2009

National Healthcare Disparities Report

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National Healthcare Disparities Report

2009

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Contents

Chapter *Page*

Highlights 1
1. Introduction and Methods 17
2. Quality of Health Care 35
Effectiveness 38
Cancer 38
Diabetes 50
End Stage Renal Disease (ESRD) 55
Heart Disease 59
HIV and AIDS 61
Mental Health and Substance Abuse 65
Respiratory Diseases 69
Lifestyle Modification 76
Functional Status Preservation and Rehabilitation 80
Supportive and Palliative Care 85
Patient Safety 93
Timeliness 102
Patient Centeredness 110
Summary Tables 123
3. Access to Health Care 141
Facilitators and Barriers to Health Care 142
Health Care Utilization 158
Summary Tables 171
4. Priority Populations 177
Racial and Ethnic Minorities 180
Low-Income Groups 234
Women 240
Children 249
Older Adults 260
Residents of Rural Areas 266
Individuals With Disabilities and Special Health Care Needs 277

List of Core Measures 293
Appendixes:
Data Sources www.ahrq.gov/qual/qrdr09/datasources/index.html
Detailed Methods www.ahrq.gov/qual/qrdr09/methods/index.html
Measure Specifications www.ahrq.gov/qual/qrdr09/measurespec/index.html
Data Tables www.ahrq.gov/qual/qrdr09/index.html

Key Themes and Highlights From the National Healthcare Disparities Report

Examining health care disparities is an integral part of improving health care quality. Health care disparities are the differences or gaps in care experienced by one population compared with another population. As the National Healthcare Quality Report (NHQR) shows, Americans too often do not receive care that they need or they receive care that causes harm.

The National Healthcare Disparities Report (NHDR) shows that some Americans receive worse care than other Americans. Within the scope of health care delivery, these disparities may be due to differences in access to care, provider biases, poor provider-patient communication, poor health literacy, or other factors.

The purpose of the NHDR, as mandated by Congress,[i] is to identify the differences or gaps where some populations receive poor or worse care than others and to track how these gaps are changing over time. Although the emphasis is on disparities related to race and socioeconomic status, the reporting mandate indicates an expectation that the Agency for Healthcare Research and Quality (AHRQ) will examine health care disparities across broadly defined "priority populations." These include ethnic minorities and other groups or categories of individuals experiencing disparate and inadequate health care.

The NHDR and NHQR use the same measures, which are categorized across four dimensions of quality: effectiveness, patient safety, timeliness, and patient centeredness. This year's report focuses on the state of health care disparities for a group of "core" measures[ii] that represent the most important and scientifically credible measures of health care quality for the Nation, as selected by the Department of Health and Human Services (HHS) Interagency Work Group.[iii] By focusing on core measures, the 2009 report provides a more readily understandable summary and explanation of the key results derived from the data.[iv]

Three key themes emerge in the 2009 NHDR:

- Disparities are common and uninsurance is an important contributor.
- Many disparities are not decreasing.
- Some disparities merit particular attention, especially care for cancer, heart failure, and pneumonia.

We also summarize efforts by AHRQ and HHS to accelerate the pace of improvement by:

- Training providers.
- Raising awareness.
- Forming partnerships to identify and test solutions.

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[i] This 2009 report is the seventh National Healthcare Disparities Report (NHDR) mandated by the U.S. Congress in 42 U.S.C. 299a-1(a)(6). It is produced by the Agency for Healthcare Research and Quality (AHRQ) on behalf of the U.S. Department of Health and Human Services (HHS) and in collaboration with an HHS-wide Interagency Work Group.

[ii] Not all core measures have data for all subgroups for analysis.

[iii] The HHS Interagency Work Group, which represents HHS agencies and offices, was formed to provide advice and support to AHRQ and the National Reports team.

[iv] Data on all NHDR measures are available in the Data Tables appendix at http://www.ahrq.gov/qual/measurix.htm.

Disparities Are Common and Uninsurance Is an Important Contributor

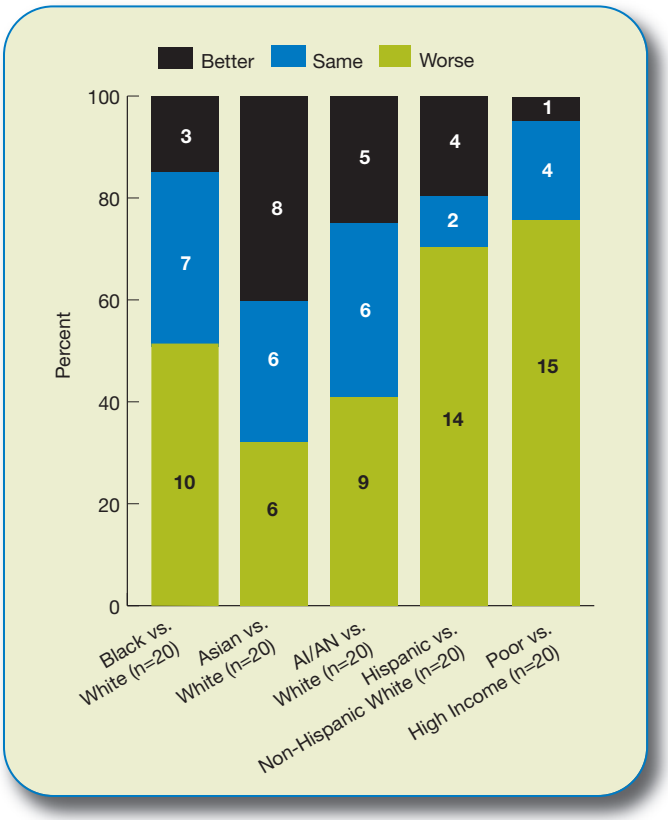
All population groups should receive equally high quality of care. Getting into the health care system (access to care) and receiving appropriate health care in time for the services to be effective (quality care) are key factors in ensuring good health outcomes.

Consistent with extensive research and findings in previous NHDRs, the 2009 report finds that disparities related to race, ethnicity, and socioeconomic status still pervade the American health care system. Although varying in magnitude by condition and population, disparities are observed in almost all aspects of health care, including:

- Across all dimensions of health care quality: effectiveness, patient safety, timeliness, and patient centeredness.
- Across all dimensions of access to care: facilitators and barriers to care and health care utilization.
- Across many levels and types of care: preventive care, treatment of acute conditions, and management of chronic diseases.
- Across many clinical conditions: cancer, diabetes, end stage renal disease, heart disease, HIV disease, mental health and substance abuse, and respiratory diseases.
- Across many care settings: primary care, home health care, hospice care, emergency departments, hospitals, and nursing homes.
- Within many subpopulations: women, children, older adults, residents of rural areas, and individuals with disabilities and other special health care needs.

To quantify the prevalence of disparities across the core measures tracked in the 2009 report, racial and ethnic minority groups and socioeconomic groups are compared with an appropriate reference group for each core measure. Each group could receive care that is poorer than, about the same as, or better than the reference group.

Figure H.1. Distribution of core quality measures for which members of selected group experienced better, same, or poorer quality of care compared with reference group

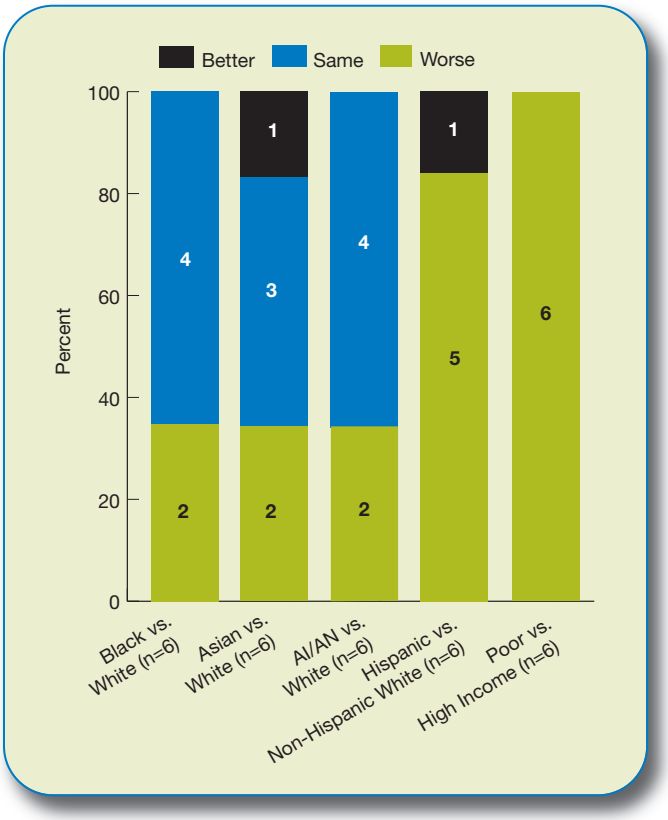


Better = Population received better quality of care than the reference group.
Same = Population and reference group received about the same quality of care.
Worse = Population received poorer quality of care than the reference group.
Key: AI/AN = American Indian or Alaska Native.
Note: Asian includes Asian or Pacific Islander when information is not collected separately for each group. Data presented are the most recent data available. Measures presented here for racial and ethnic minority groups are a subset of the core measure set that has data for all groups. Some measures for poor populations are different from the measures used for racial and ethnic groups.

For sizable proportions of measures, racial and ethnic minorities and poor people receive lower quality care:

- Blacks received worse care than Whites for 50% (10/20) of core measures (Figure H.1). Blacks received better care than Whites for 15% (3/20) of core measures.
- Asians received worse care than Whites for 30% (6/20) of core measures and better care for 40% (8/20) of core measures.
- American Indians and Alaska Natives (AI/ANs) received worse care than Whites for 45% (9/20) of core measures and better care for 25% (5/20) of core measures.
- Hispanics received worse care than non-Hispanic Whites for 70% (14/20) of core measures and better care for 20% (4/20) of core measures.
- Poor people received worse care than high-income people for 75% (15/20) of core measures and better care for 5% (1/20) of core measures.

Figure H.2. Distribution of core access measures for which members of selected group experienced better, same, or worse access to care compared with reference group



Better = Population had better access to care than the reference group.
Same = Population and reference group had about the same access to care.
Worse = Population had worse access to care than the reference group.
Key: AI/AN = American Indian or Alaska Native.
Note: Asian includes Asian or Pacific Islander when information is not collected separately for each group. Data presented are the most recent data available.

For many measures, racial and ethnic minorities and poor people have worse access to care:

- Blacks, Asians, and AI/ANs had worse access to care than Whites for one-third (2/6) of core measures (Figure H.2).
- Hispanics had worse access than non-Hispanic Whites for 83% (5/6) of core measures.
- Poor people had worse access to care than high-income people for all 6 core measures.

The growing rate of uninsurance in America has been the subject of considerable examination during the past 10 years in both the popular press and academic literature. A focus of this year's NHQR is the relationship between uninsurance and quality of care, and the findings demonstrate that uninsured people tend to get the worst care.

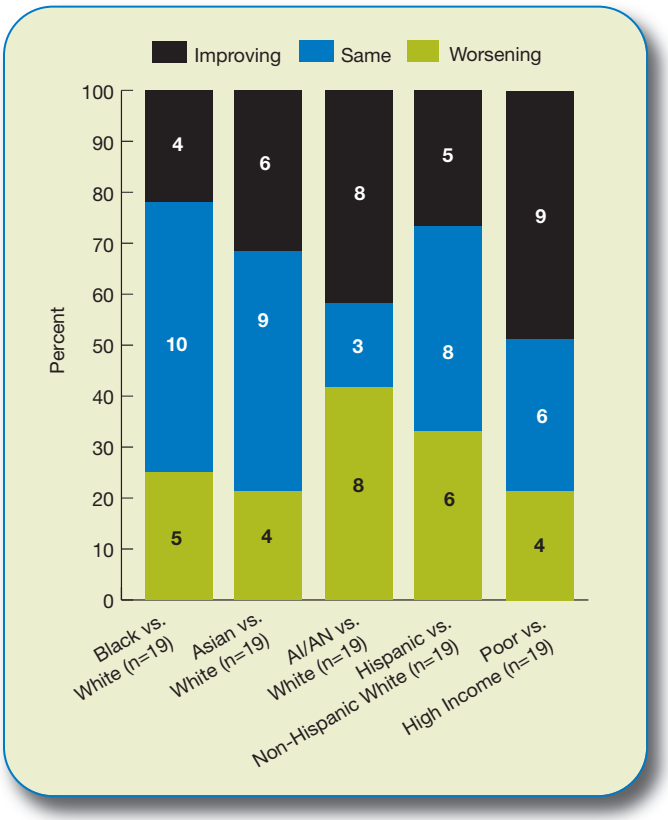
For the 2009 NHDR, we conducted multivariate analyses on a number of measures of quality of care to address the interrelationships among different demographic groups and socioeconomic factors, such as income and insurance. These analyses generated adjusted percentages that control for multiple factors simultaneously. In 9 of 12[v] regression models that focused on children or adults under age 65, uninsurance was the single strongest predictor of quality of care, exceeding the effects of race, ethnicity, income, or education. However, uninsurance did not explain all differences in care related to race, ethnicity, and socioeconomic status, suggesting that mitigating uninsurance would greatly reduce but not completely eliminate disparities in care.

