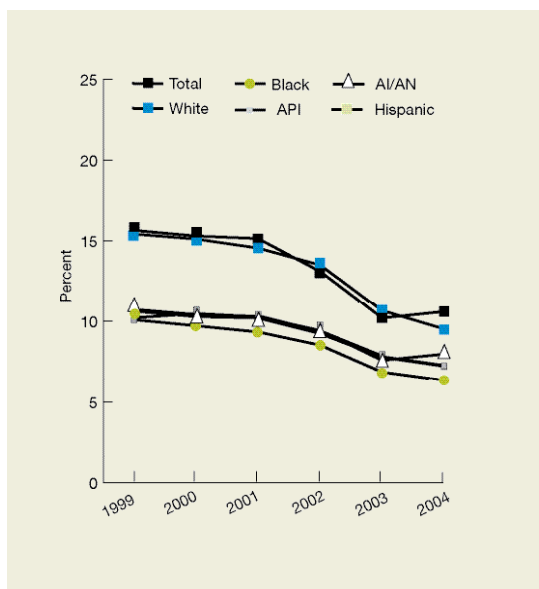
Number of nursing home residents (1999)	1,600,000 ⁵⁹
Number of home health patients (2000).	1,460,800 ⁶⁰
Number of current hospice care patients (2000).	105,500 ⁶¹
Discharges from nursing homes (1998-1999)	2,500,000 ⁵⁹
Discharges from home health agencies (2000)	7,800,100 ⁶⁰
Discharges from hospice care (2000)	621,000 ⁶¹
Total cost of nursing home services (2003)	≥\$110.8 billion ⁶²
Total cost of home health services (2003)	\$40 billion ⁶²
Annual national expenditures for hospice care for decedents (1992-1996)	\$1.232 billion ⁶³
Percent of health care expenditures for hospice care in last 6 months of life.	74% ⁶³

This section highlights two core measures of nursing home quality of care—use of physical restraints and presence of pressure sores—and two measures of home health care quality—improvement in walking or moving around and episodes with acute care hospitalization.

Management: Use of Physical Restraints Among Nursing Home Residents

While restraining nursing home residents is sometimes a component of keeping residents safe and well cared for, residents who are restrained daily can become weak, lose their ability to go to the bathroom by themselves, and develop pressure sores or other medical complications. Restraints should be used only when they are necessary as part of the medical treatment.

Figure 2.25. Long-stay nursing home residents who were physically restrained by race/ethnicity, 1999-2004



Key: API=Asian or Pacific Islander; AI/AN=American Indian or Alaska Native.

Source: CMS Minimum Data Set, 1999-2004. Data are from the third quarter of each calendar year.

Denominator: Long-stay nursing home residents, all ages.

Note: White, Black, API, and AI/AN are non-Hispanic groups. Long-stay residents are persons in an extended/permanent nursing home stay.

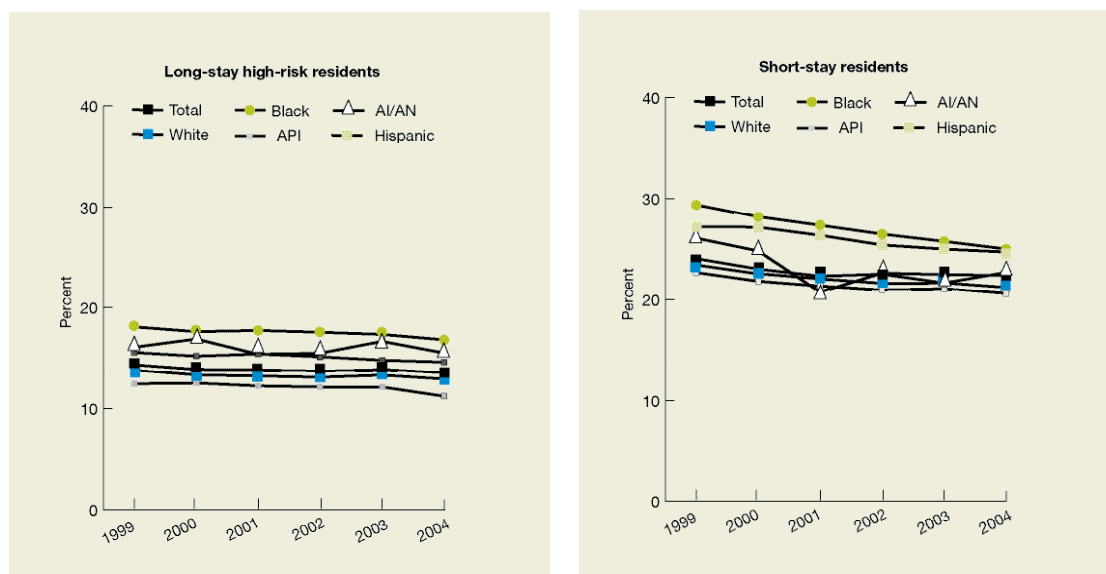
- In all 6 years, the proportion of residents who were physically restrained was significantly higher among APIs and Hispanics compared with Whites (Figure 2.25).
- In 2003 and 2004, the proportion of residents who were physically restrained was significantly lower among Blacks compared with Whites; and in 2004, the proportion was significantly higher among AI/ANs compared with Whites.

- From 1999 to 2004, the proportion of residents who were physically restrained fell from 10.7% to 7.3%. Significant improvements were observed in the use of restraints among all racial/ethnic groups.

Management: Presence of Pressure Sores Among Nursing Home Residents

A pressure ulcer, or pressure sore, is an area of broken-down skin caused by sitting or lying in one position for an extended period of time. Residents should be assessed by nursing home staff for presence or risk of developing pressure sores. Nursing homes can help to prevent or heal pressure sores by keeping residents clean and dry and by changing their position frequently or helping them move around, making sure residents get proper nutrition, and using soft padding to reduce pressure on the skin. However, some residents may get pressure sores even when a nursing home provides good preventive care.

Figure 2.26. Long-stay high-risk nursing home residents (left) and short-stay residents (right) who developed pressure sores, by race/ethnicity, 1999-2004



Key: API=Asian or Pacific Islander; AI/AN=American Indian or Alaska Native.

Source: CMS Minimum Data Set, 1999-2004. Data for long-stay residents are from the third quarter of each calendar year. Data for short-stay residents are full calendar year estimates.

Denominator: Long-stay nursing home residents (left), and short-stay nursing home residents (right).

Note: White, Black, API, and AI/AN are non-Hispanic groups. Long-stay residents are persons in an extended/permanent nursing home stay. Short-stay residents are persons needing skilled nursing care or rehabilitation services following a hospital stay but who are expected to return home.

- In all 6 years, the proportion of long-stay high-risk^{xvi} residents who developed pressure sores was significantly higher among Blacks, AI/ANs, and Hispanics compared with Whites (Figure 2.26). In 2004 the proportion of residents who developed pressure sores was significantly lower among APIs compared with Whites.
- From 1999 to 2004, the proportion of long-stay high-risk residents who developed pressure sores fell from 14.3% to 13.5%. Significant improvements were observed among Whites, Blacks, APIs, and Hispanics, but the proportion did not change significantly for AI/ANs.

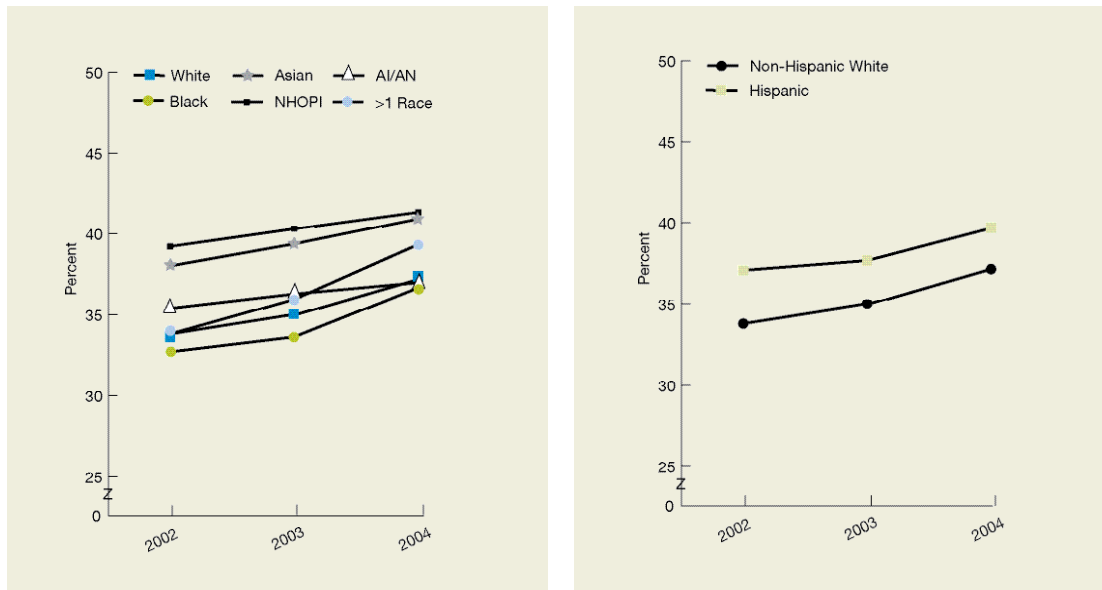
^{xvi} *High-risk* residents are those who are in a coma, who do not get or absorb the nutrients they need, or who cannot move or change position on their own. Conversely, *low-risk* residents can be active, can change positions, and are getting and absorbing the nutrients they need.

- In all 6 years, the proportion of short-stay residents who had pressure sores was significantly higher among Blacks and Hispanics compared with Whites. In 2004, the proportion was significantly higher among APIs compared with Whites.
- In 1999, the proportion was also significantly higher among AI/ANs compared with Whites, but in the latter years this disparity was eliminated.
- From 1999 to 2004, the proportion of short-stay residents who had pressure sores decreased significantly for the total population and among all racial/ethnic groups.

Treatment: Improvement by Home Health Patients in Walking or Moving Around

How well a patient improves in ability level while getting home health care is a reflection of the provider’s quality of service, the patient’s level of cooperation, and the patient’s available support system. Improved ambulation, i.e., getting better at walking or using a wheel chair, is a measure of improved outcomes.^{xvii}

Figure 2.27. Home health care episodes with patients who get better at walking or moving around, by race (left) and ethnicity (right), 2002-2004



Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian or Alaska Native.

Source: CMS Outcome and Assessment Information Set, 2002-2004.

Denominator: Patients with home health care episodes.

Note: An episode is the time during which a patient is under the direct care of a home health agency. It starts with the beginning/resumption of care and finishes when the patient is discharged from home health care or transferred to an inpatient facility. Some patients have multiple episodes in a year.

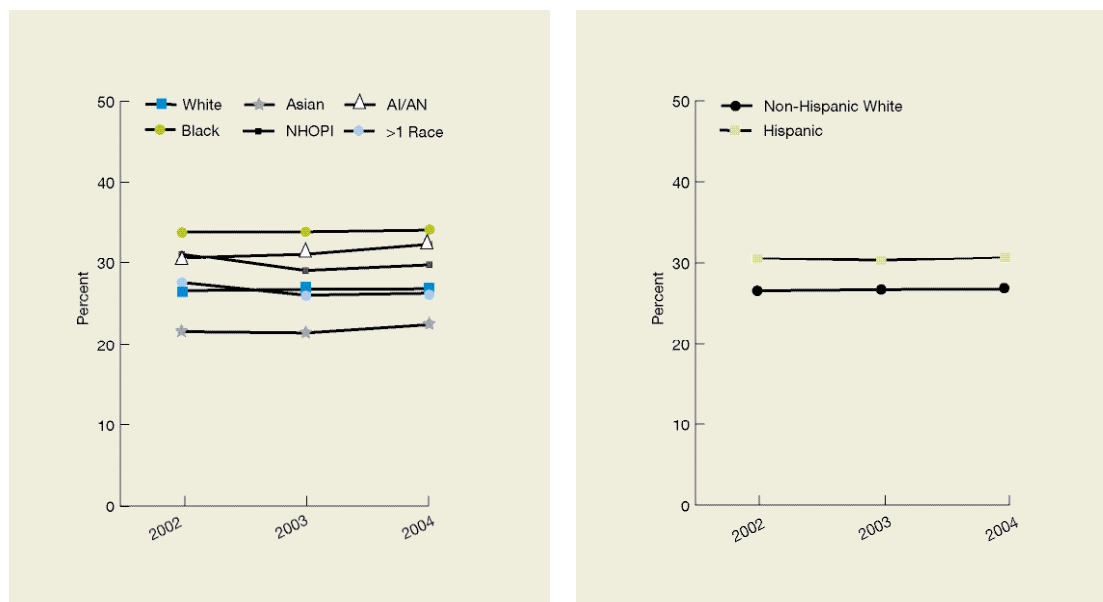
- In all 3 years, the proportion of home health care patients who got better at walking and moving around was significantly higher among NHOPIs compared with Whites (Figure 2.27).
- In 2002 and 2003, the proportion was also significantly higher among Asians compared with Whites, but in 2004 this disparity was eliminated.
- From 2002 to 2004, the proportion of home health care patients who got better at walking and moving around improved significantly for the total population (data not shown), Whites, Blacks, Asians, AI/ANs, multiple race persons, non-Hispanic Whites, and Hispanics.

^{xvii} In cases of patients with some neurological conditions, such as progressive multiple sclerosis or Parkinson’s disease, ambulation may not improve even when the nursing home or home health service provides good care.

Treatment: Acute Care Hospitalization of Home Health Patients

Improvement in the acute care hospitalization outcome is demonstrated by a decrease in the percentage of patients who had to be admitted to the hospital; lower percentages are the desirable outcome. However, patients may need to go into the hospital while they are getting care; and, in some instances, this may not be avoidable even with good home health care. Acute care hospitalization may be avoided if the home health staff adequately checks the patient's health condition at each visit to detect problems early.