Many Disparities Are Not Decreasing

Both categories of measures, quality of care and access to care, show that disparities persist for all populations. Measures of quality include effectiveness (the percentage of patients with a disease or condition who get recommended care), patient safety, and timeliness. Measures of access to care include health insurance coverage, utilization of general health services, and barriers to care. The figures that follow illustrate how disparities in quality and access have changed for each population during the past 5 years.

[v] Multivariate analyses were conducted for the following measures for which data were available: breast cancer screening, children who did not have patient-centered care, children who received advice about healthy eating, children who sometimes or never got care for illness or injury as soon as wanted, children ages 3-6 who ever had a vision check, adults with a dental visit in the past year, diabetes patients who received recommended care, adults ages 18-64 uninsured all year, adults who did not have patient-centered care, adults with a usual primary care provider, adult smokers with advice to quit smoking, and adults who sometimes or never got care for illness or injury as soon as wanted. Uninsurance was not a predictor of quality for children who reported a lack of patient-centered care, children who sometimes or never got care for illness or injury as soon as wanted, and adult smokers with advice to quit smoking.

Figure H.3. Distribution of changes over time in racial, ethnic, and socioeconomic disparities for selected core quality measures, 2000-2002 to 2005-2007

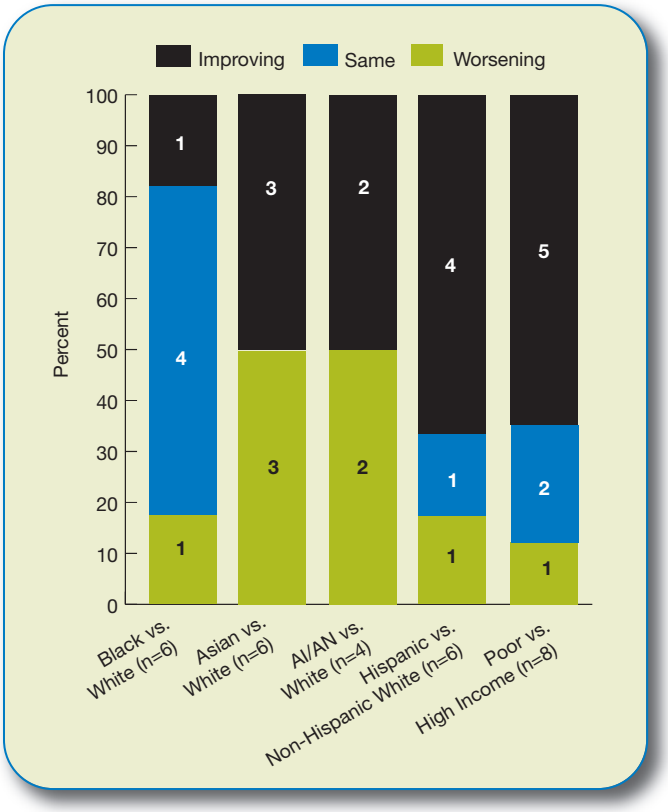


Improving = Population-reference group difference becoming smaller at an average annual rate of 1% or greater.
Same = Population-reference group difference changing at an average annual rate of less than 1%.
Worsening = Population-reference group difference becoming larger at an average annual rate of 1% or greater.
Key: AI/AN = American Indian or Alaska Native.
Note: Asian includes Asian or Pacific Islander when information is not collected separately for each group. Data presented are the most recent data available. Measures presented here for racial and ethnic minority groups are a subset of the core measure set that has data for all groups. Some measures for poor populations are different from the measures used for racial and ethnic groups.

- For Blacks, Asians, and Hispanics, at least two-thirds of measures of quality of care are not improving (gap either stayed the same or increased) (Figure H.3).
- For Blacks, only about 20% of measures of disparities in quality of care improved (gap decreased).
- For poor people, disparities are improving for almost half of the quality measures.
- For AI/ANs, approximately 40% of disparities in quality improved.

Many Americans enjoy good access to primary and hospital care. For many populations, however, barriers exist to getting needed health care, such as having no health insurance or having trouble getting appointments. Reducing disparities in access to health care is an important step to improving overall quality. Figure H.4 is a summary of trends in the core measures of access.

Figure H.4. Distribution of changes over time in racial, ethnic, and socioeconomic disparities for selected core access measures, 2000-2002 to 2005-2007



Improving = Population-reference group difference becoming smaller at an average annual rate of 1% or greater.
Same = Population-reference group difference changing at an average annual rate of less than 1%.
Worsening = Population-reference group difference becoming larger at an average annual rate of 1% or greater.
Key: AI/AN = American Indian or Alaska Native.
Note: Asian includes Asian or Pacific Islander when information is not collected separately for each group. Data presented are the most recent data available.

- For Asians and AI/ANs, an equal number of core measures of access improved and worsened (Figure H.4).
- For Blacks, more than 80% of the core measures used to track access remained unchanged (gap stayed the same) or got worse (gap increased). However, the one measure that improved is notable. Over time, the Black-White difference in health insurance coverage among people under age 65 decreased. By 2007, the gap was not statistically significant.
- For Hispanics, two-thirds of core access measures improved (gap decreased).
- For poor populations, more than 60% of core access measures improved (gap decreased).

Some Disparities Merit Particular Attention

As previous reports have shown, large disparities exist in many areas of health care. Although some improvement has been seen in quality of care, closing the gap between groups remains a challenge. Often, quality of care may improve for all groups, but gaps between groups may remain if interventions do not specifically address disparities. The NHDR can be used to identify the most significant gaps that merit particular attention. Two approaches for identifying important gaps are presented. One focuses on individual populations and one examines patterns of disparities across populations.

An analysis of health care for each population allows targeting of resources and efforts to improve care and narrow the gaps in care for racial and ethnic minorities and poor populations. Table H.1 presents an analysis of the largest disparities or "biggest gaps" for each population. The biggest gaps are defined as those quality measures with the largest relative rates between Whites and racial and ethnic minorities and between high-income and poor individuals. The relative rate quantifies how large the gap is compared with the reference group. For example, a relative rate of 1.9 means that this population was almost twice as likely as the White population to report that children did not receive advice about physical activity.

The annual change shows the rate at which the gap is changing over time. A gap that is getting smaller with time is considered evidence that the disparity is improving, while a gap that is getting larger is considered evidence that the disparity is worsening. The time period used to calculate annual change varies by measure (refer to the Data Tables appendix for available data years). Measures that have the largest disparities and are worsening over time should be targeted for improvement.

Table H.1. Largest disparities for each population, relative rate compared with reference group and annual percentage change

Group	Measure	Relative rate (2009)	Annual change	Largest disparity and improving over time	Largest disparity and worsening over time
Black compared with White	New AIDS cases per 100,000 population age 13 and over	9.7	-10.2%	*	
	Emergency department visits in which patients left without being seen	1.6	-2.0%	*	
	Cancer deaths per 100,000 population per year for colorectal cancer	1.5	1.1%		*
Asian compared with White	Children ages 2-17 who did not receive advice about physical activity	1.9	0.0%		
	Adults age 65 and over who did not ever receive pneumococcal vaccination	1.6	4.7%		*
	Adults who can sometimes or never get care for illness or injury as soon as wanted	1.5	-2.9%	*	

Table H.1. Largest disparities for each population, relative rate compared with reference group and annual percentage change

Group	Measure	Relative rate (2009)	Annual change	Largest disparity and improving over time	Largest disparity and worsening over time
American Indian/ Alaska Native compared with White	Adults age 50 and over who did not receive colorectal cancer screening	1.4	7.7%		*
	New AIDS cases per 100,000 population age 13 and over	1.4	-2.7%	*	
	Composite: Hospital patients with heart failure who did not receive recommended hospital care	1.4	12.4%		*
Hispanic compared with Non-Hispanic White	New AIDS cases per 100,000 population age 13 and over	3.3	-4.2%	*	
	Adults age 65 and over who did not ever receive pneumococcal vaccination	1.8	2.4%		*
	Composite: Children whose parents reported poor communication with health providers	1.7	-5.5%	*	
Poor compared with high income	Composite: Children whose parents reported poor communication with health providers	3.0	-10.2%	*	
	Adults who can sometimes or never get care for illness or injury as soon as wanted	2.2	-2.8%	*	
	Women age 40 and over who did not have a mammogram in the last 2 years	2.1	-6.5%	*	

Note: Largest disparity and improving over time = Measures that had one of the three highest relative rates (largest gap) and a decrease in the size of the gap over time. Largest disparities and worsening over time = Measures that had one of the three highest relative rates and an increase in the size of the gap over time.

Some of the largest disparities were also areas where the most improvement has been achieved over time:

- The largest disparities for Blacks, AI/ANs, and Hispanics included the rate of new AIDS cases. The rate for Blacks was almost 10 times as high as the rate for Whites, for Hispanics more than 3 times as high, and for AI/ANs 1.4 times as high. However, from 2000 to 2007, for Blacks, AI/ANs, and Hispanics, this measure was among those with the greatest reduction in disparities for each group (10.2% per year, 2.7% per year, and 4.2% per year, respectively; Table H.1).

- The largest disparities for Asians and poor populations included a measure related to timeliness of care. Asians were 1.5 times as likely as Whites to report they sometimes or never get care for illness or injury as soon as wanted. Poor people were more than twice as likely as high-income people to report this problem. However, from 2002 to 2006, this measure had one of the greatest reductions in disparities over time in both groups (2.9% percent per year for Asians and 2.8% per year for poor people).
- Provider-patient communication reported for children was among those measures with the largest disparities for Hispanics and poor populations. Hispanics were 1.7 times as likely as Whites and poor people were 3 times as likely as high-income people to report poor provider-patient communication. However, from 2001 to 2006, these groups also experienced large reductions in disparities for this measure (5.5% improvement per year for Hispanics and 10.2% improvement per year for poor populations).

Measures worth targeting for improvement include the following.

- From 2000 to 2005, disparities in colorectal cancer screening for AI/ANs have been worsening. The gap between AI/ANs and Whites is increasing at a rate of 7.7% per year.
- From 2005 to 2007, disparities in hospital care for heart failure for AI/ANs have been worsening at a rate of 12.4% per year.
- From 2000 to 2007, disparities in pneumococcal vaccination have been worsening for Asians and Hispanics at a rate of 4.7% per year and 2.4% per year, respectively.

In addition to the disparities evident across individual priority populations, in some cases several different populations experience the same gaps in care, perhaps reflecting similar barriers to quality care. Table H.2 shows the measures worsening for multiple groups.

Table H.2. Core measures that are getting worse for more than one racial and ethnic group compared with reference group

Topic	Measure	Blacks	Asians	AI/ANs	Hispanics
Cancer	Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test	*	*	*	*
	Cancer deaths per 100,000 population per year for colorectal cancer	*			*
Heart disease	Hospital patients with heart failure who received recommended hospital care			*	*
Respiratory disease	Adults age 65 and over who ever received pneumococcal vaccination		*		*
	Hospital patients with pneumonia who received recommended hospital care	*	*	*	*

Note: A complete table of the disparities that worsened for specific populations can be found in Chapter 4, Priority Populations.

- Blacks, Asians, AI/ANs, and Hispanics all experienced disparities in the percentage of adults age 50 and over who received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test and in recommended hospital care for pneumonia (Table H.2).
- Blacks and Hispanics both had worsening disparities in colorectal cancer mortality from 2000 to 2006.
- AI/ANs and Hispanics had worsening disparities in the recommended hospital care for heart failure from 2005 to 2007.
- Asians and Hispanics both had worsening disparities in pneumococcal vaccination for adults age 65 and over from 2000 to 2007.

Findings from the 2009 NHDR show that disparities in care for cancer, heart failure, and pneumonia exist across populations. Although quality of hospital care for heart failure and pneumonia has improved overall, care for Whites continues to improve at a higher rate than for minority populations. Thus, quality improvement has not necessarily translated to disparities reduction, which is critical for high-quality care.

Low rates of colorectal cancer screening and other cancer screenings may be due to cultural attitudes and patient perceptions, such as the belief that screening is not necessary. In addition, patients may have problems paying for followup visits to complete screening and may have logistical problems getting to appointments. Similarly, pneumococcal vaccination rates may be lower for Blacks and Asians because of distrust in the effectiveness of vaccines and perceptions that vaccines are not necessary.

Efforts Are Needed To Accelerate Improvement

This 2009 report summarizes the areas where health care disparities have improved and where they have not. But national reports will not eliminate disparities by themselves. Building on information contained in the NHDR and NHQR, HHS organizations are implementing an exciting range of programs that seek to reduce disparities and accelerate the pace of health care quality improvement for all Americans. As individual, community, social, and health system factors contribute to health care disparities, multiple strategies exist to address these factors. Efforts have focused on training health care professionals; raising awareness among health care professionals and patients; and changing health systems at the hospital, provider, and community levels.

Train Providers

Cultural expectations, assumptions, and language affect the quality of care patients receive. Some efforts have focused on training health care personnel to deliver culturally and linguistically competent care for diverse populations:

- The **Think Cultural Health Web site** (http://www.thinkculturalhealth.org) is sponsored by the Office of Minority Health (OMH). This site offers the latest resources and tools to promote cultural competency in health care. Users can access free online courses accredited for continuing education credit, such as "A Physician's Practical Guide to Culturally Competent Care" and "Culturally Competent Nursing Care." The site also provides supplementary tools, including the "Health Care Language Services Implementation Guide," to help providers and organizations promote respectful, understandable, and effective care to an increasingly diverse patient population.

- The **Unified Health Communication Web-Based Training Program** is sponsored by the Health Resources and Services Administration (HRSA). This interactive training course introduces a unified health communication concept called "Unified Health Communication (UHC) 100/101: Addressing Health Literacy, Cultural Competency, and Limited English Proficiency." The UHC 100/101 course explores three crucial areas that can affect provider-patient communication: health literacy, cultural competency, and limited English proficiency. Each of these three components can influence various aspects of health communication. In combination, they can have an even greater impact on improving health care delivery, reducing health disparities, and empowering patients to become more involved in their own health management to enhance their quality of life. This course is currently used across a variety of health care delivery venues. Its use underscores the importance of clear health communication through the discussion of innovative approaches by health care providers.
- **The Office for Civil Rights** (OCR) is the sole HHS agency with the authority to enforce Title VI of the Civil Rights Act of 1964, 42 U.S.C. 2000d. This law prohibits discrimination based on race, color, or national origin in programs and activities that receive Federal financial assistance. OCR enforces Title VI by providing technical assistance and training to health care providers and human service agencies; investigating race, color, and national origin discrimination complaints filed by individuals and advocacy groups; and resolving those complaints through corrective action and voluntary compliance agreements.[vi] OCR, for example, recently collaborated with Medco, the nation's largest mail-order pharmacy, in its development of a multifaceted plan to improve services to limited-English-proficient consumers. In addition, OCR, in partnership with the National Consortium for Multicultural Education, funded by the National Institutes of Health's National Heart, Lung, and Blood Institute, recently published a curriculum on cultural competency in medicine that incorporates Title VI compliance. The OCR curriculum, "Stopping Discrimination Before It Starts: The Impact of Civil Rights Laws on Health Care Disparities–A Medical School Curriculum," was published in the Association of American Medical College's MedEdPORTAL (http://www.aamc.org/mededportal). This portal is a Web-based tool that facilitates the nationwide exchange of high-quality, peer-reviewed educational materials.

Raise Awareness

Other efforts to address health care disparities leverage key partnerships to raise awareness of disparities by using data and research:

- The **Health Disparities Roundtable** was convened in 2006 under cosponsorship by OMH and AHRQ and in partnership with the Institute of Medicine. The roundtable generates action and engages interested parties from academia, industry, government, philanthropy, the corporate sector, and the community to reduce racial and ethnic health disparities. It fills an important role as a focus for public-private research partnerships and policy discussions to address various topics. These include: (1) ways to bring together health-care focused and broader community-based approaches to address disparities more effectively; (2) strategies to expand and strengthen research to develop effective treatments for those diseases that disproportionately affect minority populations, as well as research that focuses on

[vi] For technical assistance or more information on filing a complaint, the HHS Office for Civil Rights may be contacted at (202) 619-0403, OCRmail@hhs.gov, or http://www.hhs.gov/ocr/civilrights/complaints/index.html.

the complex interactions of biologic and social factors as determinants of health; (3) effective cultural competency techniques and cross-cultural education in health care settings; (4) educational strategies to end health disparities; (5) development and promotion of effective strategies to increase minority representation in medicine and health professions; and (6) understanding of the causes of health and health care disparities and best solutions.

- **The Federal Collaboration on Health Disparities Research** (FCHDR) was developed by the Centers for Disease Control and Prevention (CDC) in collaboration with OMH and cosponsored by AHRQ. FCHDR identifies and supports research priorities for cross-agency collaboration to hasten the elimination of health disparities. This collaboration is led by the HHS Health Disparities Council and the Interagency Committee on Disability Research of the Department of Education. Through FCHDR, Federal partners have formed subject matter expert workgroups around four initial research topic areas for collaboration: obesity, built environment (homes, schools, workplaces, parks and recreation areas, business areas, transportation systems, etc.), mental health care, and comorbidities. These priorities represent opportunities for Federal agencies and other partners to collaborate on innovative research.
- The **Disparity Reducing Advances Project** is a multiyear, multistakeholder project cosponsored by AHRQ and others, including CDC, the National Cancer Institute, the American Cancer Society, Central Florida Family Health Center, the Robert Wood Johnson Foundation, and the University of Texas Medical Branch. This project identifies the most promising strategies for bringing health gains to poor and underserved populations and accelerating the development and deployment of these strategies to reduce health care disparities.
- The **Centers for Medicare & Medicaid Services (CMS) Health Disparities Program** allows CMS to develop a health care forum that encompasses public and private partnerships to address health disparities nationwide through a common message. The focus of this program is to improve health literacy and outcomes through three overarching functions: (1) align CMS and Federal resources to provide a solid foundation for messaging on health disparities activities and projects, (2) standardize elements throughout the Quality Improvement Organization 9th Scope of Work themes for the health disparities program, and (3) work with internal and external stakeholders to advance health disparities planning objectives. The Health Disparities Program is achieving these goals by using several methods, such as grants to Historically Black Colleges and Universities and Hispanic Serving Institutions, health disparities forums, newsletters throughout statewide programs, plenary sessions at conferences, and collaborations with national organizations, such as the Administration on Aging, OMH, and National Institutes of Health.
- **Healthy People 2020** is a comprehensive health promotion and disease prevention agenda. It has four overarching goals: (1) eliminate preventable disease, disability, injury, and premature death; (2) achieve health equity, eliminate disparities, and improve the health of all group; (3) create social and physical environments that promote good health for all; and (4) promote healthy development and healthy behaviors across every stage of life. Through a national consensus process, HHS identifies specific objectives for improving the health of the Nation, establishes baseline values for the objectives, and sets specific targets to be achieved by 2020. Agencies across HHS and in other Federal departments are involved in pursuing this agenda. Progress toward the achievement of these goals and objectives is monitored by CDC's National Center for Health Statistics.

- **The Health Disparities Calculator (HD*Calc)** is a statistical software program that generates multiple summary measures for evaluating and monitoring health disparities. Data such as cancer rates, survival, and stage at diagnosis, which are categorized by groups such as ethnicity, race, socioeconomic status, and geographic areas, can be used with HD*Calc to generate 11 absolute and relative summary measures of disparity. It can be used either as an extension of SEER*Stat, which allows users to import Surveillance, Epidemiology, and End Results (SEER) data, or on its own with other population-based health data, such as from the National Health Interview Survey, California Health Interview Survey, Tobacco Use Supplement to the Current Population Survey, and National Health and Nutrition Examination Survey. HD*Calc is located on the SEER Web site at http://seer.cancer.gov/hdcalc/. This work is supported by the Surveillance Research Program and Applied Research Program within the Division of Cancer Control and Population Sciences at the National Cancer Institute.

Form Partnerships To Identify and Test Solutions

Other partnerships leverage both public and private partners to address health care disparities at the community and provider level:

- The **AHRQ National Health Plan Collaborative** (NHPC), which has 11 participating health plans with a total of 87 million enrollees, is cofunded by the Robert Wood Johnson Foundation. NHPC identifies and implements approaches to reducing racial and ethnic disparities and to improving quality among health plan enrollees. In Phase II of the collaborative, three task forces addressed primary data collection and language access and are building the business case for reducing disparities. The collaborative builds on the continued interest of health plans in reducing disparities and improving health care for minorities. Members of the collaborative have developed a toolkit that will serve as the core vehicle to share NHPC's findings and recommendations. The toolkit will be a Web-based searchable database of tools, research, statistics, case studies, and lessons learned. Users will be able to search the tool according to their needs, resulting in a personalized page of information and resources. The toolkit will enable other health plans or stakeholders to implement interventions or methods to address disparities and will provide lessons learned and best practices for reducing disparities.
- An HHS pilot project, **Improving Hispanic Elders' Health: Community Partnerships for Evidence-Based Solutions**, is bringing together teams of local leaders from communities with large numbers of Hispanic elders to develop local plans for addressing health disparities. Teams cut across organizational boundaries and include representatives from the local area agency on aging, Hispanic community organizations, the local public health agency, aging services providers, the medical community, and health service research organizations. AHRQ, the Administration on Aging, CDC, CMS, and HRSA are assisting teams to develop coordinated strategies for improving the health and well-being of Hispanic elders. Eight communities with sizable disparities participate in this pilot project: Chicago, Illinois; Houston, Texas; Los Angeles, California; McAllen, Texas; Miami, Florida; New York, New York; San Antonio, Texas; and San Diego, California. Information from the NHDR and customized data created by AHRQ for each community have helped target interventions to specific neighborhoods in greatest need of particular services.

- **The National Partnership for Action (NPA) To End Health Disparities** (http://minorityhealth.hhs.gov/npa), launched by OMH, is a multifaceted effort to mobilize and connect individuals and organizations across the country to create a Nation free of health disparities, with quality health outcomes for all people. The NPA is composed of three components: (1) National Plan for Action; (2) 10 Regional Blueprints aligned with the National Plan for Action that include strategies and actions most pertinent to communities in each region; and (3) targeted initiatives that will be undertaken by partners across the public and private sectors in support of the NPA. An example of an NPA initiative is the **National Business Group on Health (NBGH) Racial and Ethnic Health Disparities Advisory Board**. This advisory board facilitates alliances between business, medicine, and public health organizations to improve the quality of health care for racial and ethnic minority populations while promoting beneficiary health and employee productivity. Products include issue briefs on topics such as why companies are making health disparities their business and how health plans view health disparities. The board holds several Web conferences featuring best practices by a wide range of employers.

Conclusion

Reducing disparities in health care requires measurement and reporting, but these are not the ultimate goals. The fundamental purpose of examining disparities is to ensure that health care improves the lives of all patients and their families, regardless of race, ethnicity, or socioeconomic status. The NHDR concentrates on tracking disparities in health care at the national level, but the statistics reported in the NHDR and NHQR reflect the aggregated everyday experiences of patients and their doctors and nurses across the Nation. It makes a difference in people's lives when breast cancer is diagnosed early with timely mammography; when a patient suffering from a heart attack is given the correct lifesaving treatment in a timely fashion; when medications are correctly administered; and when doctors listen to their patients and their families, show them respect, and answer their questions.

Since its initial publication in 2003, the NHDR has provided a broad and detailed examination of disparities for at-risk priority populations in U.S. health care. The ability to monitor and track changes in disparities is critical. Growing interest in public reporting for quality improvement activities continues to be an impetus to improve not only the quality of data but also the quality of care provided.

This 2009 report summarizes the many areas where little to no progress has been achieved in reducing disparities. However, it also highlights progress that is being made in key conditions that disproportionately affect priority populations. Many factors contribute to disparities in health care quality and access, and it is a major challenge to address them. Yet a number of promising programs at HHS, such as those described here, are doing just that. The activities described are only a few of the many efforts of HHS organizations that address the challenges in reducing health care disparities. Other HHS agencies are contributing in many other ways to address disparities in health service delivery, health care finance, and clinical research in addition to both Federal and State efforts to expand access. What they have in common are the focus on multiple stakeholders and the need for tailored solutions depending on the particular disparities and populations involved.

With the publication of this seventh NHDR, AHRQ stands ready to contribute to efforts such as those above to encourage and support the development of national, State, Tribal, and neighborhood solutions using national data and benchmarks in disparities. We hope that the progress and gaps outlined in this NHDR will help policymakers ensure that all patients receive the health care they need to make their lives better.

Chapter 1. Introduction and Methods

In 1999, Congress directed the Agency for Healthcare Research and Quality (AHRQ) to produce an annual report, starting in 2003, to track "prevailing disparities in health care delivery as it relates to racial factors and socioeconomic factors in priority populations." Although the emphasis is on disparities related to race, ethnicity, and socioeconomic factors, this directive includes a charge to examine disparities in "priority populations"—groups with unique health care needs or issues that require special focus. AHRQ, with support from the Department of Health and Human Services (HHS) and private-sector partners, designed and produced the National Healthcare Disparities Report (NHDR) to respond to this legislative mandate.

The first NHDR was a comprehensive national overview of disparities in health care among racial, ethnic, and socioeconomic[i] groups in the general U.S. population and within priority populations. This 2009 NHDR represents the seventh release of this report. It continues to focus on a subset of core measures that make up the most important and scientifically supported measures in the full NHDR measure set. The report also includes trends in health care disparities, as well as the degree to which health care disparities for racial and ethnic minorities and poor populations have lessened.

This chapter summarizes AHRQ's methodological approach to producing the 2009 NHDR. Issues related to changes in measures, additional data sources, and modifications to presentation format are summarized below. Material that is new in this year's report is specifically highlighted and includes:

- A new section on Lifestyle Modification. Measures include:
  - Counseling smokers to quit smoking.
  - Advice to obese adults about healthy eating.
- A new section on Functional Status Preservation and Rehabilitation. Measures include:
  - Older women who reported being screened for osteoporosis.
  - Adult home health care patients whose ability to walk or move around improved.
- A new section on Supportive and Palliative Care (changed from Nursing Home, Home Health, and Hospice Care). Measures include:
  - Long-stay nursing home residents with physical restraints.
  - High-risk long-stay nursing home residents and short-stay residents with pressure sores.
  - Adult home health care patients who were admitted to the hospital.
  - Hospice patient caregivers who perceived patient was not referred to hospice at the right time.
  - Hospice patients who did not receive the right amount of medicine for pain.
- Additional data on timeliness of care that include hospital patients with heart attack who received percutaneous coronary intervention within 90 minutes.

[i] Socioeconomic disparities include differences in education and income levels.