Figure 2.28. Home health care episodes with patients who were admitted to the hospital, by race (left) and ethnicity (right), 2002-2004



Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian or Alaska Native.

Source: CMS Outcome and Assessment Information Set, 2002-2004.

Denominator: Patients with home health care episodes.

Note: An episode is the time during which a patient is under the direct care of a home health agency. It starts with the beginning/resumption of care and finishes when the patient is discharged from home health care or transferred to an inpatient facility. Some patients have multiple episodes in a year.

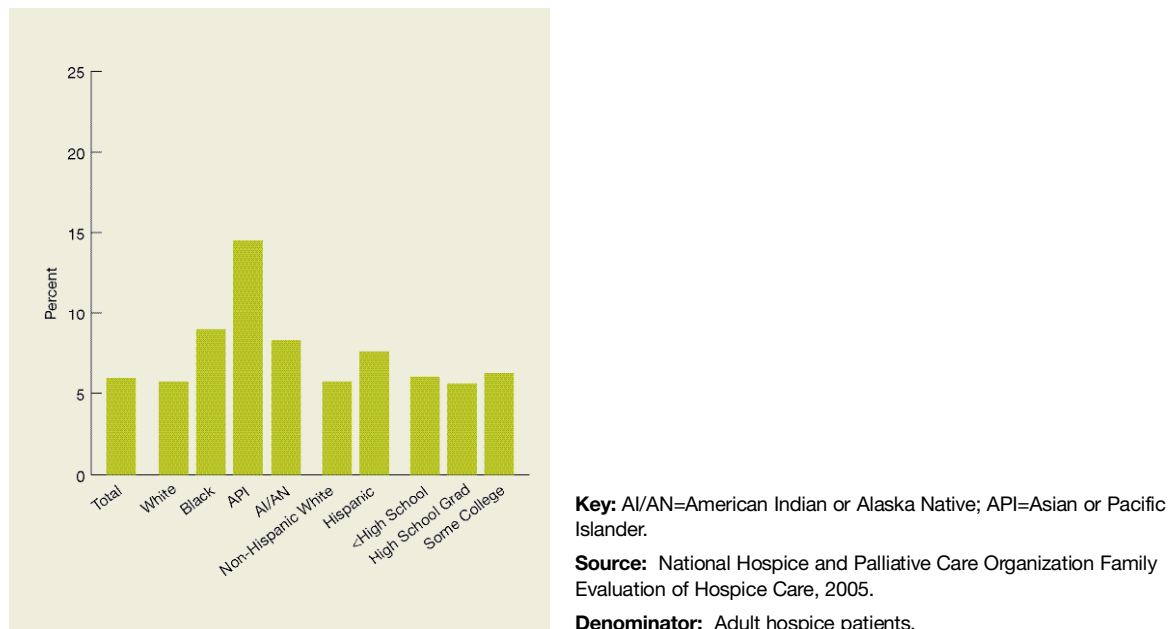
- In all 3 years, the proportion of home health care patients who were admitted to the hospital was significantly higher among Blacks and AI/ANs and significantly lower among Asians compared with Whites; the proportion was significantly higher among Hispanics compared with non-Hispanic Whites (Figure 2.28).
- In 2002 and 2004, multiple race persons were also significantly more likely than Whites to be hospitalized.
- From 2002 to 2004, the proportion of home health care patients who were admitted to the hospital increased significantly for Asians and AI/ANs.

Management: Hospice Care

Hospice care is generally delivered at the end of life to patients with a terminal illness or condition requiring comprehensive medical care; it also includes psychosocial and spiritual support for the patient and family. The goal of end-of-life care is to achieve a “good death” defined by the IOM as one that is “free from avoidable distress and suffering for patients, families, and caregivers; in general accord with the patient’s and families’ wishes; and reasonably consistent with clinical, cultural, and ethical standards.”⁶⁴ The National Hospice and Palliative Care Organization’s Family Evaluation of Hospice Care survey examines the quality of hospice care for patients and their family members. Family respondents report how well hospices respect patient wishes, communicate about illness, control symptoms, support dying on one’s own terms, and provide family emotional support.^{xviii, 65}

Pain management. Addressing the comfort aspects of care, such as relief from pain, fatigue, and nausea, is an important component of hospice care.^{xix}

Figure 2.29. Hospice patients who did not receive the right amount of medicine for pain, by race, ethnicity, and education, 2005



- The proportion of hospice patients whose families reported that they did not receive the right amount of medicine for pain was 5.9% in 2005 (Figure 2.29).

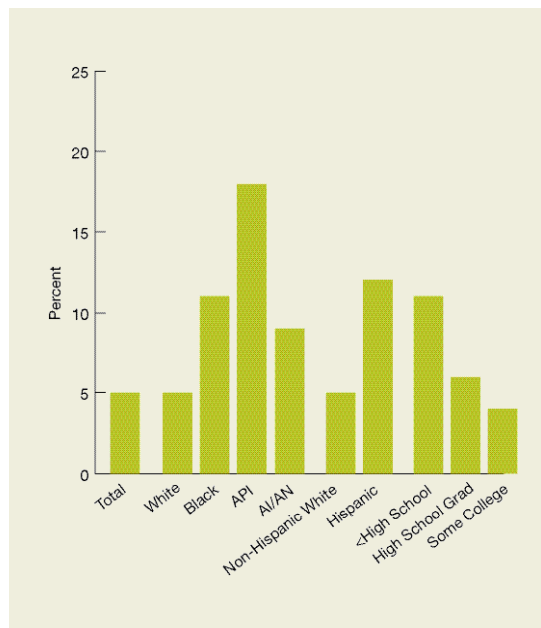
^{xviii} This survey provides unique insight into end-of-life care and captures information about a large proportion of hospice patients but is limited by non-random data collection and a response rate of about 40%. In addition, race and ethnicity were not reported by large numbers of respondents. These limitations should be considered when interpreting these findings.

^{xix} This measure is based on responses from a family member of the deceased. In interpreting it, it should be noted that family members may or may not be able to determine whether the right amount of medicine for pain was administered.

- The percentage of hospice patients who did not receive the right amount of medicine for pain was significantly higher among Blacks and APIs compared with Whites and among Hispanics compared with non-Hispanic Whites.

End-of-life care. End-of-life care should respect a patient’s stated end-of-life wishes. This includes shared communication and decisionmaking between providers, patients, and family members and respect of cultural beliefs.

Figure 2.30. Hospice patients who received care inconsistent with their stated end-of-life wishes, by race, ethnicity, and education, 2005



Key: AI/AN=American Indian or Alaska Native; API=Asian or Pacific Islander.

Source: National Hospice and Palliative Care Organization Family Evaluation of Hospice Care, 2005.

Denominator: Adult hospice patients.

- The overall proportion of hospice patients whose families reported that they did not receive end-of-life care consistent with their stated wishes was 5% in 2005 (Figure 2.30).
- The percentage of patients who did not receive care consistent with their stated end-of-life wishes was significantly higher among Blacks, APIs, and AI/ANs compared with Whites and among Hispanics compared with non-Hispanic Whites. This percentage was also significantly higher among hospice patients with less than a high school education and high school graduates compared with those that had any college education.

Patient Safety

Number of Americans that die each year from medical errors (1999 est)	44,000-98,000 ⁶⁶
Number of Americans that die in the hospital each year due to 18 types of medical injuries (2000 est)	at least 32,000 ⁶⁷
Rate of adverse drug reactions in hospital admissions.	2.0%-6.7% ^{68, 69, 70, 71}
Rate of adverse drug events among Medicare beneficiaries in ambulatory settings.	50 per 1,000 person-years
Percentage of serious, life-threatening, or fatal events deemed preventable	40%
Cost (in lost income, disability, and health care costs) attributable to medical errors (1999 est)	\$29 billion ⁶⁶
Groups with higher rates of some safety events	racial minorities ^{72, 73}

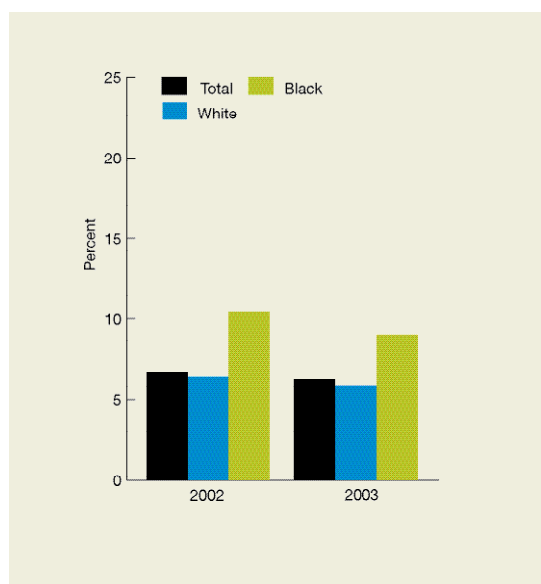
This section highlights six measures of patient safety in three areas: postoperative complications, other complications of hospital care, and complications of medications. (For findings related to all core measures of patient safety, see Table 2.2a.)

Postoperative Complications

Adverse health events can occur during episodes of care, especially during and right after surgery. Although some of the events may be related to a patient’s underlying condition, many of them can be avoided if adequate care is provided.

Postoperative care composite. Patients are vulnerable to experiencing a variety of complications soon after they undergo surgery. Complications may include, but are not limited to, pneumonia, bladder infection, and blood clots in the legs.

Figure 2.31. Surgical patients with postoperative care complications, by race, 2003 and 2004



Source: Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System, 2003-2004.

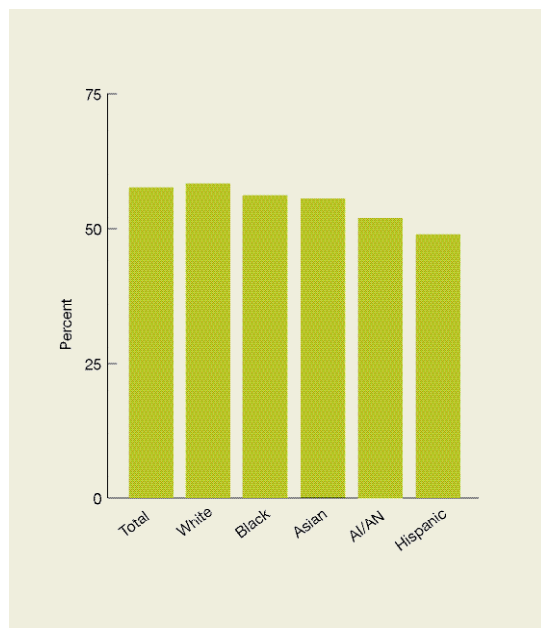
Denominator: Hospitalized Medicare patients having surgery, all ages.

Note: Postoperative care complications included in this composite are postoperative pneumonia, urinary tract infection, and venous thromboembolic event (blood clot in the leg).

- In both years, Black surgical patients had significantly higher rates of postoperative complications compared with White patients (Figure 2.31).
- From 2003 to 2004, rates of postoperative complications did not change significantly overall or for either racial group.

Postoperative wound infections. Infections acquired during hospital care (nosocomial infections) are among the most serious safety concerns. A common hospital-acquired infection is a wound infection following surgery. Hospitals can reduce the risk of wound infection after surgery by making sure patients get the right antibiotics at the right time on the day of their surgery. Research shows that surgery patients who get antibiotics within the hour before their operation are less likely to get wound infections; getting an antibiotic earlier, or after surgery begins, is not as effective. However, taking these antibiotics for more than 24 hours after routine surgery is usually not necessary and can increase the risk of side effects such as stomach aches, serious types of diarrhea, and antibiotic resistance. Among adult Medicare patients having surgery, the NHDR tracks a composite of two measures: receipt of antibiotics within 1 hour prior to surgical incision and discontinuation of antibiotics within 24 hours after end of surgery.

Figure 2.32. Appropriate timing of antibiotics received among adult surgical Medicare patients, by race/ethnicity, 2004



Key: AI/AN=American Indian or Alaska Native.

Source: Medicare Quality Improvement Organization Program, 2004.

Denominator: Medicare patients age 18 and over having surgery.

Note: Whites, Blacks, Asians, and AI/ANs are non-Hispanic groups.

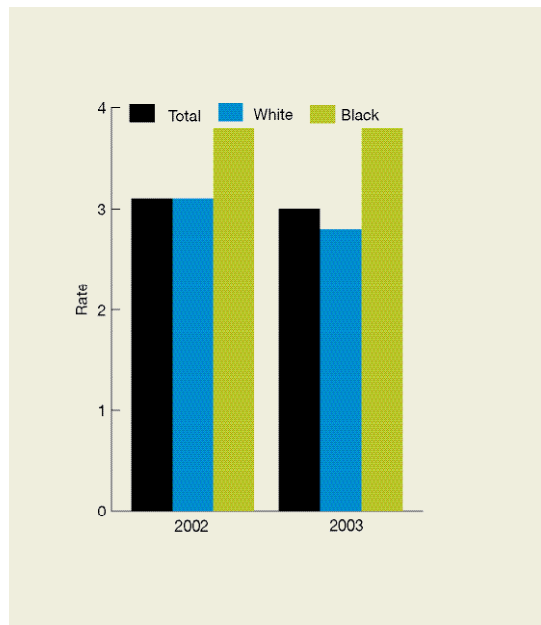
- In 2004, overall timing of antibiotics for adult Medicare patients having surgery was appropriate 57.7% of the time. Appropriately timed antibiotics were provided significantly less often to Blacks, AI/ANs, and Hispanics compared with Whites (Figure 2.32).