- A focus in the Patient Safety section on health care-acquired infections that includes a measure on surgery patients who received appropriate timing of antibiotics.
- Data on the diversity of dental professionals in the workforce.
- A focus in the Patient Centeredness section on measures of care coordination, including:
  - Patients who reported that they always received test results.
  - Adult hospital patients with heart failure who were given complete written discharge instructions.
- A new measure in Chapter 3, Access to Health Care, on the high financial burden of health care.
- Supplemental data on Asian and Hispanic subpopulations, including:
  - Colorectal cancer screening.
  - Influenza vaccinations.
  - Diabetes care.
  - Provider-patient communication.
  - Uninsurance.
- Additional data on Native Hawaiians and Other Pacific Islanders (NHOPIs),[ii] including:
  - Cholesterol screening.
  - Colorectal cancer screening.
  - Hospitalizations for pneumonia.
  - Difficulty getting care due to cost.
- Supplemental data on American Indians and Alaska Natives (AI/ANs), including:
  - Uncontrolled diabetes.
  - Perforated appendixes.
- Additional data on birth-related trauma in the section on Women.
- Additional data on heart attack mortality in the section on Residents of Rural Areas.
- Continued expanded focus on individuals with disabilities, including:
  - Delayed dental care.
  - Dental visits.
  - High financial burden of health care.

As in previous years, the 2009 NHDR was planned and written by AHRQ staff with the support of AHRQ's National Advisory Council and the Interagency Work Group for the NHDR, which includes representatives from every HHS operating component.

[ii] Due to scarcity of health care data for this population, this report has supplemented national estimates (which often do not meet statistical reliability criteria for reporting) with State-level data. More information can be found in Chapter 4.

How This Report Is Organized

The basic structure of the 2009 NHDR includes the following chapters:

- **Highlights** summarizes key themes and highlights from the 2009 report.
- **Chapter 1: Introduction and Methods** documents the organization, data sources, and methods used in the 2009 report and describes major changes from previous reports.
- **Chapter 2: Quality of Health Care** examines disparities in quality of health care in the general U.S. population. Measures of quality of health care used in this chapter are identical to measures used in the National Healthcare Quality Report (NHQR) except when data to examine disparities are unavailable. Sections cover four components of health care quality:
  - Effectiveness. (Eight clinical areas: cancer, diabetes, end stage renal disease, heart disease, HIV and AIDS, maternal and child health, mental health and substance abuse, and respiratory diseases; and three types of health care services that typically cut across clinical conditions: lifestyle modification, functional status preservation and rehabilitation, and supportive and palliative care).
  - Patient safety.
  - Timeliness.
  - Patient centeredness.
- **Chapter 3: Access to Health Care** examines disparities in access to health care in the general U.S. population. Sections cover two components of health care access:
  - Barriers and facilitators to health care.
  - Health care utilization.
- **Chapter 4: Priority Populations** examines disparities in quality of and access to health care among AHRQ's priority populations, including:
  - Racial and ethnic minorities.
  - Recent immigrant and limited-English-proficient populations.
  - Low-income groups.
  - Women.
  - Children.
  - Older adults.
  - Residents of rural areas.
  - Individuals with disabilities and special health care needs.

The following appendixes are available online (www.ahrq.gov):

- **Data Sources** provides information about each database analyzed for the NHDR, including data type, sample design, and primary content.
- **Detailed Methods** provides detailed methods for selected databases analyzed for the NHDR.
- **Measure Specifications** provides information about how to generate each measure analyzed for the NHDR. It includes measures highlighted in the report text, as well as other measures that were examined but not included in the text. It also includes information about the summary measures used in the report.
- **Data Tables** provides detailed tables for most measures analyzed for the NHDR, including measures highlighted in the report text, as well as other measures that were examined but not included in the text. A few measures cannot support detailed tables and are not included in the appendix.[iii] When data are available:
  - Race tables and ethnicity tables are stratified by age, gender, geographic location, and one or more socioeconomic variables (i.e., household income, education, insurance, and/or area income).
  - Socioeconomic tables are stratified by age, gender, geographic location, race, and ethnicity.

Presentation of the Measure Set

Core Measures

This 2009 NHDR continues to focus on a consistent subset of measures, the "core" measures, which includes the most important and scientifically supported measures in the full NHDR measure set. In 2005, the Interagency Work Group selected the core measures from the full measure sets, and findings based on these measures are presented each year. In addition, "noncore" measures are included in summary statistics and may be presented to complement core measures in key areas. For some topics, the NHDR uses alternating sets of core measures. These measures, which relate to cancer prevention and childhood preventive services, are listed in Table 1.1.

Table 1.1. Alternating core measures

Reported in 2008 NHQR and NHDR*	Reported in 2009 NHQR and NHDR
Colorectal cancer screening	Breast cancer screening (mammography)
Colorectal cancer mortality	Breast cancer mortality
Colorectal cancer diagnosis at advanced stage	Breast cancer diagnosis at advanced stage
Children who received advice about physical activity	Children who received advice about healthy eating
Children who had a vision check	Children who had dental care

*The measures listed in this column will be reported in the 2010 reports.

[iii] NHDR data can be accessed through NHQRDRnet, an online tool that provides Internet users with an opportunity to specify dimensions of analysis and produce data tables. NHQRDRnet is available through the AHRQ Web site at http://nhqrnet.ahrq.gov/.

All core measures fall into two categories: process measures, which track receipt of medical services, and outcome measures, which in part reflect the results of medical care (Table 1.2). Not all process and outcome measures are reported for all conditions due to data limitations and other limitations (refer to Chapter 1 of the 2005 NHDR for core report measure selection criteria).

Ideally, process measures and the outcome measures they could affect would be tracked in tandem. However, data to support such process-outcome measurement pairs are not typically available. Related process and outcome measures in the 2009 NHDR core measure set are listed in Table 1.2. Other core measures are listed in Table 1.3.

Table 1.2. Related core process and outcome measures (Measures that include data for all racial and ethnic groups and that are included in the summary analyses in the Highlights to this report are in *italics*.)

Section	Process measures	Outcome measures
Effectiveness—Cancer	• *Adults age 50 and over who received colorectal cancer screening* • *Women age 40 and over who received a mammogram in the last 2 years*	• *Colorectal cancer diagnosed at advanced stage* • *Colorectal cancer deaths per 100,000 population per year* • *Breast cancer diagnosed at advanced stage* • *Breast cancer deaths per 100,000 female population per year*
Effectiveness—Diabetes	• Composite: Adults age 40 and over with diagnosed diabetes who received all three recommended services for diabetes in the calendar year	• Hospital admissions for diabetes with short-term complications per 100,000 population age 18 and over*
Effectiveness—Mental Health and Substance Abuse	• Adults with a major depressive episode in the last 12 months who received treatment for depression in the last 12 months • People age 12 and over who needed treatment for any illicit drug use or alcohol problem and who received such treatment at a specialty facility in the last 12 months	• Suicide deaths per 100,000 population
Effectiveness—Supportive and Paliative Care	• *Long-stay nursing home residents with physical restraints*	• *High-risk long-stay nursing home residents and short-stay residents with pressure sores* • *Adult home health care patients who were admitted to the hospital*

*Not included in core measure counts in 2009.

Table 1.2. Related core process and outcome measures (Measures that include data for all racial and ethnic groups and that are included in the summary analyses in the Highlights to this report are in *italics*.)

Section	Process measures	Outcome measures
Priority Populations—Women	• *Women who completed a pregnancy in the last 12 months who first received prenatal care in the first trimester.*	• *Infant deaths per 1,000 live births, birth weight <1,500 grams*
Priority Populations—Children	• *Composite: Children ages 19-35 months who received all recommended vaccines* • Children ages 2-17 for whom a health provider ever gave advice about physical activity • Children ages 2-17 for whom a health provider ever gave advice about healthy eating • Children ages 3-6 who ever had their vision checked by a health provider • Children ages 2-17 who had a dental visit in the calendar year	(No outcomes for child health are currently tracked in the NHDR core measure set.)

Table 1.3 Other core process and outcome measures

Section	Process measures	Outcome measures
Effectiveness—End Stage Renal Disease	• *Dialysis patients registered on waiting list for transplantation*	• *Adult hemodialysis patients with adequate dialysis*
Effectiveness—Heart Disease	• *Composite: Hospital patients with heart attack who received recommended hospital care* • *Composite: Hospital patients with heart failure who received recommended hospital care*	• *Deaths per 1,000 adult hospital admissions with acute myocardial infarction*
Effectiveness—HIV and AIDS	(HIV process measures tracked in the NHDR are noncore.)	• *New AIDS cases per 100,000 population age 13 and over*
Effectiveness—Respiratory Diseases	• Adults age 65 and over who ever received pneumococcal vaccination • *Composite: Hospital patients with pneumonia who received recommended hospital care*	• *Patients with tuberculosis who completed a curative course of treatment within 1 year of initiation of treatment*
Effectiveness—Lifestyle Modification	• Adult current smokers with a checkup in the last 12 months who received advice to quit smoking • Adults with obesity who ever received advice from a health provider to exercise more	(No outcomes of lifestyle modification are currently tracked in the NHDR.)
Effectiveness—Functional Status Preservation and Rehabilitation	• Screening for osteoporosis in women	• *Adult home health care patients whose ability to walk or move around improved*
Effectiveness—Patient Safety	• *Composite: Adult surgery patients who received appropriate timing of antibiotics* • *Adults age 65 and over who received potentially inappropriate prescription medications in the calendar year*	• *Composite: Adult surgery patients with postoperative complications* • *Composite: Bloodstream infections or mechanical adverse events associated with central venous catheter placements* • *Deaths per 1,000 discharges with complications potentially resulting from care (failure to rescue), adults ages 18-74*
Effectiveness—Timeliness		• *Adults who can sometimes or never get care for illness or injury as soon as wanted* • *Emergency department visits in which patients left without being seen*

Table 1.3 Other core process and outcome measures

Section	Process measures	Outcome measures
Effectiveness—Patient Centeredness	• Composite: Adult ambulatory patients who reported poor communication with health providers • Composite: Children with ambulatory visits whose parents reported poor communication with health providers	
Access	• *People under age 65 with health insurance* • *People under age 65 who were uninsured all year* • *People without a usual source of care who indicated a financial or insurance reason for not having a source of care* • *People with a specific source of ongoing care* • *People with a usual primary care provider* • *Composite: People who were unable to get or delayed in getting needed medical care, dental care, or prescription medicines in the last 12 months*	

Note: Beginning with the 2008 NHDR, all alternating core measures are included in the summary of core measures in order to show consistent measures in the Highlights chapter of each year of the NHDR. Table 1.1 lists all alternating core measures.

Composite Measures

Policymakers and others have voiced their support for composite measures because these measures can be used to facilitate understanding of information from many different measures. The effort to develop new composites is ongoing. In 2006, a number of new composite measures were added.[iv] Composite measures, which now make up about 20% of the core measures, are listed in Table 1.4.

Composite measures in the NHDR and NHQR are created in a variety of different ways. When possible, an appropriateness model is used to create composite measures. It is sometimes referred to as the "all-or-none" approach because it is calculated based on the number of patients who received all appropriate services. One example of this model is the diabetes composite, in which a patient who receives only one or two of the three services would not be counted as having received the recommended care.

In cases where insufficient data are available to apply an appropriateness model, an opportunities model may be applied. The opportunities model assumes that each patient needs and has the opportunity to receive one or more processes of care but not all patients need the same care. Composite measures that use this model summarize the proportion of appropriate care that is delivered. The denominator for an opportunities model composite is the sum of opportunities to receive appropriate care across a panel of process measures.

[iv] Refer to Chapter 1, Introduction and Methods, in the 2006 NHQR for more detailed information about these and other methods that are used to calculate composite measures shown in the reports. Available at www.ahrq.gov/qual/nhqr06/report/Chap1.htm.

The numerator is the sum of the appropriate services that are actually delivered. The composite measure of recommended hospital care for heart attack is an example where this model is applied. The total number of patients who actually receive treatments represented by individual components of the composite measure (e.g., aspirin therapy within 24 hours, beta blocker within 24 hours, smoking cessation counseling) is divided by the sum of all of these opportunities to receive appropriate care.

Composite measures that relate to rates of complications of hospital care are postoperative complications and complications of central venous catheters. For these complication rate composites, an additive model is used that sums individual complication rates. Thus, for these composites, the numerator is the sum of individual complications and the denominator is the number of patients at risk for these complications. The composite rates are presented as the overall rate of complications. The postoperative complications composite is a good example of this type of composite measure: If 50 patients had a total of 15 complications among them (regardless of their distribution), the composite score would be 30%.

Table 1.4. Composite measures in the 2009 NHQR and NHDR

Composite measure	Individual measures forming composite	Model
Receipt of three recommended diabetes services	• Adults age 40 and over with diagnosed diabetes who had a hemoglobin A1c measurement in the calendar year • Adults age 40 and over with diagnosed diabetes who had a dilated eye examination in the calendar year • Adults age 40 and over with diagnosed diabetes who had a foot examination in the calendar year	Appropriateness
Childhood immunization	• Children ages 19-35 months who received 4 doses of diphtheria-tetanus-acellular pertussis vaccine • Children ages 19-35 months who received 3 doses of polio vaccine • Children ages 19-35 months who received 1 dose of measles-mumps-rubella vaccine • Children ages 19-35 months who received 3 doses of *Haemophilus influenzae* type B vaccine • Children ages 19-35 months who received 3 doses of hepatitis B vaccine	Appropriateness
Recommended hospital care for heart failure	• Hospital patients with heart failure who received an evaluation of left ventricular ejection fraction • Hospital patients with heart failure and left ventricular systolic dysfunction who were prescribed ACE inhibitor or ARB* at discharge	Opportunities

Table 1.4. Composite measures in the 2009 NHQR and NHDR

Composite measure	Individual measures forming composite	Model
Recommended hospital care for pneumonia	• Hospital patients with pneumonia who had blood cultures collected before antibiotics were administered • Hospital patients with pneumonia who received the initial antibiotic dose within 6 hours of hospital arrival • Hospital patients with pneumonia who received the initial antibiotic consistent with current recommendations • Hospital patients with pneumonia who received influenza screening or vaccination • Hospital patients with pneumonia who received pneumococcal screening or vaccination	Opportunities
Timing of antibiotics to prevent postoperative wound infection	• Adult surgery patients who received prophylactic antibiotics within 1 hour prior to surgical incision • Adult surgery patients who had prophylactic antibiotics discontinued within 24 hours after surgery end time	Opportunities
Patients' experience of care	• Adult ambulatory patients whose providers sometimes or never listened carefully to them • Adult ambulatory patients whose providers sometimes or never explained things in a way they could understand • Adult ambulatory patients whose providers sometimes or never showed respect for what they had to say • Adult ambulatory patients whose providers sometimes or never spent enough time with them • Children with ambulatory visits whose parents report that their child's providers sometimes or never listened carefully to them • Children with ambulatory visits whose parents report that their child's providers sometimes or never explained things in a way they could understand • Children with ambulatory visits whose parents report that their child's providers sometimes or never showed respect for what they had to say • Children with ambulatory visits whose parents report that their child's providers sometimes or never spent enough time with them	Consumer Assessment of Healthcare Providers and Systems (CAHPS®)
Postoperative complications	• Adult surgery patients with postoperative pneumonia events • Adult surgery patients with postoperative venous thromboembolic events	Additive
Complications of central venous catheters	• Bloodstream infections among central venous catheter placements • Mechanical adverse events among central venous catheter placements	Additive

* ACE = angiotensin-converting enzyme; ARB = angiotensin receptor blocker.

Presentation of Disparities

The 2009 NHDR and its companion NHQR continue to be formatted as chartbooks. The 2009 reports have been improved to show charts and data in a more readable format and to provide more concise summaries of the findings in each chart.

Each section in the 2009 report begins with a description of the importance of the section's topic in a standardized format. After introductory text, chart figures and accompanying findings highlight a small number of core measures relevant to this topic. When data are available, these charts typically show contrasts by:

- Race—Blacks, Asians,[v] NHOPIs, AI/ANs, and people of more than one race compared with Whites.
- Ethnicity—Hispanics compared with non-Hispanic Whites.[vi]
- Income—Poor, near-poor, and middle-income people compared with high-income people.[vii]
- Education—People with less than a high school education and high school graduates compared with people with any college education.
- Geographic location—People who reside in micropolitan (total) areas are compared with metropolitan (total) areas. Within metropolitan areas, people who reside in large central, large fringe, medium, or small metropolitan areas are compared with metropolitan (total). Within nonmetropolitan areas, people who reside in micropolitan and noncore statistical areas are compared with nonmetropolitan (total). Refer to Chapter 4, Residents of Rural Areas, for further information on definitions and methods.

Almost all core measures and composite measures have multiple years of data, so figures typically illustrate trends over time. When data support stratified analyses, a figure showing racial and ethnic differences stratified by socioeconomic factors is included. These data are summarized in bullet format. Figures include a note about the reference group for population-based measures and the denominator for measures based on services or events.

For some measures with supporting data, regression models were run and used to help interpret bivariate and stratified results. (These are discussed in more detail in the Bivariate and Multivariate Analyses section, below.)[viii]

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[v] Asian includes the former category of Asian or Pacific Islander prior to Office of Management and Budget guidelines when information is not collected separately for each group.

[vi] Not all data sources used in the NHDR collect data by race and ethnicity separately (e.g., allowing for comparisons of Blacks with Whites and Hispanics with non-Hispanic Whites). In such cases, comparisons are made by combined racial/ethnic categories (e.g., comparing non-Hispanic Blacks and Hispanics with non-Hispanic Whites).

[vii] Throughout this report, poor is defined as having family income less than 100% of the Federal poverty level; near poor, between 100% and 199%; middle income, between 200% and 399%; and high income, 400% or more of the Federal poverty level. These are based on U.S. Census poverty thresholds for each data year, which are used for statistical purposes, unlike HHS poverty guidelines used for programmatic purposes.

[viii] The measures are obese adults given advice about exercise and individuals having a usual primary care provider.

Gaps between priority populations and the reference group are characterized as growing larger, getting smaller, or not changing. This is part of the effort by HHS and AHRQ to provide information on where the Nation is—and is not—making progress in reducing disparities in health care.

Findings presented in the text meet report criteria for importance[ix]; comparisons not discussed in the text do not meet these criteria. However, absence of differences that meet criteria for importance should not be interpreted as absence of disparities. Often, large differences between groups did not meet criteria for statistical significance because of small sample sizes and limited power. In addition, significance testing used in this report does not take into account multiple comparisons.

Effectiveness measures for each condition or care setting are organized further into categories that reflect the patient's need for preventive care, treatment of acute illness, or management of chronic conditions. Further detail on each of these categories and the measures included can be found in Chapter 2, Quality of Health Care.

Trends in Health Care Quality and Access

As in previous NHDRs, the 2009 report uses the earliest and most recent available NHDR data estimates for each measure to calculate average annual rate of change for the general U.S. population and for each racial, ethnic, and socioeconomic group. Consistent with *Health, United States*,[1] the geometric rate of change, which assumes the same rate each year between the two time periods, has been calculated for the 2009 NHDR and NHQR.[x]

Two criteria are applied to determine whether a significant trend exists:

- First, the difference between the oldest and most recent estimates must be statistically significant at alpha=0.05.
- Second, the average annual rate of change must be at least 1% to be considered statistically significant when the measures are framed either as a favorable outcome or as an adverse outcome.

For example, assume that a favorable outcome, receipt of a needed service, increased from 90% to 94% over a 5-year period. To assess meaningfulness, statistical significance of this difference would first be assessed using a two-tailed test. If significant with alpha≤0.05, the average annual rate of change would then be calculated using the geometric rate of change formula. In this case, $[(94/90)^{1/5}–1] \times 100$ yields an average annual rate of change of 0.9% per year, less than our threshold of 1% per year. The measure is then converted into an adverse outcome, lack of receipt of a needed service, which decreased from 10% to 6% over the time period. Applying the geometric rate of change formula, $[(6/10)^{1/5}–1] \times 100$, yields an average annual rate of change of –9.7% per year. Because this rate of change with the measure framed negatively as an adverse outcome exceeds our 1% threshold, we consider this change to be meaningful.

[ix] Criteria for importance are that the difference is statistically significant at the alpha=0.05 level, two-tailed test, and that the relative difference is at least 10% different from the reference group when framed positively as a favorable outcome or negatively as an adverse outcome.

[x] The geometric rate of change assumes that a measure increases or decreases at the same rate during each year between two time periods. It is calculated using the following formula: $[(VY/VZ)^{1/N}–1] \times 100$, where VY is the most recent year's value, VZ is the most distant year's value, and N is the number of years in the interval. Refer to the entry for Average Annual Rate of Change in Appendix II, Definitions and Methods, *Health, United States, 2007* (available at http://www.cdc.gov/nchs/hus.htm).

Only changes over time that meet these criteria are discussed in the 2009 reports. Changes in disparities are categorized as follows:

- Core measures for which the relative differences are changing less than 1% per year are identified as staying the same.
- Core measures for which the relative differences are becoming smaller at a rate of more than 1% per year in the same direction are identified as improving.
- Core measures for which the relative differences are becoming larger at a rate of more than 1% per year in the same direction are identified as worsening.
- Changes of greater than 5% per year are also differentiated from changes between 1% and 5% per year in some figures.

An additional constraint relates to trends among specific racial and ethnic groups. Different Federal databases completed transition to the new Federal standards for racial and ethnic data that were required by 2003 at different times. These new standards created two separate racial categories: Asian and NHOPI. In addition, individuals could report more than one race. Since a large proportion of AI/ANs identify as mixed race, many AI/ANs may be categorized as more than one race. In contrast, effects on estimates for Whites, Blacks, and Hispanics were proportionately much smaller. Therefore, the 2009 NHDR, as in the previous year, shows shorter trends (i.e., fewer years of data) for groups directly or significantly affected by the new standards, such as Asian, NHOPI, AI/AN, and multiple-race individuals.

Bivariate and Multivariate Analyses

Bivariate analyses are included for some measures for which data are available to examine the interrelationship between race/ethnicity and socioeconomic factors. This year, the NHDR also examines the interrelationship between insurance status and income for quality of care in more depth. This relationship is shown for some selected measures through the use of bivariate analyses in Chapter 4, Priority Populations.

To further address the interrelationships among different demographic groups and socioeconomic factors, such as income and insurance, multivariate analyses were conducted for a small number of measures.[xi] These analyses generated adjusted percentages that control for multiple factors simultaneously. For example, the percentages of breast cancer screening are compared for different racial and ethnic groups after adjusting for differences in the distributions of income, education, insurance, age, gender, and geographic location. To account for Medicare, the analyses were done separately for people under age 65 and age 65 years and over.

[xi] Multivariate analyses were conducted for the following measures for which data were available: breast cancer screening, children who did not have patient-centered care, children who received advice about healthy eating, children who sometimes or never got care for illness or injury as soon as wanted, children ages 3-6 who ever had a vision check, adults with a dental visit in the past year, diabetes patients who received recommended care, adults ages 18-64 uninsured all year, adults who did not have patient-centered care, adults with a usual primary care provider, adult smokers with advice to quit smoking, and adults who sometimes or never got care for illness or injury as soon as wanted.

Finally, to ensure that the findings were not biased by the sequence in which each factor was entered into the analysis, 12 separate analyses were done for each of the 12 measures. Adjusted percentages are used to quantify the magnitude of disparities after controlling for a number of confounding factors. Results of multivariate analyses are shown for two quality measures (breast cancer screenings and recommended care for diabetes) and two access measures (percentage uninsured and percentage with specific source of ongoing care).

Quantifying Disparities

In the Highlights and in Chapter 4, Priority Populations, the extent of disparities across the core measures is summarized for Blacks, Hispanics, Asians, NHOPIs, AI/ANs, and poor populations. Racial, ethnic, and socioeconomic groups are compared with a designated reference group for each core measure. Each group could receive care that is worse than, about the same as, or better than the reference group. For each group, the percentages of measures for which the group received worse care, similar care, or better care were calculated.

Health care utilization measures are difficult to interpret and were excluded when summarizing disparities in access to care.[xii] In Chapter 4, Priority Populations, which presents information on each population separately, all core measures are used when summarizing trends in disparities for each group. However, in the Highlights, where multiple groups are presented side by side, only core measures with estimates for all racial and ethnic groups over time are used, to facilitate comparisons across groups. An exception is made for income comparisons of quality measures because much less information is available for income groups than for racial and ethnic groups.

Beginning with the 2005 NHDR, rates relative to standard reference groups are used to quantify the magnitude of disparities and to identify the largest disparities specific groups faced. For each group, the group rate was divided by the reference group rate to calculate the relative rate for each core measure. Relative rates of selected core measures are presented in the Highlights section of this report.

Changes to the Measure Set

The measure sets used in the 2008 NHDR and NHQR have been improved in several ways for 2009. As in previous years, a handful of measures were modified to reflect changing standards of care or improved information about care. Although no core measures were added, some noncore measures are being presented in the reports for the first time in 2009.

[xii] Interpreting health care utilization data is more complex than analyzing data on patient perceptions of access to care. Along with access to care, health care utilization is strongly affected by health care need and patient preferences and values. In addition, greater use of services does not necessarily indicate better care. In fact, high use of some inpatient services may reflect impaired access to outpatient services. For these reasons, measures of health care utilization are excluded from summaries of access to health care.

Modifications to Existing Composite Measures

The changes applied to existing measures this year were for individual component measures that make up composite measures. The changes affect the comparability of data over time to varying degrees for each measure. Beginning in the 2007 reports, the following core composite measures of effectiveness and patient safety underwent modifications:

- Recommended hospital care received by Medicare patients with acute myocardial infarction composite. The individual measure on use of angiotensin-converting enzyme (ACE) inhibitors in patients with left ventricular systolic dysfunction was changed to also include angiotensin receptor blockers (ARBs) as an acceptable alternative.
- Recommended hospital care received by Medicare patients with heart failure. The individual measure on use of ACE inhibitors in patients with left ventricular systolic dysfunction was changed to also include ARBs as an acceptable alternative.
- Recommended hospital care received by Medicare patients with pneumonia. Two component measures underwent revision:
  - The individual measure of appropriate antibiotic selection for community-acquired pneumonia was changed to exclude patients with health care-associated pneumonia from the denominator used in the calculation.
  - The individual measure for the collection of samples for blood culture within 24 hours of hospital arrival was changed so that only those patients who were admitted to the intensive care unit within 24 hours of hospital arrival are included in the denominator.
- Postoperative care. The individual measure for postoperative urinary tract infection was refined to include only patients with catheter-associated urinary tract infections.