Other Complications of Hospital Care

Types of care delivered in hospitals, in addition to surgery, can place patients at risk for injury or death.

Adverse events associated with central venous catheters. Patients who require a central venous catheter to be inserted into the great vessels of their heart tend to be severely ill. However, the procedure itself can result in a number of infectious and non-infectious complications.

Figure 2.33. Central venous catheter complications, by race, 2003 and 2004



Source: Medicare Patient Safety Monitoring System, 2003 and 2004.

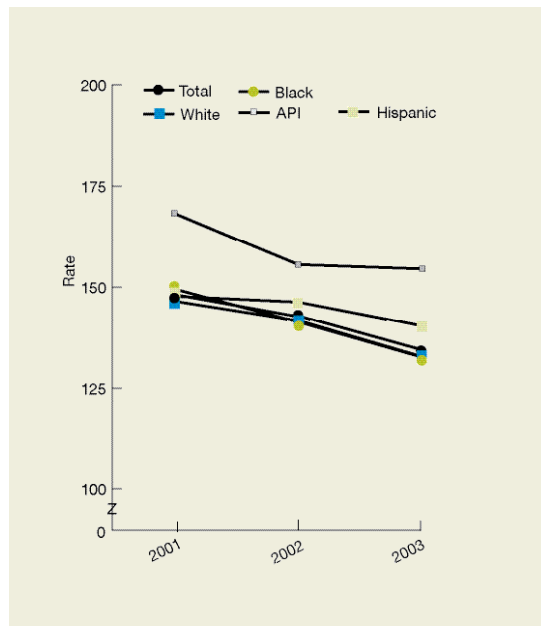
Denominator: Hospitalized Medicare patients with central venous catheter placement, all ages.

Note: Central venous catheter complications included in this composite are bloodstream infection and mechanical adverse events.

- No significant racial disparities in rates of central venous catheter complications among Medicare patients were observed (Figure 2.33).
- From 2003 to 2004, the rate of central venous catheter complications did not change significantly overall or for either racial group.

Deaths following complications of care. Many complications that arise during hospital stays cannot be prevented. However, rapid identification and aggressive treatment of complications may prevent these complications from leading to death. This indicator, also called “failure to rescue,” tracks deaths among patients whose hospitalizations are complicated by pneumonia, thromboembolic event, sepsis, acute renal failure, shock, cardiac arrest, and gastrointestinal bleeding or acute ulcer.

Figure 2.34. Deaths per 1,000 patients following complications of care by race/ethnicity, 2001-2003



Key: API=Asian or Pacific Islander.

Source: HUCP State Inpatient Databases disparities analysis file, 2001-2003.

Denominator: Patients less than 75 years old from U.S. community hospitals whose hospitalization is complicated by pneumonia, thromboembolic event, sepsis, acute renal failure, shock, cardiac arrest, and gastrointestinal bleeding or acute ulcer.

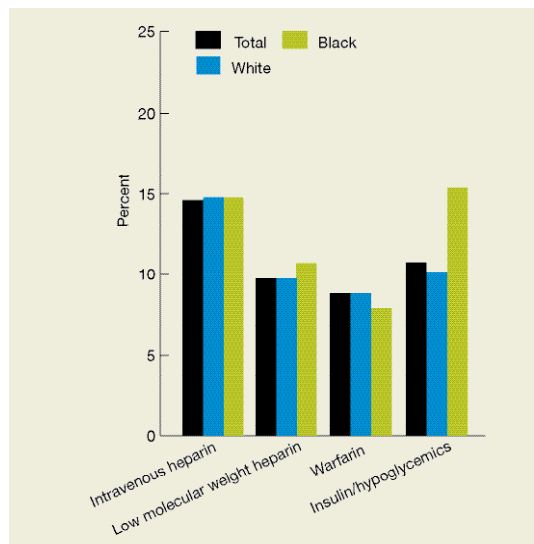
- In all 3 years, the rates of in-hospital deaths following complications of care were significantly higher among APIs compared with Whites (Figure 2.34).
- From 2001 to 2003, the rates of in-hospital deaths following complications of care decreased significantly overall and for all racial groups.

Complications of Medications

Complications of medication are common safety problems. Some adverse drug events may be related to misuse of medication but others are not. However, prescribing medications that are inappropriate for a specific population may increase the risk of adverse drug events.

Adverse drug events in the hospital. Some medications used in hospitals can cause serious complications. The Medicare Patient Safety Monitoring System tracks a number of adverse drug events including serious bleeding associated with intravenous heparin, low molecular weight heparin, or warfarin and hypoglycemia associated with insulin or oral hypoglycemics.

Figure 2.35. Medication-related adverse drug events among Medicare inpatients, by race, 2004



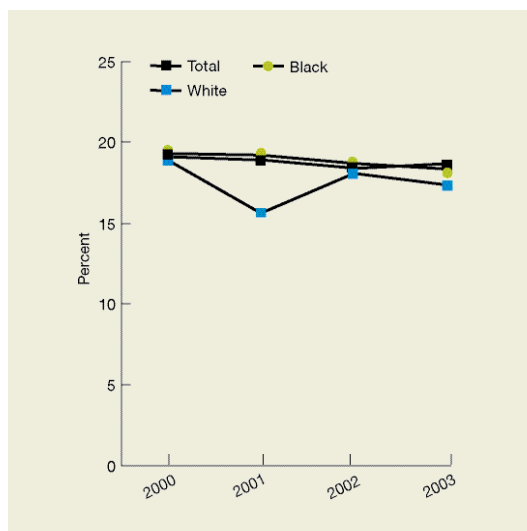
Source: Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System, 2004.

Denominator: Random sample of Medicare medical records, all ages.

- In 2004, adverse drug events in the hospital related to some frequently used medications were not uncommon.
- Hospitalized Black Medicare beneficiaries were significantly more likely to have adverse drug events associated with insulin or oral hypoglycemics than White Medicare beneficiaries (Figure 2.35).

Inappropriate medication use among the elderly. Some drugs that are appropriate for some patients are considered potentially harmful for elderly patients but nevertheless are prescribed to them.^{xx, 74}

Figure 2.36. Inappropriate medication use by the elderly, 2000-2003



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2000-2003.

Reference population: Civilian noninstitutionalized population age 65 and over.

- There were no statistically significant differences in rates of inappropriate medication use among elderly Blacks and Whites (Figure 2.36).
- From 2000 to 2003, rates of inappropriate medication use did not change significantly for any population.

^{xx} Drugs that should always be avoided for elderly patients include barbiturates, flurazepam, meprobamate, chlorpropamide, meperidine, pentazocine, trimethobenzamide, belladonna alkaloids, dicyclomine, hyoscyamine, and propantheline. Drugs that should often be avoided for elderly patients include carisoprodol, chlorzoxazone, cyclobenzaprine, metaxalone, methocarbamol, amitriptyline, chlordiazepoxide, diazepam, doxepin, indomethacin, dipyridamole, ticlopidine, methyl dopa, reserpine, disopyramide, oxybutynin, chlorpheniramine, cyproheptadine, diphenhydramine, hydroxyzine, promethazine, and propoxyphene.

Timeliness

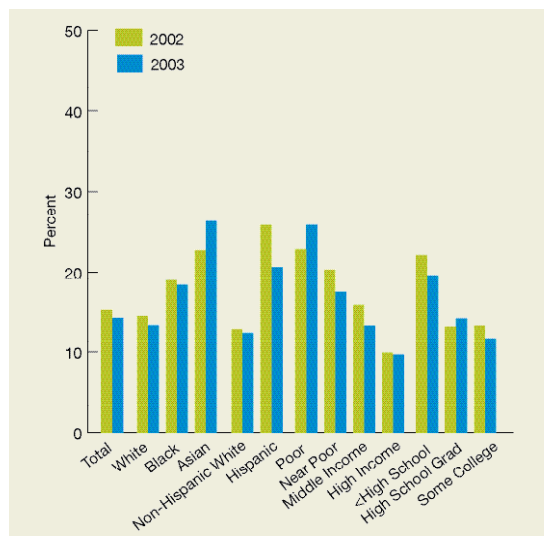
Timeliness is the health care system's capacity to provide care quickly after a need is recognized. For patients, lack of timeliness can result in emotional distress, physical harm, and financial consequences.^{75, 76} For example, stroke patients' mortality and long-term disability are largely influenced by the timeliness of therapy.^{77, 78} Timely delivery of appropriate care can also help reduce mortality and morbidity for chronic conditions such as chronic kidney disease,⁷⁹ and timely antibiotic treatments are associated with improved clinical outcomes.⁸⁰ Timely delivery of childhood immunizations helps maximize protection from vaccine-preventable diseases while minimizing risks to the child and reducing the chance of disease outbreaks.⁸¹

Early care for comorbid conditions has been shown to reduce hospitalization rates and costs for Medicare beneficiaries.⁸² Some research suggests that, over the course of 30 years, the costs of treating diabetic complications can approach \$50,000 per patient.⁸³ Early care for complications in patients with diabetes can reduce overall costs of the disease.⁸⁴ Timely outpatient care can reduce admissions for pediatric asthma, which account for \$1,257 million in total hospitalization charges annually.⁸⁵ Measures of timeliness highlighted in this section include getting care for illness or injury as soon as wanted and emergency department visits where the patient left without being seen. (For findings related to all core measures of timeliness, see Tables 2.3a and 2.3b.)

Getting Care for Illness or Injury As Soon As Wanted

The ability of patients to receive illness and injury care in a timely fashion is a key element in a patient-focused health care system.

Figure 2.37. Adults age 18 and over who reported sometimes or never getting care for illness or injury as soon as wanted in the past year, by race, ethnicity, income, and education, 2002-2003



Source: Medical Expenditure Panel Survey, 2002 and 2003.

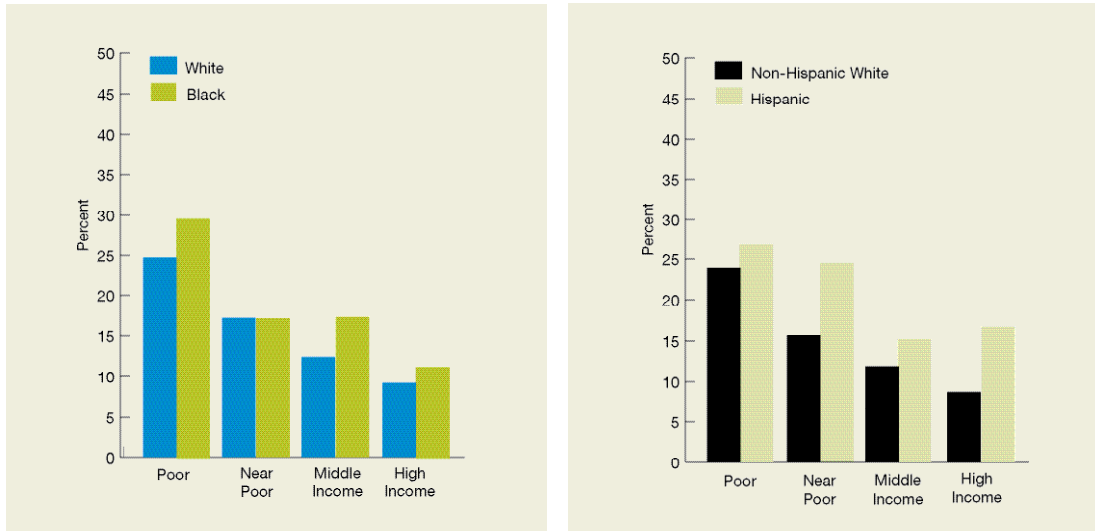
Reference population: Civilian noninstitutionalized population age 18 and older.

- In both years, the proportion of adults who reported sometimes or never getting care for illness or injury as soon as wanted was significantly higher among Blacks compared with Whites; among Hispanics compared with non-Hispanic Whites; among poor, near poor, and middle income individuals compared with high income individuals; and among persons with less than a high school education compared with persons with some college. In 2002, the proportion was also significantly higher among Asians compared with Whites, but in 2003, the difference between Asians and Whites was eliminated (Figure 2.37).

- From 2002 to 2003, the proportion of adults who reported sometimes or never getting care for illness or injury as soon as wanted decreased significantly for the total population and among Whites, non-Hispanic Whites, high income individuals, and persons with at least some college education.

Racial and ethnic minorities are disproportionately of lower socioeconomic status. To distinguish the effects of race, ethnicity, income, and education on timeliness of primary care, this measure is stratified by income and education level.

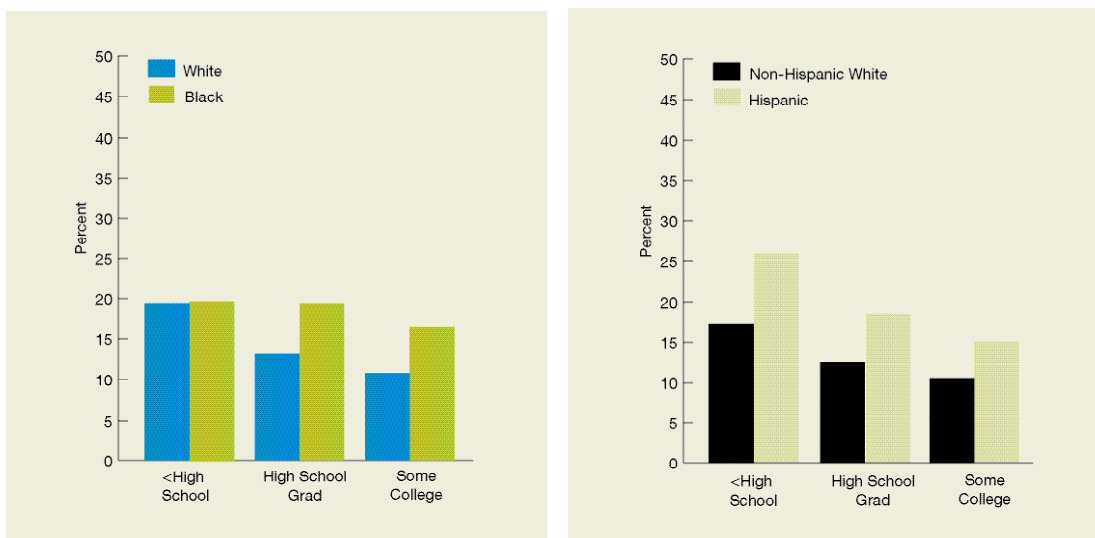
Figure 2.38. Adults who reported sometimes or never getting care for illness or injury as soon as wanted in the past year, by race (left) and ethnicity (right), stratified by income, 2003



Source: Medical Expenditure Panel Survey, 2003.