New Noncore Measures

The Interagency Work Group identifies noncore measures to provide additional information to fill a specific data gap in a particular topic area. Each year, the NHDR features noncore measures in special focus sections of the report. The following new noncore measure is included in the 2009 NHDR to fill an identified gap:

- One measure of workforce diversity from the American Community Survey: U.S. dentistry professionals by race and ethnicity.

Measure revisions were proposed and reviewed in meetings of the Interagency Work Group for the NHDR, which includes representation from across HHS.

Databases Used in the 2009 Reports

Table 1.5 lists the databases used in the 2009 reports.

Table 1.5. Databases used in the 2009 reports (new databases in *italics*)

Survey data collected from populations

- AHRQ, Medical Expenditure Panel Survey (MEPS), 2002-2006
- CAHPS® (Consumer Assessment of Healthcare Providers and Systems) Hospital Survey, 2008
- *California Health Interview Survey, 2001-2007*
- Centers for Disease Control and Prevention (CDC), Behavioral Risk Factor Surveillance System (BRFSS), 2003-2006
- CDC-National Center for Health Statistics (NCHS), National Health and Nutrition Examination Survey (NHANES), 1999-2006
- CDC-NCHS, National Health Interview Survey (NHIS), 1998-2007
- CDC-NCHS and National Center for Immunization and Respiratory Diseases, National Immunization Survey (NIS), 2000-2007
- Centers for Medicare & Medicaid Services (CMS), Medicare Current Beneficiary Survey (MCBS), 1998-2005
- Health Resources and Services Administration (HRSA) and CDC-NCHS, National Survey of Children With Special Health Care Needs, 2005-2006
- *Massachusetts Health Quality Partners (MHQP), Patient Experience Survey, 2007*
- National Hospice and Palliative Care Organization, Family Evaluation of Hospice Care (FEHC), 2005-2008
- Substance Abuse and Mental Health Services Administration (SAMHSA), National Survey on Drug Use and Health (NSDUH), 2002-2007
- U.S. Census Bureau, American Community Survey (ACS), 2007

Data collected from samples of health care facilities and providers

- American Cancer Society and American College of Surgeons, National Cancer Data Base (NCDB), 2000-2006
- CDC-NCHS, National Ambulatory Medical Care Survey (NAMCS), 1997-2007
- CDC-NCHS, National Home and Hospice Care Survey, 2007
- CDC-NCHS, National Hospital Ambulatory Medical Care Survey-Emergency Department (NHAMCS-ED), 1997-2007
- CDC-NCHS, National Hospital Ambulatory Medical Care Survey-Outpatient Department (NHAMCS-OPD), 1997-2007
- CDC-NCHS, National Hospital Discharge Survey (NHDS), 1998-2006
- CMS, End Stage Renal Disease Clinical Performance Measures Project (ESRD CPMP), 2002-2007

Table 1.5. Databases used in the 2009 reports (new databases in *italics*)

Data extracted from data systems of health care organizations
• AHRQ, Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases disparities analysis file,[a] 2001-2006
• CMS, Home Health Outcomes and Assessment Information Set (OASIS), 2002-2008
• CMS, Hospital Compare, 2008
• CMS, Medicare Patient Safety Monitoring System (MPSMS), 2003-2007
• CMS, Nursing Home Minimum Data Set (MDS), 2000-2008
• CMS, Quality Improvement Organization (QIO) program, Hospital Quality Alliance (HQA) measures, 2002-2007
• HIV Research Network (HIVRN) data, 2004-2006
• Indian Health Service, National Patient Information Reporting System (NPIRS), 2003-2006
• *Indian Health Service Clinical Reporting System, National Government Performance and Results Act (GPRA) Report, 2008*
• NIH, United States Renal Data System (USRDS), 2000-2005
• SAMHSA, Treatment Episode Data Set (TEDS), 2002-2005
Data from surveillance and vital statistics systems
• CDC-National Center for HIV, Viral Hepatitis, STD, and TB Prevention, HIV/AIDS Reporting System, 2000-2007
• CDC-National Center for HIV, STD, and TB Prevention, TB Surveillance System, 2000-2005
• CDC-NCHS, National Vital Statistics System (NVSS), 1999-2006
• NIH-National Cancer Institute, Surveillance, Epidemiology, and End Results (SEER) program, 2000-2006

[a] This file is designed to provide national estimates of disparities in the AHRQ Quality Indicators using weighted records from a sample of hospitals from the following 25 States: Arizona, Arkansas, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Kansas, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, New Jersey, New York, Oklahoma, Rhode Island, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, and Wisconsin.

Individuals With Disabilities

The Interagency Work Group Subcommittee on Disability Statistics convened to develop a broad definition of disabilities that can be applied across different national data sources to obtain data on the quality of care for adults with disabilities. Beginning with the 2007 NHDR, AHRQ has used a broad, inclusive measure of disability. This measure is intended to be consistent with statutory definitions of disability, such as the first criterion of the Americans With Disabilities Act of 1990, 42 U.S.C. §§ 12181 et seq. (i.e., having a physical or mental impairment that substantially limits one or more major life activities) and Federal program definitions based on the Americans With Disabilities Act.

For the purpose of the NHDR, people with disabilities are those with physical, sensory, and/or mental health conditions who also have an associated decrease in functioning in such day-to-day activities as bathing, walking, doing everyday chores, and/or engaging in work or social activities. In displaying the data on disability, paired measures are shown to preserve the qualitative aspects of the data:

- Limitations in *basic* activities represent problems with mobility and other basic functioning at the person level.
- Limitations in *complex* activities represent constraints encountered when people, in interaction with their environment, attempt to participate in community life.

The use of the subcommittee's recommendation of these paired measures of basic and complex activity limitations is conceptually similar to the way others have divided disability. It is also consistent with the International Classification of Functioning, Disability, and Health separation of activities and participation domains. These two categories are not mutually exclusive; people may have limitations both in basic activities and complex activities. Further information regarding the definition and methods can be found in the Individuals With Disabilities and Special Health Care Needs section in Chapter 4, Priority Populations.

Reference

1. National Center for Health Statistics. Health, United States, 2007: with chartbook on trends in the health of Americans. Hyattsville, MD: Centers for Disease Control and Prevention; 2007. Available at: http://www.cdc.gov/nchs/data/hus/hus07.pdf. Accessed on August 27, 2009.

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, a substantial body of public health, social science, and health services research has shown extensive disparities in health care related to race, ethnicity, and socioeconomic factors. These disparities have been confirmed in previous releases of the National Healthcare Disparities Report (NHDR).

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 factors.
- 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 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 detectable by screening, that may be affected by the quality of health care received.

How This Chapter Is Organized

This chapter presents information about disparities in the quality of health care in America, with a presentation of a subset of core measures. The measures used here are the same as those used in the National Healthcare Quality Report (NHQR). 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.

The effectiveness of care section has been reorganized into seven clinical areas (cancer, diabetes, end stage renal disease (ESRD), heart disease, HIV and AIDS, mental health and substance abuse, and respiratory diseases) and three types of health care services that typically cut across clinical conditions (lifestyle modification, functional status preservation and rehabilitation, and supportive and palliative care). Maternal and child health is discussed in Chapter 4, Priority Populations, in the sections on women and children.

As in previous NHDRs, this chapter's discussion of quality of care focuses on disparities in quality related to race, ethnicity, and socioeconomic factors 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 factors, as well as some stratified analyses.

Categorization of Effectiveness Measures by Health Care Need

In the effectiveness section of this chapter, measures are organized into categories 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 organized separately, because prevention, treatment, and management can all play important roles in affecting outcomes.

- **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. In addition, detecting health problems at an early stage increases the chances of effectively treating them, often reducing suffering and costs.
- **Treatment**—Even when preventive care is ideally implemented, it cannot entirely avert the need for acute care. Delivering optimal treatment for acute illness can help reduce the effects of illness and promote the best recovery possible.
- **Management**—Some diseases, such as diabetes and ESRD, 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 healthy living and frequent medical problems.
- **Outcomes**—Many factors other than health care influence health outcomes, including a person's genes, lifestyle, and social and physical environment. However, for many individuals, appropriate preventive services, timely treatment of acute illness or injury, and meticulous management of chronic disease can positively affect mortality, morbidity, and quality of life.

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. Effectiveness measures presented in this section are organized within the categories of prevention, treatment, management, and outcomes. For findings related to all core measures of effectiveness, refer to Tables 2.1a and 2.1b.

Section	Measure
Prevention	
Cancer	Breast cancer screening
Respiratory diseases	Pneumococcal vaccination
Lifestyle modification	Counseling smokers to quit smoking
Lifestyle modification	Counseling obese adults about healthy eating
Functional status preservation and rehabilitation	Osteoporosis screening in women
Priority populations—Women (Chapter 4)	Counseling obese adults about exercise
Priority populations—Children (Chapter 4)	Early childhood vaccinations
Priority populations—Children (Chapter 4)	Counseling about healthy eating
Priority populations—Children (Chapter 4)	Dental visits
Treatment	
Cancer	Women with clinical Stage I-IIb breast cancer who received axillary node dissection or sentinel lymph node biopsy*
Cancer	Women treated with breast-conserving surgery who received radiation therapy*
Heart disease	Receipt of angiotensin-converting enzyme or angiotensin receptor blocker for heart attack
Mental health and substance abuse	Receipt of treatment for depression
Mental health and substance abuse	Receipt of needed treatment for illicit drug use or alcohol problem
Respiratory diseases	Receipt of recommended care for pneumonia
Management	
Diabetes	Receipt of three recommended diabetes services
Diabetes	Short-term complications
End stage renal disease	Registration for transplantation
HIV and AIDS	PCP and MAC prophylaxis*
Respiratory diseases	Daily asthma medication
Supportive and palliative care	Use of physical restraints on nursing home residents
Supportive and palliative care	Hospice care*, [i]
Outcomes	
Cancer	Advanced stage breast cancer
End stage renal disease	Adequate hemodialysis
HIV and AIDS	New AIDS cases
Functional status preservation and rehabilitation	Improvement in ambulation in home health care patients
Supportive and palliative care	Pressure sores in nursing home residents
Supportive and palliative care	Acute care hospitalization of home health care patients
Priority populations—Women (Chapter 4)	Heart attack mortality

* Noncore measure.

[i] Two noncore measures of hospice care are from the National Hospice and Palliative Care Organization Family Evaluation of Hospice Care: hospice patients who were not referred to hospice care at the right time and hospice patients who did not receive the right amount of medicine for pain.

Effectiveness

Cancer

Mortality

Number of deaths (2009).....562,340[3]

Cause of death rank (2006) .....2nd[4]

Prevalence

Number of living Americans who have been diagnosed with cancer (2005) .....11,098,450[5]

Incidence

New cases of cancer (2009) .....1,479,350[3]

New cases of breast cancer (2009).....192,370[3]

Cost

Total cost[ii] (2009 est.).....$243.4 billion[6]

Direct costs[iii] (2009 est.).....$99 billion[6]

Cost-effectiveness[iv] of colorectal cancer screening.....$0-$14,000/QALY[7]

Cost-effectiveness of breast cancer screening .....$35,000-$165,000/QALY[7]

Cost-effectiveness of cervical cancer screening .....$14,000-$35,000/QALY[7]

Prevention: Breast Cancer Screening

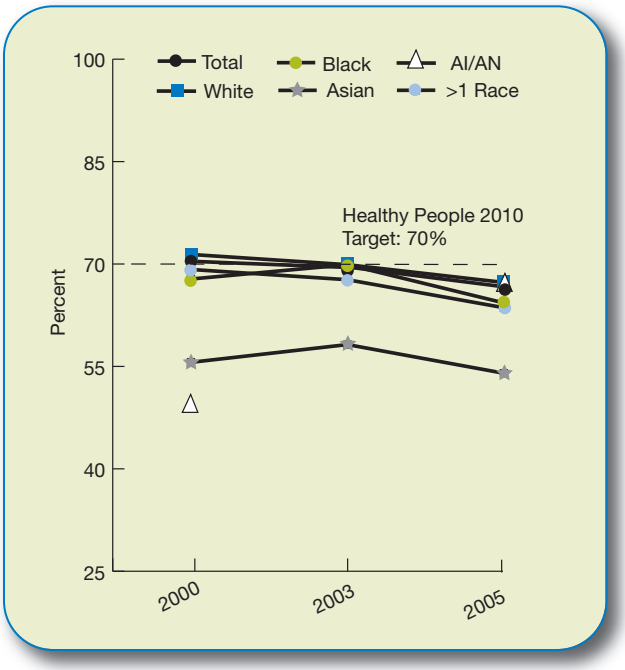
Ensuring that all populations have access to appropriate cancer screening services is a core element of reducing cancer health disparities.[8] This year the NHDR focuses on breast cancer; findings for colorectal cancer are found in the 2008 NHDR. Screening mammography is an effective way to significantly reduce mortality.[9]

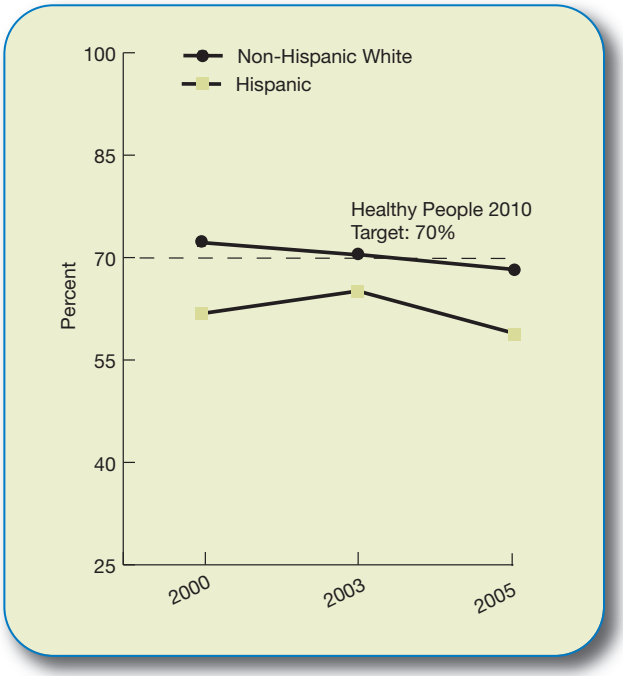
[ii] Total cost is composed of the cost of medical care itself (direct cost) and the economic costs of morbidity and mortality (indirect cost).

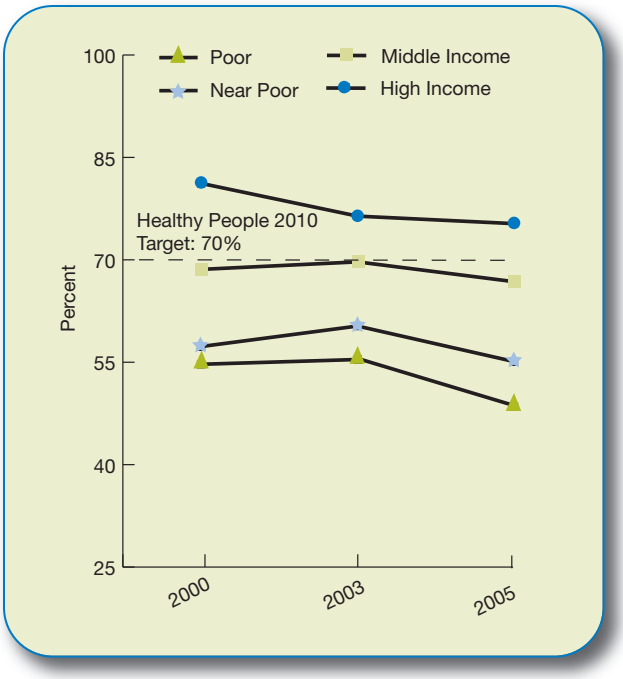
[iii] Direct costs are defined as "personal health care expenditures for hospital and nursing home care, drugs, home care, and physician and other professional services."

[iv] Cost-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 survival adjusted for its value: 1 year in perfect health is equal to 1.0 QALY, while 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.

Figure 2.1. Women age 40 and over who report they had a mammogram within the past 2 years, by race, ethnicity, and income, 2000-2005







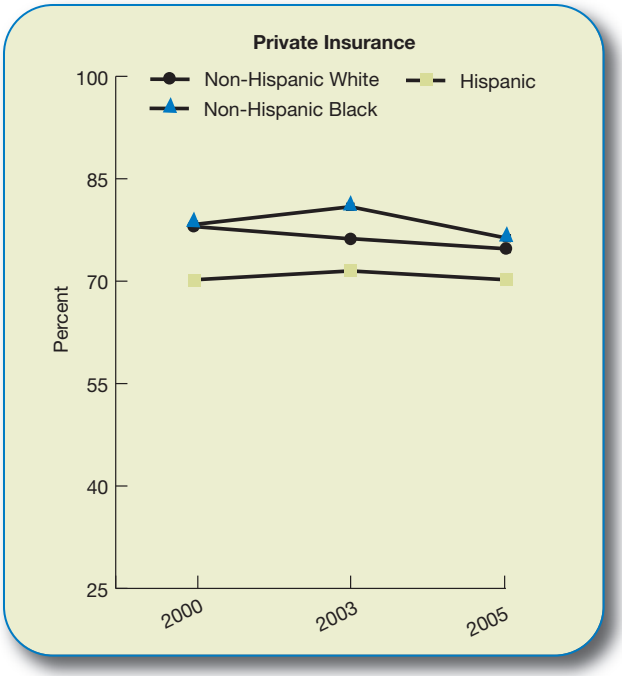
Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey (NHIS), 2000, 2003, and 2005.
Denominator: Women age 40 and over in the civilian noninstitutionalized population.
Note: Data were insufficient for this analysis for American Indians and Alaska Natives in 2003 and for Native Hawaiians and Other Pacific Islanders. The apparent decline in mammography rates between 2003 and 2005 based on the NHIS is due at least in part to changes in the methodology for the 2005 NHIS mammography questions.

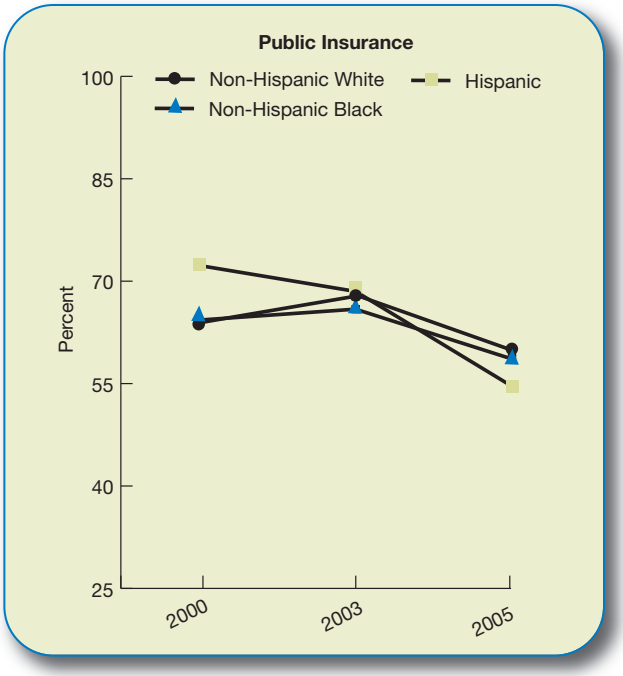
- In 2005, Blacks were less likely than Whites to report they had a mammogram within the past 2 years (64.3% compared with 67.3%).
- In 2005, Asians were less likely than Whites to report they had a mammogram within the past 2 years (54% compared with 67.3%).

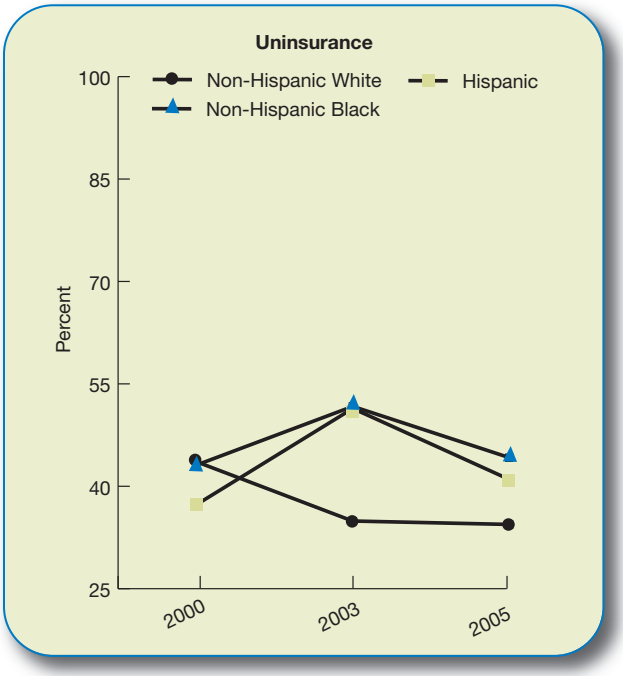
- In 2005, mammography rates remained significantly lower for Hispanic women than for non-Hispanic White women (58.9% compared with 68.2%).
- In 2005, the mammography rate for poor women was about two-thirds that for high-income women (48.5% compared with 75.3%).
- In 2005, the only groups to achieve the Healthy People 2010 target of 70% of women age 40 and over receiving a mammogram within the past 2 years were women with high income (75.3%), women with at least some college education (72.5%, data not shown), and women with private insurance (74.2%, data not shown).

Racial and ethnic minorities, as well as people with low incomes, have disproportionate rates of individuals with public insurance or no insurance. To distinguish the effects of race, ethnicity, and income on cancer screening, this measure is stratified by insurance status (Figures 2.2 and 2.3).

Figure 2.2. Women ages 40-64 who report they had a mammogram within the past 2 years, by race/ethnicity, stratified by insurance, 2000-2005





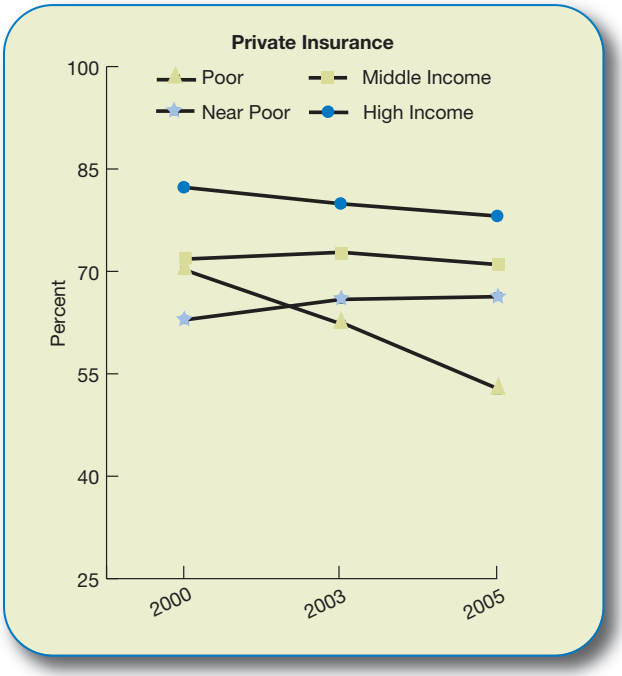


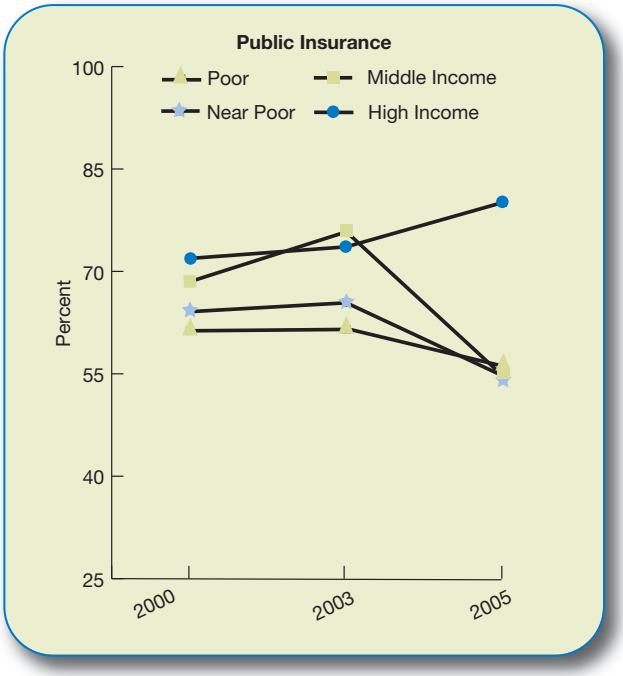
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey (NHIS), 2000, 2003, and 2005.
Denominator: Women age 40 and over in the civilian noninstitutionalized population.
Note: The apparent decline in mammography rates between 2003 and 2005 based on the NHIS is due at least in part to changes in the methodology for the 2005 NHIS mammography questions.

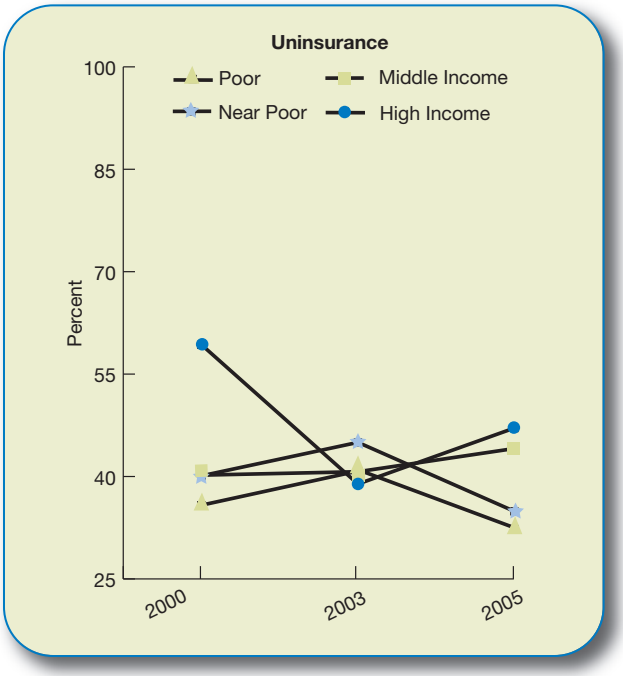
- In 2005, among those with private insurance, there was no statistically significant difference between non-Hispanic Blacks and non-Hispanic Whites in the percentage of women age 40 and over who had a mammogram within the past 2 years (Figure 2.2).