Reference population: Civilian noninstitutionalized population age 18 and older.

Figure 2.39. Adults who reported sometimes or never getting care for illness or injury as soon as wanted in the past year, by race (left) and ethnicity (right), stratified by education, 2003



Source: Medical Expenditure Panel Survey, 2003.

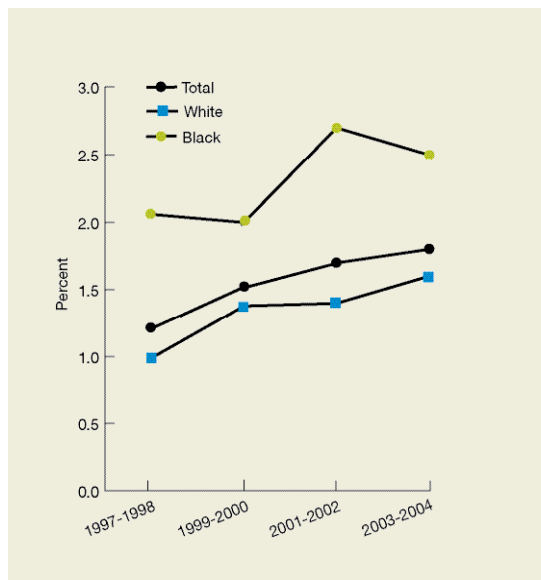
Reference population: Civilian noninstitutionalized population age 18 and older.

- Socioeconomic status explains some but not all of the ethnic differences in timeliness of primary care.
- After stratification by income and education, near poor and high income Hispanics and Hispanics with a high school education or less were still significantly more likely than respective non-Hispanic Whites to report problems getting care for illness or injury as soon as they wanted (Figures 2.38 and 2.39). In contrast, all Black-White differences were not significant.

Emergency Department Visits Where Patient Left Without Being Seen

In 2001, patients who had an emergency department (ED) visit in the United States spent an average of 3.2 hours waiting to be seen.⁸⁶ This may reflect the 20% increase in ED visit volumes over the past 10 years, as the number of ED facilities has decreased by 15%.⁸⁶ There are many reasons that a patient seeking care in an emergency department may leave without being seen, but long waits tend to exacerbate this problem.

Figure 2.40. Emergency department visits in which patient left without being seen, by race, 1997-2004



Source: National Hospital Ambulatory Medical Care Survey, 1997-2004.

Denominator: Visits by patients (of all ages) to the EDs of non-Federal, short-stay, and general hospitals, exclusive of military, and Department of Veterans Affairs hospitals.

- In all time periods, Blacks were significantly more likely to leave before being seen compared with Whites (Figure 2.40).
- Between the 1997-1998 and 2003-2004 time periods, the overall proportion of emergency department visits in which the patient left before being seen increased significantly from 1.2% to 1.8%. A significant increase was also seen among Whites.

Patient Centeredness

The Institute of Medicine identifies patient centeredness as a core component of quality health care.² Patient centeredness is defined as: “[H]ealth care that establishes a partnership among practitioners, patients, and their families (when appropriate) to ensure that decisions respect patients’ wants, needs, and preferences and that patients have the education and support they need to make decisions and participate in their own care.”⁸⁷ Patient centeredness “encompasses qualities of compassion, empathy, and responsiveness to the need, values, and expressed preferences of the individual patient.”⁸⁸

Patient centered care is supported by good patient-provider communication so that patients’ needs and wants are understood and addressed and patients understand and participate in their own care.^{87, 89, 90, 91} This style of care has been shown to improve patients’ health and health care.^{89, 90, 92, 93, 94} Unfortunately, there are barriers to good communication: about a third of Americans are suboptimally “health literate,”^{95, 96} which means they lack the “capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.”⁹⁷ They receive less preventive care,⁹⁸ and have poorer understanding of their conditions and care,^{95, 99, 100} higher use of emergency and inpatient services, higher rates of rehospitalization,^{101, 102} lower adherence to medications,¹⁰¹ and lower participation in medical decisionmaking.¹⁰³ Low health literacy costs an estimated \$29 billion to \$69 billion per year.¹⁰⁴ Providers also differ in communication proficiency, including varied listening skills and views of symptoms and treatment effectiveness, compared with their patients’ views.¹⁰⁵

Patient centeredness has been shown to reduce both underuse and overuse of medical services¹⁰⁶ and can reduce strains on system resources or save money by reducing the number of diagnostic tests and referrals.⁹² Additional factors influencing patient centeredness and patient-provider communication include language barriers, racial/ethnic concordance between the patient and provider, effects of disabilities on patients’ health care experiences, and providers’ cultural competency. Efforts to improve these possible impediments to patient centeredness are underway. For example, the Office of Minority Health, part of the U.S. Department of Health and Human Services, has developed a set of Cultural Competency Curriculum Modules which aim to equip providers with cultural and linguistic competencies to help eliminate disparities.^{xxi, 107}

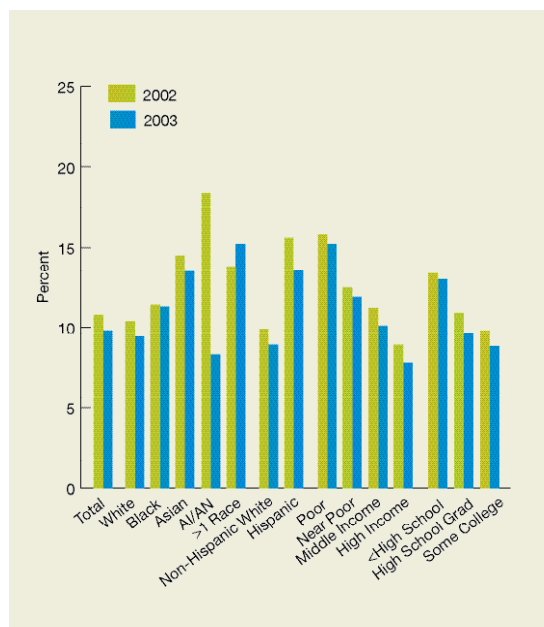
The NHDR includes one core measure of patient centeredness—a composite measure on the patient experience of care. In addition, because having a diverse workforce of health care providers may be an important component of patient-centered health care for many patients, this year’s report includes two new supplemental measures of workforce diversity—race/ethnicity of the Nation’s physician workforce and race/ethnicity of the physicians who spent at least half of the work week in direct patient care—and one supplemental measure on patient-provider communication in the hospital.

^{xxi} This online program (available at www.thinkculturalhealth.org) is accredited for 9 Continuing Medical Education credits for physicians and 10.8 and 0.9 Continuing Education Units for nurses and pharmacists, respectively.

Patient Experience of Care

Using methods developed for the CAHPS® (Consumer Assessment of Healthcare Providers and Systems¹⁰⁸) survey, the NHDR uses a composite measure which combines four measures of the patient experience of care into a single core measure—providers who sometimes or never listen carefully, explain things clearly, respect what patients say, and spend enough time with patients. (For findings related to all core measures of patient centeredness, see Tables 2.3a and 2.3b.)

Figure 2.41. Adults whose health providers sometimes or never listened carefully, explained things clearly, respected what they had to say, and spent enough time with them, by race, ethnicity, income, and education, 2002 and 2003



Key: AI/AN=American Indian or Alaska Native.

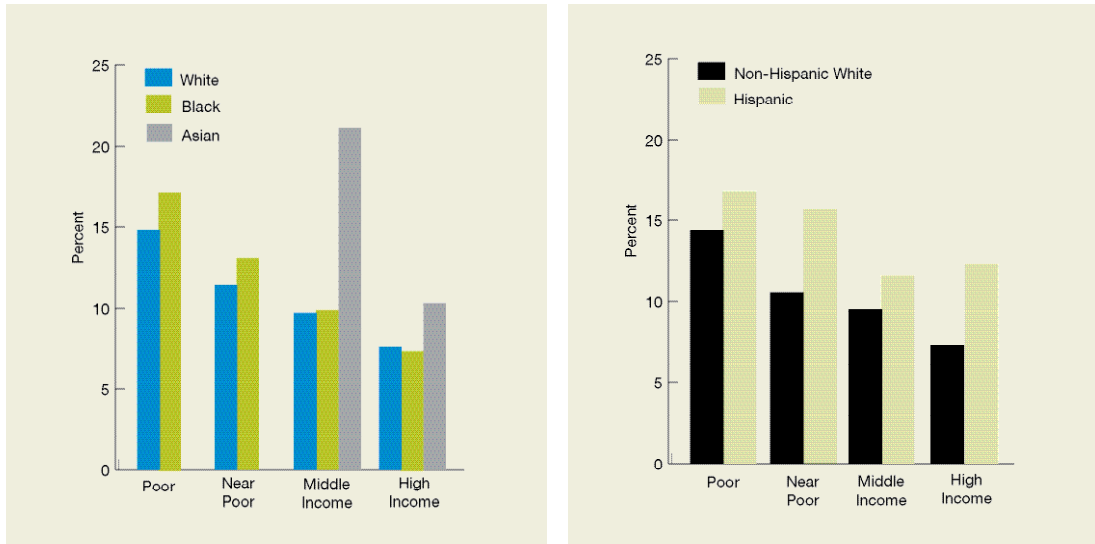
Source: Medical Expenditure Panel Survey, 2002 and 2003.

Denominator: Civilian noninstitutionalized population age 18 and older.

- In both years, the proportion of adults whose health providers sometimes or never listened carefully, explained things clearly, respected what they had to say, or spent enough time with them was significantly higher among Asians compared with Whites; among Hispanics compared with non-Hispanic Whites; among poor, near poor, and middle income individuals compared with high income individuals; and among persons with less than a high school education compared with persons with some college education (Figure 2.41).
- In 2002, the proportion was also significantly higher among AI/ANs compared with Whites, but in 2003, this difference was eliminated. In 2003, the proportion was significantly higher among Blacks compared with Whites.
- From 2002 to 2003, the proportion of adults whose health providers sometimes or never listened carefully, explained things clearly, respected what they had to say, or spent enough time with them improved significantly for the total population and among Whites, non-Hispanic Whites, high income individuals, and persons with a high school education or more.

Racial and ethnic minorities are disproportionately of lower socioeconomic status. To distinguish the effects of race, ethnicity, income, and education on patient-provider communication, this measure is stratified by income and education level.

Figure 2.42. Adults whose health providers sometimes or never listened carefully, explained things clearly, respected what they had to say, and spent enough time with them by race (left) and ethnicity (right), stratified by income, 2003

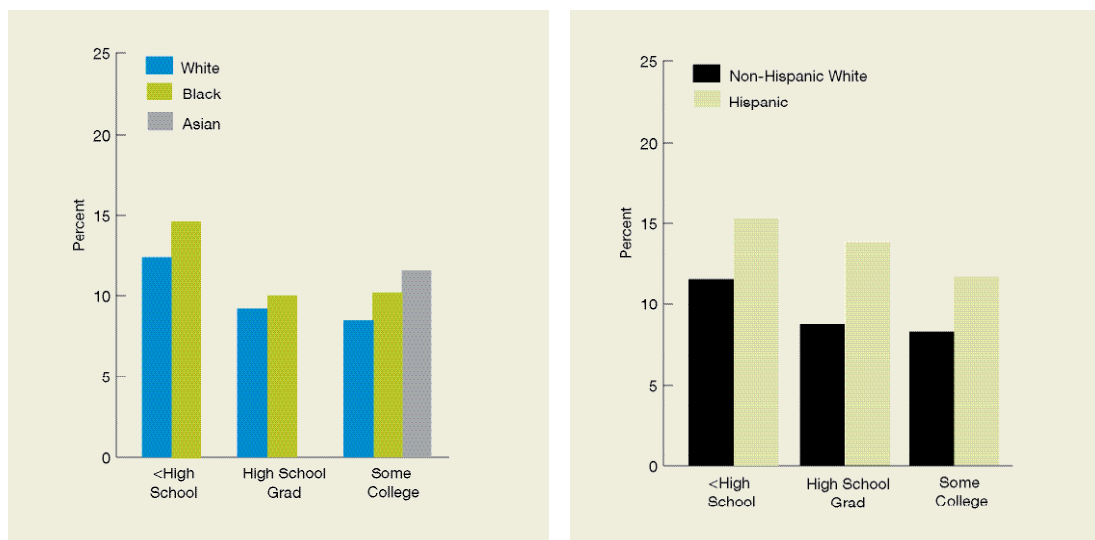


Source: Medical Expenditure Panel Survey, 2003.

Denominator: Civilian noninstitutionalized population age 18 and older.

Note: Sample sizes were too small to provide estimates for poor and near poor Asians.

Figure 2.43. Adults whose health providers sometimes or never listened carefully, explained things clearly, respected what they had to say, and spent enough time with them by race (left) and ethnicity (right) stratified by education, 2003



Source: Medical Expenditure Panel Survey, 2003.

Denominator: Civilian noninstitutionalized population age 18 and older.

Note: Sample sizes were too small to provide estimates for Asians with less than a high school education and high school graduates. The seemingly large difference between middle income Asians and Whites is not statistically significant due to small sample sizes.

- Socioeconomic status explains some but not all of the racial and ethnic differences in patient-provider communication.
- Within income and education levels, there are no significant disparities by race.
- Hispanics of every income and education level, with the exception of poor and middle income Hispanics, are significantly more likely than respective non-Hispanic Whites to report poor communication with their providers (Figures 2.42 and 2.43).

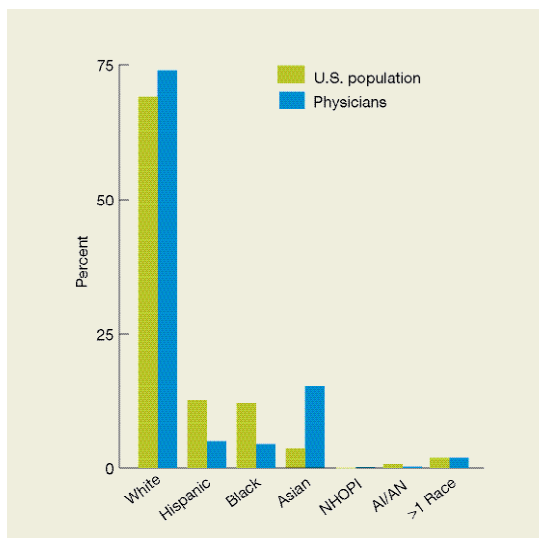
Workforce Diversity

Health care workforce diversity is considered to be important in health care research, education, administration, and policy to provide both role models and to shape a health care system that meets the needs of all individuals. Diversity not only increases the opportunities for race- and language-concordant physician visits but also has the potential to improve cultural competence at the system, organizational, and provider levels through appropriate program design and policies, organizational commitment to culturally competent care, and cross-cultural education of colleagues.¹⁰⁹ Below are presented measures of physician diversity; subsequent reports will focus on registered nurses and licensed practical nurses.

Diversity of Physician Workforce

Racial and ethnic minority groups accounted for 70% of the total population growth in the decade between 1988 and 1998. By 2030, 40% of Americans will belong to a racial or ethnic minority group. Minority physicians are more likely than their White colleagues to practice in underserved minority communities.^{110, 111}

Figure 2.44. Race/ethnicity of U.S. physicians and surgeons versus the U.S. population, 2000



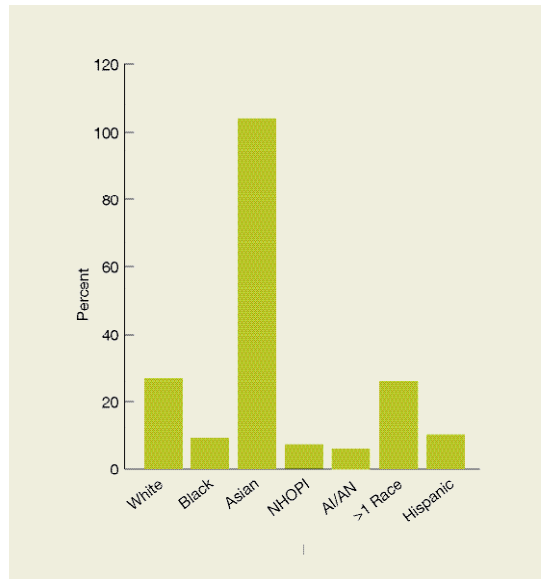
Key: NHOPI = Native Hawaiian or Other Pacific Islander; AI/AN=American Indian or Alaska Native.

Source: U.S. Census 2000 and Census 2000 Equal Employment Opportunity tabulations.

Note: White, Black, Asian, NHOPI, AI/AN, and >1 race are non-Hispanic groups.

- In 2000, about three-quarters of U.S. physicians were White (Figure 2.44).
- Relative to the U.S. population, Hispanic, Black, NHOPI, and AI/AN individuals were underrepresented in the physician workforce, while Whites and Asians were overrepresented. Although the Asian physician workforce includes many international medical graduates from India, Pakistan, and the Philippines, not all Asian subgroups are overrepresented.

Figure 2.45. Physicians per 100,000 population by race/ethnicity, 2000



Key: AI/AN = American Indian or Alaskan Native; NHOPI = Native Hawaiian or Other Pacific Islander.

Source: U.S. Census 2000.

Note: Hispanics include all races. Racial groups are non-Hispanic.

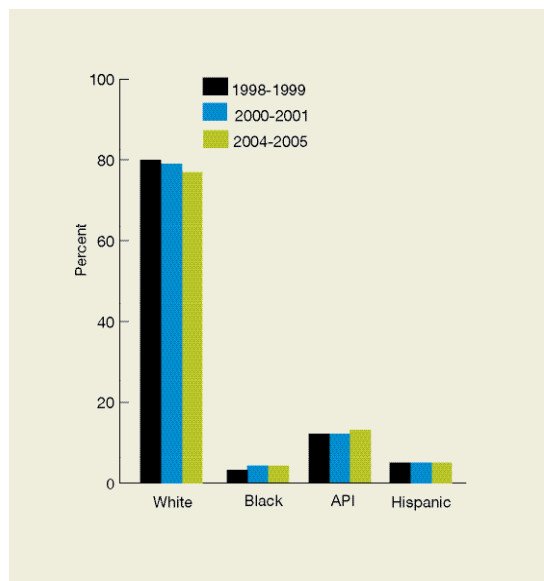
- In 2000, there were 104 Asian^{xxii} physicians per 100,000 Asians and 27 White physicians per 100,000 Whites. Other races and Hispanics had only a third to a fifth as many physicians per 100,000 residents of the same race or ethnicity as Whites (Figure 2.45).
- These data are for all physicians, including those who work in research, education, administration, and elsewhere. All of these physicians, therefore, are not available to see patients in clinical practice.

Race/Ethnicity of Physician Workforce in Direct Patient Care

Research has shown that Blacks and Hispanics often seek care from physicians of their own race or ethnicity because of personal preference and language, not just because of geographic convenience.¹¹² Racial and ethnic concordance leads to increases in participatory visits, patient satisfaction, and reports of receipt of preventive care.^{113, 114}

^{xxii}The racial designation of “Asian” includes many different ethnicities, some of which may be overrepresented in the physician workforce while others may be underrepresented.

Figure 2.46. Active U.S. physicians in direct patient care, by race/ethnicity, 1998-1999, 2000-2001, and 2004-2005



Key: API=Asian or Pacific Islander.

Source: Community Tracking Study Physician Survey, 1998-1999, 2000-2001, 2004-2005.

Note: White, Black, and API are non-Hispanic groups.

Reference population: Active, non-Federal, office-based and hospital-based physicians who spent at least 20 hours a week in direct patient care, all ages.

- Over time, the proportion of active physicians (i.e., excluding those not providing clinical care or working fewer than 20 hours per week) who were White declined from 80% in 1998-1999 to 77% in 2004-2005 (Figure 2.46). A significant change was not observed for other racial/ethnic groups.

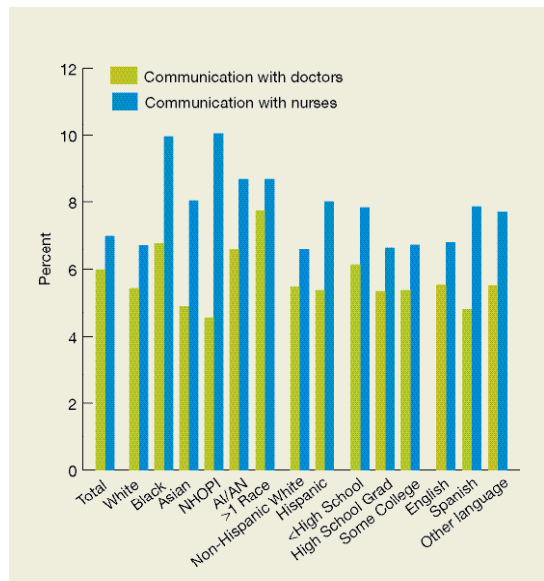
Focus on Patient Centeredness in Hospitals

When patients are admitted to a hospital, they often have limited control over many aspects of their lives. The need for effective patient-provider communication is nowhere greater than in the hospital to ensure that medical decisions are consistent with the patient's needs and preferences. In addition, patients can help providers avoid problems with medications and problems that may arise after they are discharged from the hospital.

To begin to capture information about patient perceptions of care when they are hospitalized, the Centers for Medicare & Medicaid Services and the Agency for Healthcare Research and Quality partnered to develop a standardized instrument, the CAHPS[®] Hospital Survey (H-CAHPS). In 2005, 254 hospitals across the United States volunteered to use this survey. In total, 84,779 completed surveys were received from respondents with an average response rate of 44%. Although it is not nationally representative, the sample of hospitals and respondents is comparable to the national distribution of hospitals registered with the American Hospital Association.¹¹⁵

The 2006 NHDR presents two composite measures from H-CAHPS in order to summarize the quality of communication that hospital patients experience during their stay. "Communication with doctors" summarizes responses to three questions, examining how often patients were treated with courtesy and respect by their doctors, how often doctors listened carefully, and how often doctors explained things in a way that patients were able to understand. "Communication with nurses" combines the same three questions in relation to nurses.

Figure 2.47. Hospital patients who reported sometimes or never having good communications with doctors and with nurses by race, education, and language, 2005



Key: NH/OP1 = Native Hawaiian or Other Pacific Islander; AI/AN = American Indian or Alaska Native.

Source: Agency for Healthcare Research and Quality, CAHPS® Hospital Survey, 2005.

Reference population: Hospital patients, all ages.

- In 2005, 6% of hospital patients reported sometimes or never having had good communication with their doctors during their stay and 7% reported sometimes or never having had good communication with their nurse during their stay (Figure 2.47).
- Communication problems with both doctors and nurses were more likely to be reported by Blacks and multiple race individuals compared with Whites and by individuals with less than a high school education compared with individuals with any college education.
- Hispanics and individuals who mainly speak Spanish at home were more likely to report communication problems with nurses but not with doctors compared with non-Hispanic Whites and individuals who mainly speak English at home, respectively.

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Table 2.1a. Racial and Ethnic Differences in Effectiveness of Care

Core Report Measure	Racial Difference ⁱ				Ethnic Difference ⁱⁱ	
	Black	Asian	NHOPI	AI/AN	>1 Race	Hispanic
Cancer						
Adults age 50 and over who received recommended colorectal screening ⁱⁱⁱ	↓	↓		=	=	↓
Rate of colorectal cancers diagnosed at late stage ^{iv}	↓		↑	↑		↑
Cancer deaths per 100,000 population per year for colorectal cancer ^v	↓		↑	↑		↑
Diabetes						
Adults with diabetes who had hemoglobin A1c measurement, retinal eye exam, and foot exam in the past year ^{vi}	=					↓
Hospital admissions for lower extremity amputations in patients with diabetes per 1,000 population ^{vii}	↓					
End Stage Renal Disease						
Hemodialysis patients with urea reduction ratio 65% or higher ^{viii}	↓	↑		=	=	↑
Dialysis patients registered on the waiting list for transplantation ^{ix}	↓		↑	↓		↓
Heart Disease						
Adults who were obese given advice about exercise	=					↓
Current smokers age 18 and over receiving advice to quit smoking ^{vi}	=		↓			↓
Hospital care for heart attack patients ^x	↓		↓	=		↓
Deaths per 1,000 adult admissions with acute myocardial infarction (heart attack) ^{xi}	=		=			=
Hospital care for heart failure patients ^x	=		=	↓		↓

ⁱ Compared with Whites.

ⁱⁱ Compared with non-Hispanic Whites.

ⁱⁱⁱ Source: National Health Interview Survey, 2003.

^{iv} Source: Surveillance, Epidemiology, and End Results Program, 2003. This source does not provide rate estimates for Asians and NHOPIs separately but in aggregate as Asian and Pacific Islander. This source did not collect information for >1 race.

^v Source: National Vital Statistics System-Mortality, 2003. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asian and Pacific Islander. This source did not collect information for >1 race.

^{vi} Source: Medical Expenditure Panel Survey, 2003.

^{vii} Source: National Hospital Discharge Survey, 2002-2004. This source did not collect information for >1 race. Missing rates preclude analysis by ethnicity.

^{viii} Source: CMS End Stage Renal Disease Clinical Performance Measures Project, 2004.

^{ix} U.S. Renal Data System, 2003. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asian and Pacific Islander. This source did not collect information for >1 race.

^x Source: CMS Quality Improvement Organization Program, 2004. This source categorizes race/ethnicity information as a single item: non-Hispanic White, non-Hispanic Black, Hispanic, Asian and Pacific Islander, American Indian and Alaska Native. These contrasts compare each group with non-Hispanic Whites.

^{xi} Source: HCUP State Inpatient Databases disparities analysis file, 2003. This source categorizes race/ethnicity information as a single item: non-Hispanic White, non-Hispanic Black, Hispanic, Asian and Pacific Islander. These contrasts compare each group with non-Hispanic Whites.

Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian or Alaska Native.

Chapter 2. Quality of Health Care

Table 2.1a. Racial and Ethnic Differences in Effectiveness of Care (continued)

Core Report Measure	Racial Difference ⁱ				Ethnic Difference ⁱⁱ	
	Black	Asian	NHOPI	AI/AN	>1 Race	Hispanic
HIV and AIDS						
HIV patients with CD4 <200 who receive PCP prophylaxis ⁱⁱⁱ	=					=
New AIDS cases per 100,000 population 13 and over ^{iv}	↓	↑		↓		↓
Maternal and Child Health						
Pregnant women receiving prenatal care in first trimester ^v	↓	=	=	↓		↓
In infant mortality per 1,000 live births, birthweight <1,500 grams ^v	↓	=		=		=
Children 19-35 months who received all recommended vaccines ^{vi}	↓	=		=	↓	↓
Adolescents (13-15) who received 3 or more doses of hepatitis B vaccine ^{vii}	=					=
Hospital admissions for pediatric gastroenteritis per 100,000 population ^{viii}	=	=				↓
Children 2-17 with advice about healthy eating ^{ix}	=					↓
Children 2-17 with a vision check ^{ix}	=					=

ⁱ Compared with Whites.

ⁱⁱ Compared with non-Hispanic Whites.

ⁱⁱⁱ Source: HIV Research Network, 2003. This source categorizes race/ethnicity information as a single item: non-Hispanic White, non-Hispanic Black, Hispanic, Asian and Pacific Islander, American Indian and Alaska Native. These contrasts compare each group with non-Hispanic Whites.

^{iv} Source: Centers for Disease Control and Prevention, 2004. This source categorizes race/ethnicity information as a single item: non-Hispanic White, non-Hispanic Black, Hispanic, Asian and Pacific Islander, American Indian and Alaska Native. These contrasts compare each group with non-Hispanic Whites.

^v Source: National Vital Statistics System-Nativity, 2003. This source did not collect information for >1 race.

^{vi} Source: National Immunization Survey, 2004.

^{vii} Source: National Health Interview Survey, 2004.

^{viii} Source: HCUP State Inpatient Databases disparities analysis file, 2003. This source categorizes race/ethnicity information as a single item: non-Hispanic White, non-Hispanic Black, Hispanic, Asian and Pacific Islander. These contrasts compare each group with non-Hispanic Whites.

^{ix} Source: Medical Expenditure Panel Survey, 2003.

Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian or Alaska Native.

Key to Symbols Used in Quality of Health Care Tables:

= Group and comparison group receive about same quality of health care or have similar outcomes.

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Blank cell: Reliable estimate for group could not be made.

Chapter 2. Quality of Health Care

Table 2.1a. Racial and Ethnic Differences in Effectiveness of Care (continued)

Core Report Measure	Racial Difference ⁱ					Ethnic Difference ⁱⁱ
	Black	Asian	NHOPI	AI/AN	>1 Race	Hispanic
Mental Health and Substance Abuse						
Adults with major depressive episode in the past year who received treatment for the depression in the past year ⁱⁱⁱ	=					=
Suicide deaths per 100,000 population ^{iv}	↑		↑	↑		↑
People age 12 and over who needed treatment for substance abuse who received such treatment ⁱⁱⁱ	↑			↓		=
People age 12 and over who received substance abuse treatment who completed treatment course ^v	↓					
Respiratory Diseases						
People 65 and over who ever received pneumococcal vaccination ^{vi}	↓	↓	=	=		↓
Hospital care for pneumonia patients ^{vii}	↓		↓	=		↓
Rate antibiotics prescribed at visits with a diagnosis of common cold per 10,000 population ^{viii}	=					
Tuberculosis patients who complete course of treatment within 12 months of treatment initiation ^{ix}	=		=	↓		↓
Hospital admissions for asthma per 100,000 population under 18 ^x	↓		=			↓

ⁱ Compared with Whites.

ⁱⁱ Compared with non-Hispanic Whites.

ⁱⁱⁱ Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2004.

^{iv} Source: National Vital Statistics System-Mortality, 2003. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asian and Pacific Islander. This source did not collect information for >1 race.

^v Source: Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set, 2003.

^{vi} Source: National Health Interview Survey, 2004.

^{vii} Source: CMS Quality Improvement Organization program, 2004. This source categorizes race/ethnicity information as a single item: non-Hispanic White, non-Hispanic Black, Hispanic, Asian and Pacific Islander, American Indian and Alaska Native. These contrasts compare each group with non-Hispanic Whites.

^{viii} Source: National Ambulatory Medical Care Survey/National Hospital Ambulatory Medical Care Survey, 2003-2004. This source did not collect information for >1 race. Missing rates preclude analysis by ethnicity.

^{ix} Source: CDC National TB Surveillance System, 2002. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asian and Pacific Islander. This source did not collect information for >1 race.

^x Source: HCUP State Inpatient Databases disparities analysis file, 2003. This source categorizes race/ethnicity information as a single item: non-Hispanic White, non-Hispanic Black, Hispanic, Asian and Pacific Islander. These contrasts compare each group with non-Hispanic Whites.

Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian or Alaska Native.

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Table 2.1a. Racial and Ethnic Differences in Effectiveness of Care (continued)

Core Report Measure	Racial Difference ⁱ					Ethnic Difference ⁱⁱ
	Black	Asian	NHOPI	AI/AN	>1 Race	Hispanic
Nursing Home, Home Health, and Hospice Care						
Long-stay nursing home residents who were physically restrained ⁱⁱⁱ	↑		↓	↓		↓
High-risk long-stay nursing home residents with pressure sores ⁱⁱⁱ	↓		↑	↓		↓
Short-stay nursing home residents who have pressure sores ⁱⁱⁱ	↓		↓	=		↓
Home health care patients who get better at walking or moving around ^{iv}	=	=	↑	=	=	=
Home health care patients who had to be admitted to the hospital ^{iv}	↓	↑	=	↓	↓	↓

ⁱ Compared with Whites.

ⁱⁱ Compared with non-Hispanic Whites.

ⁱⁱⁱ Source: CMS Minimum Data Set, 2004. This source categorizes race/ethnicity information as a single item: non-Hispanic White, non-Hispanic Black, Hispanic, Asian and Pacific Islander. Contrasts compare each group with non-Hispanic Whites.

^{iv} Source: CMS Outcome and Assessment Information Set, 2004.

Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian or Alaska Native.

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Blank cell: Reliable estimate for group could not be made.

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Table 2.1b. Socioeconomic Differences in Effectiveness of Care

Core Report Measure	Income Difference ⁱ			Educational Difference ⁱⁱ		Insurance Difference ⁱⁱⁱ
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
Cancer						
Adults age 50 and over who received recommended colorectal screening ^{iv}	↓	↓	↓	↓	↓	↓
Cancer deaths per 100,000 population per year for colorectal cancer ^v				↓	↓	
Diabetes						
Adults with diabetes who had hemoglobin A1c measurement, retinal eye exam, and foot exam in the past year ^{vi}	↓	↓	↓	=	=	
Heart Disease						
Adults who were obese given advice about exercise ^{vi}	↓	↓	↓	↓	↓	↓
Current smokers age 18 and over receiving advice to quit smoking ^{vi}	=	=	=	=	=	↓
Maternal and Child Health						
Pregnant women receiving prenatal care in first trimester ^{vii}				↓	↓	
Infant mortality per 1,000 live births, birthweight <1,500 grams ^{vii}				↓	↓	
Children 19-35 months who received all recommended vaccines ^{viii}	↓	↓	↓			
Adolescents (13-15) who received 3 or more doses of hepatitis B vaccine ^{iv}	=	=	=			↓
Children 2-17 with advice about healthy eating ^{vi}	↓	↓	↓			↓
Children 2-17 with a vision check ^{vi}	=	↓	=			↓

ⁱ Compared with persons with family incomes 400% of Federal poverty thresholds or above.

ⁱⁱ Compared with persons with any college education.

ⁱⁱⁱ Compared with persons under 65 with any private health insurance.

^{iv} Source: National Health Interview Survey, 2003.

^v Source: National Vital Statistics System-Mortality, 2003. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asian and Pacific Islander. This source did not collect information for >1 race.

^{vi} Source: Medical Expenditure Panel Survey, 2003.

^{vii} Source: National Vital Statistics System-Nativity, 2003. This source did not collect information for >1 race.

^{viii} Source: National Immunization Survey, 2004.

Key: HS=high school.

Chapter 2. Quality of Health Care

Table 2.1b. Socioeconomic Differences in Effectiveness of Care (continued)

Core Report Measure	Income Difference ⁱ			Educational Difference ⁱⁱ		Insurance Difference ⁱⁱⁱ
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
Mental Health and Substance Abuse						
Adults with a major depressive episode in the past year who received treatment for the depression in the past year ^{iv}	=	↓	=	=	↓	
Suicide deaths per 100,000 population ^v				↓	↓	
People age 12 and over who needed treatment for substance abuse who received such treatment ^{iv}	↑	↑	=	↑	=	
Patients receiving substance abuse treatment who completed treatment ^{vi}				↓	=	
Respiratory Diseases						
Persons 65 and over who ever received pneumococcal vaccination ^{vii}	↓	↓	=	↓	↓	

ⁱ Compared with persons with family incomes 400% of Federal poverty thresholds or above.

ⁱⁱ Compared with persons with any college education.

ⁱⁱⁱ Compared with persons under 65 with any private health insurance.

^{iv} Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2004.

^v Source: National Vital Statistics System-Mortality, 2003. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asian and Pacific Islander. This source did not collect information for >1 race.

^{vi} Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set, 2003.

^{vii} Source: National Health Interview Survey, 2004.

Key: HS=high school.

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Blank cell: Reliable estimate for group could not be made.

Chapter 2. Quality of Health Care

Table 2.2a. Racial and Ethnic Differences in Patient Safety

Core Report Measure	Racial Difference ⁱ					Ethnic Difference ⁱⁱ
	Black	Asian	NHOPI	AI/AN	>1 Race	Hispanic
Postoperative Complications						
Composite of postoperative pneumonia, urinary tract infection, and venous thromboembolic events ⁱⁱⁱ	↓					
Postoperative hip fractures per 1,000 surgical discharges age 18 and over ^{iv}	=					=
Other Complications of Hospital Care						
Composite of bloodstream infections and mechanical complications ⁱⁱⁱ	=					
Iatrogenic pneumothorax per 1,000 relevant discharges ^{iv}	=					↑
Deaths following complications of care ^{iv}	=		↓			↓
Complications of Medications						
Elderly with inappropriate medications ^v	=					↑

ⁱ Compared with Whites.

ⁱⁱ Compared with non-Hispanic Whites.

ⁱⁱⁱ Source: Medicare Patient Safety Monitoring System, 2004.

^{iv} Source: HCUP State Inpatient Databases disparities analysis file, 2003. This source categorizes race/ethnicity information as a single item: non-Hispanic White, non-Hispanic Black, Hispanic, Asian and Pacific Islander. These contrasts compare each group with non-Hispanic Whites.

^v Source: Medical Expenditure Panel Survey, 2003. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asian and Pacific Islander. This source did not collect information for >1 race.

Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian or Alaska Native.

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Blank cell: Reliable estimate for group could not be made.

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Table 2.3a. Racial and Ethnic Differences in Timeliness and Patient Centeredness

Core Report Measure	Racial Difference ⁱ					Ethnic Difference ⁱⁱ
	Black	Asian	NHOPI	AI/AN	>1 Race	Hispanic
Timeliness						
Adults who sometimes or never can get care for illness or injury as soon as wanted ⁱⁱⁱ	↓	=				↓
Emergency department visits in which the patient left without being seen ^{iv}	↓					
Patient Centeredness						
Adults whose health providers sometimes or never listened carefully, explained things, showed respect, and spent enough time with them ⁱⁱⁱ	↓	↓		=	↓	↓
Children whose health providers sometimes or never listened carefully, explained things, showed respect, and spent enough time with them ⁱⁱⁱ	=	↓			=	=

ⁱ Compared with Whites.

ⁱⁱ Compared with non-Hispanic Whites.

ⁱⁱⁱ Source: Medical Expenditure Panel Survey, 2003. This source did not collect information for >1 race.

^{iv} Source: National Hospital Ambulatory Medical Care Survey – Emergency Department, 2003-2004. Missing rates preclude analysis by ethnicity. Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian or Alaska Native.

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↓ Group receives poorer quality of health care than the comparison group or has worse outcomes.

Blank cell: Reliable estimate for group could not be made.

Chapter 2. Quality of Health Care

Table 2.3b. Socioeconomic Differences in Timeliness and Patient Centeredness

Core Report Measure	Income Difference ⁱ			Educational Difference ⁱⁱ		Insurance Difference ⁱⁱⁱ
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
Timeliness						
Adults who sometimes or never can get care for illness or injury as soon as wanted ^{iv}	↓	↓	↓	↓	=	↓
Emergency department visits in which the patient left without being seen ^v						↓
Patient Centeredness						
Adults whose health providers sometimes or never listened carefully, explained things, showed respect, and spent enough time with them ^{iv}	↓	↓	↓	↓	=	↓
Children whose health providers sometimes or never listened carefully, explained things, showed respect, and spent enough time with them ^{iv}	↓	↓	↓			=

ⁱ Compared with persons with family incomes 400% of Federal poverty thresholds or above.

ⁱⁱ Compared with persons with any college education.

ⁱⁱⁱ Compared with persons under 65 with any private health insurance.

^{iv} Source: Medical Expenditure Panel Survey, 2003. This source did not collect information for >1 race.

^v Source: National Hospital Ambulatory Medical Care Survey – Emergency Department, 2003-2004. Missing rates preclude analysis by ethnicity. Key: HS=high school.

Key to Symbols Used in Quality of Health Care Tables:

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↓ Group receives poorer quality of health care than the comparison group or has worse outcomes.

Blank cell: Reliable estimate for group could not be made.

References

1. Agency for Healthcare Research and Quality. Your Guide to Choosing Quality Health Care. Rockville, MD: Agency for Healthcare Research and Quality; 2001. <http://www.ahrq.gov/consumer/qnt/>.
2. Institute of Medicine Committee on Quality of Health Care in America. Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, DC: National Academies Press, 2001.
3. National Cancer Institute. SEER Cancer Statistics Review, 1975-2003. Table I-1: Estimated new cancer cases and deaths for 2006. Available at: http://seer.cancer.gov/csr/1975_2003/results_single/sect_01_table.01.pdf. Accessed July 17, 2006.
4. Miniño AM, Heron MP, Smith BL. Deaths: preliminary data for 2004. National Vital Stat Rep 2006 Jun 28;54(19):1-52. Hyattsville, MD: U.S. Department of Health and Human Services, National Center for Health Statistics. Available at: http://www.cdc.gov/nchs/data/nvsr/nvsr54/nvsr54_19.pdf. Accessed July 13, 2006.
5. National Heart, Lung, and Blood Institute. Fact book fiscal year 2005. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institutes; 2006. Available at: <http://www.nhlbi.nih.gov/about/05factbk.pdf>. Accessed April 27, 2006.
6. Maciosek MV, Coffield AB, Edwards NM, et al. Priorities among effective clinical preventive services: Results of a systematic review and analysis. Am J Prev Med. 2006 Jul;31(1):52-61.
7. Making Cancer Health Disparities History. Report of the Trans-HHS Cancer Health Disparities Progress Review Group. Submitted to the Secretary, U.S. Department of Health and Human Services; March 2004. Available at: <http://www.chdprg.omhrc.gov/pdf/chdprg.pdf>. Accessed May 8, 2006.
8. DeNavas-Walt C, Proctor BD, Lee CH. Current Population Reports. Income, Poverty, and Health Insurance Coverage in the United States: 2004, Washington DC: U.S. Census Bureau. August 2005. Available at: <http://www.census.gov/prod/2005pubs/p60-229.pdf>. Accessed June 7, 2006.
9. National Diabetes Information Clearinghouse. National diabetes statistics. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, National Diabetes Information Clearinghouse; 2005. Available at: <http://diabetes.niddk.nih.gov/dm/pubs/statistics/indexhtm>. Accessed April 27, 2006.
10. Centers for Disease Control and Prevention. National diabetes fact sheet: general information and national estimates on diabetes in the United States, 2003. Rev. ed. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2004. Available at: http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2003.pdf. Accessed November 7, 2005.
11. National Quality Forum. National voluntary consensus standards for adult diabetes care: A consensus report. Washington, DC: National Quality Forum; 2002.
12. National Diabetes Quality Improvement Alliance. National Diabetes Quality Improvement Alliance Performance Measurement Set for Adult Diabetes. Chicago, IL: NDQIA; 2003.
13. National Diabetes Education Program. [A joint program of the National Institutes of Health and the Centers for Disease Control and Prevention.] Guiding Principles for Diabetes Care: For Health Care Providers. Publication No. 99-4343. April 2004. Available at: http://ndep.nih.gov/diabetes/pubs/GuidPrin_HC_Eng.pdf. Accessed June 7, 2006.
14. U.S. Renal Data System. USRDS 2005 Annual data report: atlas of end-stage renal disease in the United States. Bethesda, MD: National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases; 2005. Available at: <http://www.usrds.org/atlas.htm>. Accessed November 7, 2005.
15. National Kidney and Urologic Diseases Information Clearinghouse. [A service of the National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health]. Peritoneal dialysis dose and adequacy. Available at: <http://kidney.niddk.nih.gov/kudiseases/pubs/peritonealdose/index.htm>. Accessed June 29, 2006.
16. National Kidney and Urologic Diseases Information Clearinghouse. [A service of the National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes for Health]. Treatment Methods for Kidney Failure: Transplantation. Publication No. 06-4687. May 2006. Available at: <http://kidney.niddk.nih.gov/kudiseases/pubs/transplant/>. Accessed June 7, 2006.

Chapter 2. Quality of Health Care

17. Scientific Registry of Transplant Recipients. Wait list and transplant activity for kidneys, 1995-2004 [PowerPoint slide]. Available at: <http://www.ustransplant.org/csr/current/fastfacts/datatour.aspx>. Accessed June 29, 2006.
18. Thom T, Haase N, Rosamond W, et al. Heart disease and stroke statistics—2006 update. A report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. *Circulation*. 2006 Feb 14;113(6):e85-151. Epub 2006 Jan 11.
19. Ogden CL, Carroll MD, Curtin LR, et al. Prevalence of overweight and obesity in the United States, 1999-2004. *JAMA*. 2006 Apr 5;295(13):1549-55. Available at: <http://jama.ama-assn.org/cgi/content/full/295/13/1549>. Accessed June 22, 2006.
20. Centers for Disease Control and Prevention. Overweight and obesity. [Web site]. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition and Physician Activity. Available at: <http://www.cdc.gov/nccdphp/dnpa/obesity/>. Accessed May 8, 2006.
21. Centers for Disease Control and Prevention. Racial/ethnic and socioeconomic disparities in multiple risk factors for heart disease and stroke—United States, 2003. *MMWR Morb Mortal Wkly Rep*. 2005 Feb 11;54(5):113-7.
22. U.S. Preventive Services Task Force. Screening for obesity in adults: recommendations and rationale. Rockville, MD, U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality, U.S. Preventive Services Task Force; 2003. Available at <http://www.ahrq.gov/clinic/3rduspstf/obesity/obesrr.htm>. Accessed May 8, 2006.
23. Diaz VA, Mainous AG 3rd, Koopman RJ, Geesey ME. Undiagnosed obesity: implications for undiagnosed hypertension, diabetes, and hypercholesterolemia. *Fam Med*. 2004 Oct;36(9):639-44. Available at <http://www.stfm.org/fmhub/fm2004/October/Vanessa639.pdf>. Accessed May 8, 2006.
24. Centers for Disease Control and Prevention. Cases of HIV Infection and AIDS in the United States, 2004. *HIV/AIDS Surveillance Report*. Volume 16. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2005. Available at: <http://www.cdc.gov/hiv/topics/surveillance/resources/reports/2004report/default.htm>. Accessed June 23, 2006.
25. Glynn M, Rhodes P. Estimated HIV prevalence in the United States at the end of 2003. 2005 National HIV Prevention Conference, Atlanta, GA, June 12-15, 2005; Abstract 595.
26. The Henry J. Kaiser Family Foundation. HIV/AIDS Policy Fact Sheet. Federal funding for HIV/AIDS: the FY 2005 budget request; February 2004. Available at: <http://www.kff.org/hiv/aids/upload/Federal-Funding-for-HIV-AIDS-The-FY-2005-Budget-Request.pdf>. Accessed July 13, 2006.
27. Health Resources and Services Administration, HIV/AIDS Bureau. Ryan White Care Act: A Compilation of the Ryan White Care Act of 1990, as amended by the Ryan White Care Act Amendments of 1996 [Pub.L. 104-146] and the Ryan White Care Act Amendments of 2000 [Pub. L.106-345]. Available at: <http://hab.hrsa.gov/law/compile.htm>. Accessed June 29, 2006.
28. Clinical management of the HIV-infected adult: a manual for midlevel clinicians. Rockville, MD: Health Resources and Services Administration; revised 2003. http://www.seatec.emory.edu/clinicalprotocols/clinical_protocols_manual2003.pdf Accessed May 8, 2006.
29. HIV and AIDS—United States, 1981-2000. *MMWR Morb Mortal Wkly Rep*. 2001 Jun 1;50(21):430-4. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5021a2.htm> Accessed May 5, 2006.
30. Centers for Disease Control and Prevention. Cases of HIV Infection and AIDS in the United States, 2003. *HIV/AIDS Surveillance Report*, 2003. Vol. 15. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention; 2004. <http://www.cdc.gov/hiv/topics/surveillance/resources/reports/2003report/default.htm> Accessed May 8, 2006.
31. National Highway Traffic Safety Administration. Traffic safety facts - 2004 data - alcohol. Washington, DC: U.S. Department of Transportation, National Center for Statistics and Analysis; 2004. Available at: <http://www.nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2004/809905.pdf>. Accessed July 26, 2005.
32. Eaton DK, Kann L, Kinchen S, et al. Youth risk behavior surveillance—United States, 2005. *MMWR Surveill Summ*. 2006 Jun 9;55(5):1-108. Available at: <http://www.cdc.gov/mmwr/PDF/SS/SS5505.pdf>. Accessed June 21, 2006.

Chapter 2. Quality of Health Care

33. Substance Abuse and Mental Health Services Administration. Results from the 2004 National Survey on Drug Use and Health: national findings. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Office of Applied Studies; 2005. NSDUH Series H-28, DHHS Pub. No. SMA 05-4062. Available at: <http://www.oas.samhsa.gov/nsduh/2k4nsduh/2k4Results/2k4Results.htm>. Accessed September 29, 2006.
34. Substance Abuse and Mental Health Services Administration. The NSDUH report: Depression among adolescents. December 30, 2005. Available at: <http://www.oas.samhsa.gov/2k5/youthDepression/youthDepression.cfm>.
35. Substance Abuse and Mental Health Services Administration. The NSDUH report: Depression among adults. November 18, 2005. Available at: <http://www.oas.samhsa.gov/2k5/depression/depression.cfm>.
36. Riola SA, Nguyen TA, Greden JF, King CA. Prevalence of depression by race/ethnicity: findings from the National Health and Nutrition Examination Survey III. *Am J Public Health*. 2005 Jun;95(6):998:1000. Available at: <http://www.ajph.org/cgi/reprint/95/6/998>. Accessed May 1, 2006.
37. Kessler RC, Chiu WT, Demler O, et al. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry*. 2005 Jun;62(6):617-27. Erratum 12 month prevalence of DSM-IV disorders by sex and cohort Table 2. Available at: http://www.hcp.med.harvard.edu/ncs/ftpd/ncsr_by_gender_and_age.pdf.
38. Mark T, Coffey RM, McKusick D, et al. National expenditures for mental health services and substance abuse treatment, 1991-2001. Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment, Center for Mental Health Services; 2005. DHHS Pub. No. SMA 05-3999. Available at: <http://www.samhsa.gov/spendingestimates/SEPGenRpt013105v2BLX.pdf>. Accessed November 7, 2005.
39. Demyttenaere K, Bruffaerts R, Posada-Villa J, et al; WHO World Mental Health Survey Consortium. Prevalence, severity, and unmet need for treatment of mental disorders in the World Health Organization World Mental Health Surveys. *JAMA*. 2004 Jun 2;291(21):2581-90.
40. Rockett IR, Thomas BM. Reliability and sensitivity of suicide certification in higher-income countries. *Suicide Life Threat Behav*. 1999 Summer;29(2):141-9.
41. Rockett IR, Smith GS. Suicide misclassification in an international context. Chapter 26 in *Centers for Disease Control and Prevention. Proceedings of the International Collaborative Effort on Injury Statistics*. Hyattsville, MD: National Center for Health Statistics; 1995. DHHS Pub No. (PHS) 95-1252.
42. Joe S, Kaplan MS. Suicide among African American men. *Suicide Life Threat Behav*. 2001 Spring;31(Suppl):106-21.
43. Andres VR. Ethnic/racial misidentification in death: a problem which may distort suicide statistics. *Forensic Sci*. 1977 May-Jun;9(3):179-83.
44. Warshauer ME, Monk M. Problems in suicide statistics for whites and blacks. *Am J Public Health*. 1978 Apr;8(4):383-8.
45. Department of Health and Human Services. *Mental Health: Culture, Race, and Ethnicity—A Supplement to Mental Health: A Report of the Surgeon General*. Rockville, MD: US Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services. 2001. Available at: <http://download.ncadi.samhsa.gov/ken/pdf/SMA-01-3613/sma-01-3613A.pdf>. Accessed June 7, 2006.
46. National Heart, Lung, and Blood Institute. *Morbidity & mortality: 2004 chart book on cardiovascular, lung, and blood diseases*. U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute; 2004. Available at: http://www.nhlbi.nih.gov/resources/docs/04_chtbk.pdf. Accessed November 7, 2005.
47. Lethbridge-Cejku M, Rose D, Vickerie J. Summary health statistics for U.S. Adults: National Health Interview Survey, 2004. National Center for Health Statistics. *Vital Health Stat* 10(228); 2006. Available at: http://www.cdc.gov/nchs/data/series/sr_10/sr10_228.pdf. Accessed June 21, 2006.
48. Bloom B, Dey AN. Summary health statistics for U.S. children: National Health Interview Survey, 2004. National Center for Health Statistics. *Vital Health Stat*. 10(227); 2006. Available at: http://www.cdc.gov/nchs/data/series/sr_10/sr10_227.pdf. Accessed March 3, 2006.
49. National Institute of Allergy and Infectious Diseases. *The common cold: overview*. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Institute for Allergies and Infectious Diseases; 2004. Available at: <http://www.3niaid.nih.gov/healthscience/healthtopics/colds/overview.htm>. Accessed November 7, 2005.

50. National Institute of Allergy and Infectious Diseases. Pneumococcal pneumonia: cause. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Institute of Allergy and Infectious Diseases, Office of Communications and Public Liaison, 2004. Available at: <http://www3.niaid.nih.gov/healthscience/healthtopics/pneumonia/Cause.htm>. Accessed July 13, 2006.
51. Fendrick AM, Monto AS, Nightengale B, et al. The economic burden of non-influenza-related viral respiratory tract infection in the United States. *Arch Intern Med.* 2003 Feb 24;163(4):487-94.
52. Davis MM. Race-based immunization recommendations and the potential to reduce health disparities. *JAMA.* 2004 May 12;291(18):2253-55.
53. Flannery B, Schrag S, Bennett NM, et al; Active Bacterial Core Surveillance/Emerging Infections Program Network. Impact of childhood vaccination on racial disparities in invasive *Streptococcus pneumoniae* infections. *JAMA.* 2004 May 12;291(18):2197-2203.
54. National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Expert Panel Report 2: Guidelines for the diagnosis and management of asthma. Bethesda MD: US Department of Health and Human Services, National Institutes of Health, 1997; publication no. 97-4051. Available at <http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf>.
55. National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Key Clinical Activities for Quality Asthma Care: Recommendations of the National Asthma Education and Prevention Program. *MMWR Recommendations and Reports.* 2003 March 28; 52(RR06):1-8. Available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5206a1.htm>
56. National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Quick reference for the NAEPP Expert Panel Report: Guidelines for the diagnosis and management of asthma—Update on selected topics 2002. Bethesda MD: U.S. Department of Health and Human Services, National Institutes of Health; 2002; Publication No. 02-5075. Available at: <http://www.nhlbi.nih.gov/guidelines/asthma/asthsumm.htm>.
57. National Asthma Education and Prevention Program. National Asthma Education and Prevention Program Expert Panel Report: Guidelines for the Diagnosis and Management of Asthma Update on Selected Topics—2002. *J Allergy Clin Immunol* 2002 Nov;110(5 pt 2):S141-219.
58. American Lung Association. Pneumonia fact sheet; June 2005. <http://www.lungusa.org/site/pp.asp?c=dvLUK900E&b=35692> Accessed May 8, 2006.
59. Jones A. National Nursing Home Survey: 1999 summary. *Vital Health Stat.* 2002 Jun(152):11–16.
60. National Center for Health Statistics. Table 1: Number of home health and hospice care agencies, current patients, and discharges: United States, 1992, 1994, 1996, 1998 and 2000; 2004. Available at: ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Datasets/NHHCS/Trends/TABLE1HHC2000.pdf. Accessed November 4, 2004.
61. National Center for Health Statistics. National home and hospice care survey – data highlights. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics; 2004. Available at: <http://www.cdc.gov/nchs/about/major/nhhcsd/nhhcshomecare2.htm>. Accessed May 17, 2006.
62. Centers for Medicare & Medicaid Services. NHE tables: table 2: national health expenditures aggregate amounts and average annual percent change, by type of expenditure: selected calendar years 1960-2004. Baltimore, MD: Centers for Medicaid & Medicare Services. Available at: <http://www.cms.hhs.gov/NationalHealthExpendData/downloads/tables.pdf>. Accessed June 29, 2006
63. Hoover DR, Crystal S, Kumar R, et al. Medical expenditures during the last year of life: findings from the 1992-1996 Medicare current beneficiary survey. *Health Serv Res.* 2002 Dec;37(6):1625-42.
64. Field MJ, Cassell CK (Eds.). Institute of Medicine, Committee on Care at the End of Life. *Approaching Death: Improving Care at the End of Life.* Washington, DC: National Academy Press; 1997.
65. Connor SR, Teno J, Spence C, Smith N. Family evaluation of hospice care: results from voluntary submission of data via website. *J Pain Symptom Manage.* 2005 Jul; 30(1):9-17.

Chapter 2. Quality of Health Care

66. Institute of Medicine, Committee on Quality of Health Care in America. *To Err is Human: Building a Safer Health System*. (Kohn LT, Corrigan JM, Donaldson MS, Eds.) Washington, DC: National Academy Press; 2000.
67. Zhan C, Miller MR. Excess length of stay, charges, and mortality attributable to medical injuries during hospitalization. *JAMA* 2003;290(14):1868-74.
68. Lazarou J, Pomeranz BH, Corey PN. Incidence of adverse drug reactions in hospitalized patients: a meta-analysis of prospective studies. *JAMA*. 1998 Apr 15;279(15):1200-5.
69. Lesar TS, Lomaestro B, Pohl H. Medication-prescribing errors in a teaching hospital. A 9-year experience. *Arch Intern Med*. 1997 Jul 28;157(14):1569-76.
70. Classen DC, Pestotnik SL, Evans RS, Lloyd JF, Burke JP. Adverse drug events in hospitalized patients. Excess length of stay, extra costs, and attributable mortality. *1997 Jan 22-29;277(4):301-6*.
71. Bates DW, Cullen DJ, Laird N, et al. Incidence of adverse drug events and potential adverse drug events. Implications for prevention. ADE Prevention Study Group. *JAMA*. 1995 Jul 5;274(1):29-34.
72. Romano PS, Geppert JJ, Davies S, et al. A national profile of patient safety in U.S. hospitals. *Health Aff (Millwood)*. 2003 Mar-Apr;22(2):154-66.
73. Coffey RM, Andrews RM, Moy E. Racial, ethnic, and socioeconomic disparities in estimates of AHRQ Patient Safety Indicators. *Med Care*. 2005; 43(3 Suppl): I48-57.
74. Zhan C, Sangl J, Bierman AS, et al. Potentially inappropriate medication use in the community-dwelling elderly: findings from the 1996 Medical Expenditure Panel Survey. *JAMA*. 2001 Dec 12; 286(22):2823-9.
75. Leddy KM, Kaldenberg DO, Becker BW. Timeliness in ambulatory care treatment. An examination of patient satisfaction and wait times in medical practices and outpatient test and treatment facilities. *J Ambul Care Manage*. 2003 Apr-Jun;26(2):138-49.
76. Boudreau RM, McNally C, Rensing EM, et al. Improving the timeliness of written patient notification of mammography results by mammography centers. *Breast J*. 2004 Jan-Feb;10(1):10-9.
77. Schellinger PD, Warach S. Therapeutic time window of thrombolytic therapy following stroke. *Curr Atheroscler Rep*. 2004 Jul;6(4):288-94.
78. Kwan J, Hand P, Sandercock P. Improving the efficiency of delivery of thrombolysis for acute stroke: a systematic review. *QJM*. 2004 May;97(5):273-9.
79. Kinchen KS, Sadler J, Fink N, et al. The timing of specialist evaluation in chronic kidney disease and mortality. *Ann Intern Med*. 2002 Sep 17;137(6):479-86.
80. Houck PM, Bratzler DW. Administration of first hospital antibiotics for community-acquired pneumonia: does timeliness affect outcomes? *Curr Opin Infect Dis*. 2005 Apr;18(2):151-6.
81. Luman ET, Barker LE, Shaw KM, et al. Timeliness of childhood vaccinations in the United States: days undervaccinated and number of vaccines delayed. *JAMA*. 2005 Mar 9;293(10):1204-11.
82. Himelhoch S, Weller WE, Wu AW, et al. Chronic medical illness, depression, and use of acute medical services among Medicare beneficiaries. *Med Care*. 2004 Jun;42(6):512-21.
83. Caro JJ, Ward AJ, O'Brien JA. Lifetime costs of complications resulting from type 2 diabetes in the U.S. *Diabetes Care*. 2002 Mar;25(3):476-81.
84. Ramsey SD, Newton K, Blough D, et al. Patient-level estimates of the cost of complications in diabetes in a managed-care population. *Pharmacoeconomics*. 1999 Sep;16(3):285-95.
85. Calculated from: Agency for Healthcare Research and Quality. Healthcare Cost and Utilization Project. 2003 Kids' Inpatient Database. Available at: <http://hcup.ahrq.gov/HCUInet.asp>
86. McCaig LF, Burt CW. National Hospital Ambulatory Medical Care Survey: 2002 emergency department summary. *Adv Data*. 2004 Mar 18(340):1-34.

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87. Institute of Medicine, Committee on the National Quality Report on Health Care Delivery. *Envisioning the National Health Care Quality Report*. (Hurtado MP, Swift EK, Corrigan JM, Eds.) Washington, DC: National Academy Press; 2001.
88. Institute of Medicine, Committee on Quality of Health Care in America. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academy Press; 2001.
89. Stewart M, Brown JB, Donner A, et al. The impact of patient-centered care on outcomes. *J Fam Pract*. 2000 Sep;49(9):796-804.
90. Anderson EB. Patient-centeredness: a new approach. *Nephrol News Issues*. 2002 Nov;16(12):80-2.
91. Michie S, Miles J, Weinman J. Patient-centredness in chronic illness: what is it and does it matter? *Patient Educ Couns*. 2003 Nov;51(3):197-206.
92. Little P, Everitt H, Williamson I, et al. Observational study of effect of patient centredness and positive approach on outcomes of general practice consultations. *BMJ*. 2001 Oct 20;323(7318):908-11.
93. Beck R, Daughtridge R, Sloane PD. Physician-patient communication in the primary care office: a systematic review. *J Am Board Fam Pract*. 2002 Jan-Feb;15(1):25-38.
94. DiMatteo M. The role of the physician in the emerging health care environment. *West J Med*. 1998 May;168(5):328-33.
95. Gazmararian J, Williams MV, Peel J, Baker DW. Health literacy and knowledge of chronic disease. *Patient Educ Couns*. 2003 Nov;51(3):267-75.
96. Parker RM, Ratzan SC, Lurie N. Health literacy: a policy challenge for advancing high-quality health care. *Health Aff (Millwood)*. 2003 Jul-Aug;22(4):147-53.
97. Selden C, Zorn M, Ratzan S, Parker RM, compilers. *Health Literacy: January 1990 through October 1999 [bibliography]*. February 2000; p. vi. (Current Bibliographies in Medicine; CBM 2000-1). Cited in: U.S. Department of Health and Human Services, *Healthy People 2010* (2nd ed.). Washington, DC: U.S. Govt. Print. Off.; November 2000, p. 11– 20.
98. Scott TL, Gazmararian JA, Williams MV, Baker DW. Health literacy and preventive health care use among Medicare enrollees in a managed care organization. *Med Care*. 2002 May;40(5):395-404. Cited in: Gazmararian JA, Curran JW, Parker RM, et al. *Public health literacy in America: an ethical imperative*. *Am J Prev Med*. 2005 Apr;28(3):317-22.
99. Williams M, Baker DW, Parker RM, Nurss JR. Relationship of functional health literacy to patients' knowledge of their chronic disease. A study of patients with hypertension and diabetes. *Arch Intern Med* 1998 Jan 26;158(2):166-72. Cited in: U.S. Department of Health and Human Services, *Healthy People 2010* (2nd ed.). Washington, DC: U.S. Govt. Print. Off.; November 2000, p. 11 - 9.
100. Williams M, Baker DW, Honig EG, et al. Inadequate literacy is a barrier to asthma knowledge and self-care. *Chest*. 1998 Oct;114(4):1008-15. Cited in: U.S. Department of Health and Human Services, *Healthy People 2010* (2nd ed.). Washington, DC: U.S. Govt. Print. Off.; November 2000, p. 11 - 9.
101. Baker DW, Parker RM, Williams MV, Clark WS. Health literacy and the risk of hospital admission. *J Gen Intern Med*. 1998 Dec;13(12):791-8. Cited in: Gazmararian JA, Curran JW, Parker RM, et al. *Public health literacy in America: an ethical imperative*. *Am J Prev Med*. 2005 Apr;28(3):317-22.
102. Baker DW, Gazmararian JA, Williams MV, et al. Functional health literacy and the risk of hospital admission among Medicare managed care enrollees. *Am J Public Health* 2002;92:1278-83. Cited in: Gazmararian JA, Curran JW, Parker RM, et al. *Public health literacy in America: an ethical imperative*. *Am J Prev Med*. 2005 Apr;28(3):317-22.
103. Berkman N, DeWalt D, Pignone MP, et al. *Literacy and Health Outcomes. Summary, Evidence Report/Technology Assessment No. 87*. Rockville, MD: Agency for Healthcare Research and Quality; 2004. AHRQ Pub. No. 04-E007-1.
104. Institute of Medicine, Committee on Health Literacy. *Health Literacy: A Prescription to End Confusion*. (Nielsen-Bohlman L, Panzer AM, Kindig DA, Eds.) Washington, DC: National Academies Press; 2004.
105. Rhoades DR, McFarland KF, Finch WH, Johnson AO. Speaking and interruptions during primary care office visits. *Fam Med*. 2001 Jul-Aug;33(7):528-32.

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106. Berry L, Seiders K, Wilder SS. Innovations in access to care: a patient-centered approach. *Ann Intern Med.* 2003 Oct 7;139(7):568-74.
107. U.S. Department of Health and Human Services, Office of Minority Health. Think Cultural Health: Bridging the Health Care Gap through Cultural Competency Continuing Education Programs. Available at: www.thinkculturalhealth.org Accessed July 11, 2006.
108. Hargraves JL, Hays RD, Cleary PD. Psychometric properties of the Consumer Assessment of Health Plans Study (CAHPS) 2.0 adult core survey. *Health Serv Res.* 2003 Dec;38(6 Pt 1):1509-27.
109. Nickens HW. The rationale for minority-targeted programs in medicine in the 1990s. *JAMA* 1992 May 6;267(17):2390, 2395.
110. Komaromy M, Grumbach K, Drake M, et al. The role of black and Hispanic physicians in providing health care for underserved populations. *New Engl J Med.* 1996 May 16;334(20):1305-10.
111. Turner CB, Turner BF. Who treats minorities? *Cult Divers Ment Health.* 1996;2(3):175-82.
112. Saha S, Taggart SH, Komaromy M, Bindman AB. Do patients choose physicians of their own race? *Health Aff (Millwood)* 2000 Jul-Aug;19(4):76-83.
113. Cooper-Patrick L, Gallo J J, Gonzales JJ, et al. Race, gender, and partnership in the patient-physician relationship. *JAMA* 1999 Aug 11;282(6):583-9.
114. Saha S, Komaromy M, Koepsell TD, Bindman AB. Patient-physician racial concordance and the perceived quality and use of health care. *Arch Intern Med* 1999 May 10;159(9):997-1004.
115. Agency for Healthcare Research and Quality. CAHPS hospital survey chartbook: what patients say about their experiences with hospital care. Report of summary data from hospital test sites. Rockville, MD: U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality; 2006. AHRQ Pub. No. 06-0049.