- In 2005, among those with private insurance, there was no statistically significant difference between Hispanics and non-Hispanic Whites in the percentage of women ages 40 and over who had a mammogram within the past 2 years.
- In 2005, among those with public insurance, there was no statistically significant difference between non-Hispanic Blacks and non-Hispanic Whites in the percentage of women age 40 and over who had a mammogram within the past 2 years.
- In 2005, among those with public insurance, there was no statistically significant difference between Hispanics and non-Hispanic Whites in the percentage of women age 40 and over who had a mammogram within the past 2 years.
- Among people who were uninsured during this period, the gap between non-Hispanic Blacks and non-Hispanic Whites increased. In 2005, uninsured non-Hispanic Black women age 40 and over were more likely than uninsured non-Hispanic White women to have had a mammogram within the past 2 years (44.2% compared with 34.4%). Also, uninsured non-Hispanic White women were least likely to have had a mammogram within the past 2 years.
- Among people who were uninsured during this period, the gap between Hispanics and non-Hispanic Whites increased. However, in 2005, there was no statistically significant difference between Hispanics and non-Hispanic Whites in the percentage of women age 40 and over who had a mammogram within the past 2 years.

Figure 2.3. Women ages 40-64 who report they had a mammogram within the past 2 years, by family income, stratified by insurance, 2000-2005





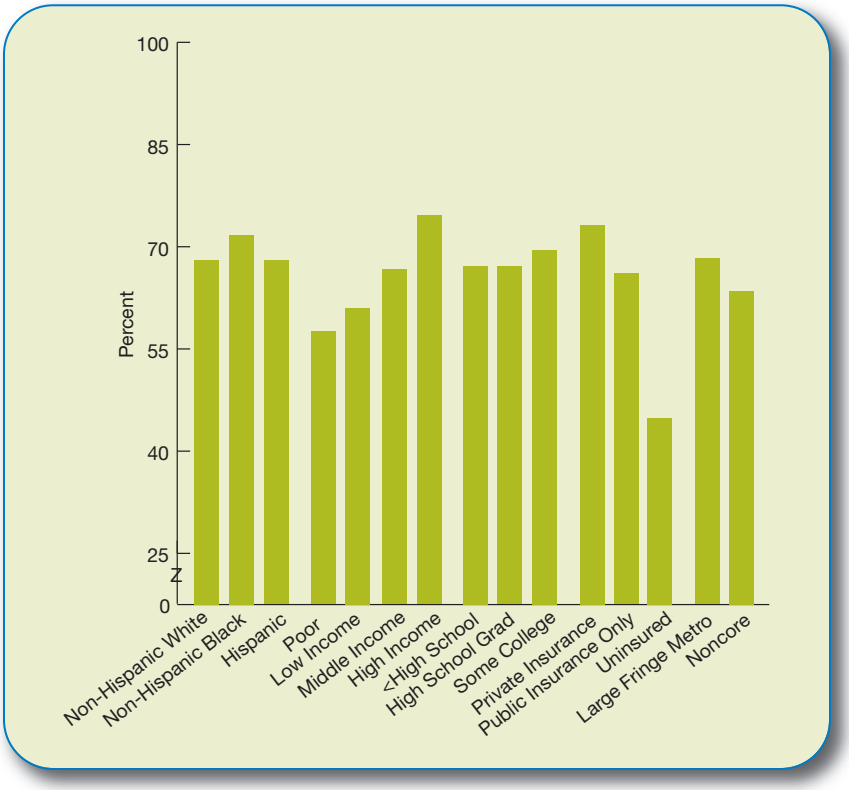


Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey (NHIS), 2000, 2003, and 2005.
Denominator: Women age 40 and over in the civilian noninstitutionalized population.
Note: The apparent decline in mammography rates between 2003 and 2005 based on the NHIS is due at least in part to changes in the methodology for the 2005 NHIS mammography questions.

- From 2000 to 2005, the percentage of women age 40 and over with private insurance who had a mammogram within the past 2 years decreased significantly (from 76.9% to 74.2%; data not shown). In 2005, among those with private insurance, women in all other income groups were less likely than high-income women to have had a mammogram within the past 2 years (Figure 2.3).
- During this period, the percentage of women age 40 and over with public insurance who had a mammogram within the past 2 years decreased significantly (from 64.7% to 57.9%; data not shown). In 2005, among those with public insurance, women in all other income groups were less likely than high-income women to have had a mammogram within the past 2 years (56% for poor, 54.7% for near poor, and 54.7% for middle income, compared with 80.1% for high income).
- Also during this period, the percentage of uninsured women age 40 and over who had a mammogram within the past 2 years remained the same (data not shown). In 2005, among women uninsured all year, poor and near-poor groups were less likely to have had a mammogram within the past 2 years than the high-income group (32.3% for poor and 34.9% for near poor compared with 47.1% for high income).

Each year, multivariate analyses are conducted in support of the NHDR to identify the independent effects of race and socioeconomic factors on quality of health care. Past reports have listed some of these findings as odds ratios. This year, the NHDR presents the results of a multivariate model as adjusted percentages. Adjusted percentages are presented for several measures, including women ages 40-64 who had a mammogram within the past 2 years. Adjusted percentages show the expected percentage for a given subpopulation after controlling for a number of factors, which in this case include race/ethnicity, family income, education, health insurance status, and geographic location. For more information on adjusted percentages, refer to the Methods section in Chapter 1.

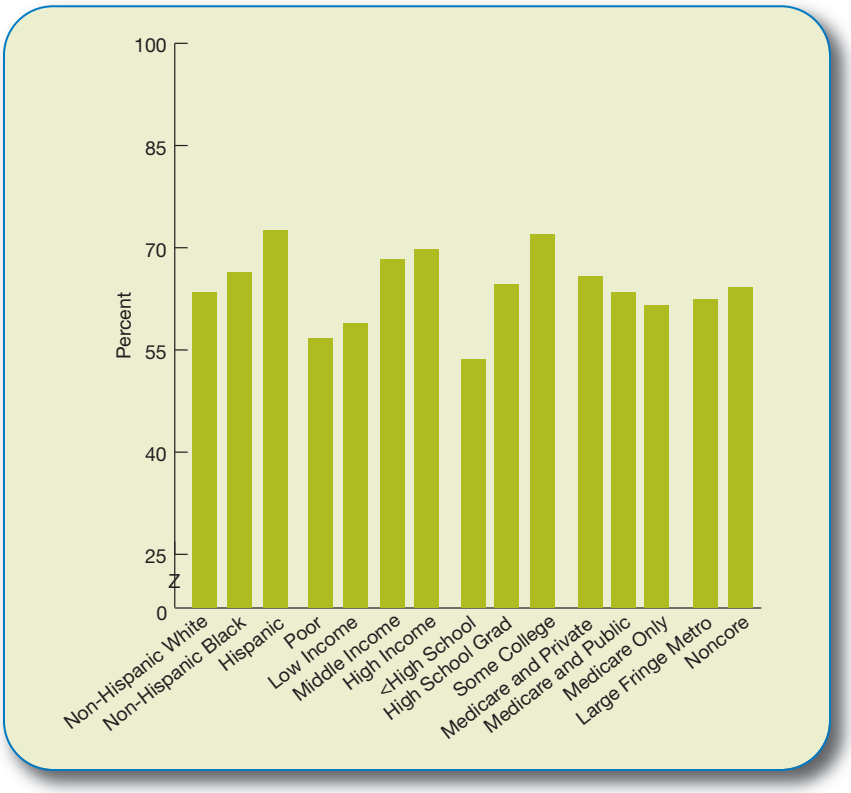
Figure 2.4. Adjusted percentages of women ages 40-64 who had a mammogram within the past 2 years, by race/ethnicity, family income, education, insurance status, and residence location, 2005



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2005.
Note: Adjusted percentages are predicted marginals from a statistical model that includes the covariates race/ethnicity, family income, education, health insurance, and residence location. The adjusted percentages generated from this model control for these multiple factors simultaneously. Refer to Chapter 1, Introduction and Methods, for more information. Geographic typologies are based on Urban Influence Codes using a methodology developed by the National Center for Health Statistics. The Residents of Rural Areas section in Chapter 4 contains more information on geographic typologies and definitions.

- In the multivariate model used, after adjustment, 72% of non-Hispanic Black women ages 40-64 would have had a mammogram within the past 2 years compared with 68% of non-Hispanic White women (Figure 2.4).
- After adjustment, a lower percentage of poor, low-income, and middle-income women ages 40-64 (58%, 61%, and 67%, respectively) would have had a mammogram within the past 2 years compared with high-income women (75%).
- After adjustment, 45% of women ages 40-64 who were uninsured at the time of interview and 66% of women with only public insurance would have had a mammogram within the past 2 years compared with 73% of women who had private insurance.
- After adjustment, 64% of women ages 40-64 who were residing in noncore areas would have had a mammogram within the past 2 years compared with 68% of women who were residing in large fringe metropolitan areas.

Figure 2.5. Adjusted percentages of women age 65 and over who had a mammogram within the past 2 years by race/ethnicity, family income, education, insurance status, and residence location, 2005



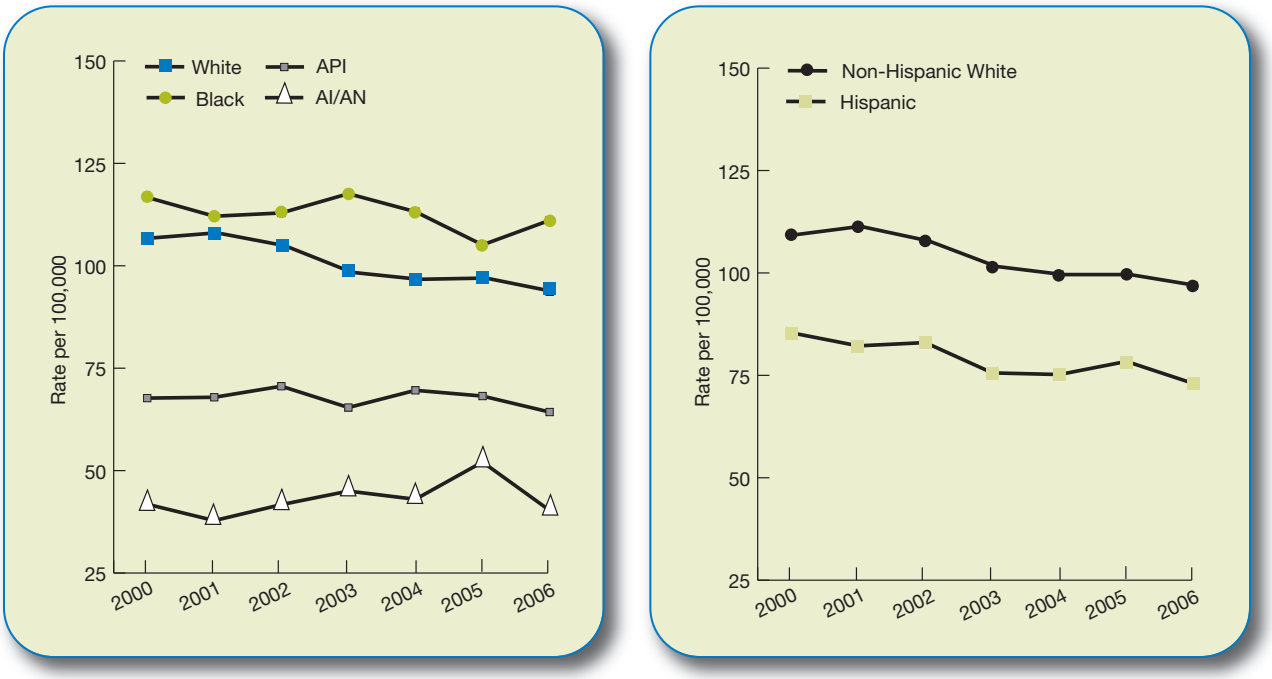
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2005.
Note: Adjusted percentages are predicted marginals from a statistical model that includes the covariates race/ethnicity, family income, education, health insurance, and residence location. See Chapter 1, Introduction and Methods, for more information.

- In the multivariate model used, after adjustment, 73% of Hispanic women age 65 and over would have had a mammogram within the past 2 years compared with 64% of non-Hispanic White women (Figure 2.5).
- After adjustment, 57% of poor women and 59% of low-income women would have had a mammogram within the past 2 years compared with 70% of high-income women.
- After adjustment, 54% of women with less than a high school education and 65% of high school graduates would have had a mammogram within the past 2 years compared with 72% of those with some college education.
- After adjustment, 64% of women who were residing in noncore areas (micropolitan areas) would have had a mammogram within the past 2 years compared with 63% of those who were residing in large fringe metropolitan areas (metropolitan areas).

Outcome: Advanced Stage Breast Cancer

Cancers can be diagnosed at different stages. The rate of cancers that are diagnosed at advanced stages is a measure of the effectiveness of cancer screening efforts. Differences in rates may vary across racial and ethnic groups due to differences in underlying prevalence of breast cancer.

Figure 2.6. Age-adjusted rate of advanced stage (stage II or higher) breast cancer per 100,000 women age 40 and over, by race and ethnicity, 2000-2006



Key: AI/AN = American Indian or Alaska Native; API = Asian or Pacific Islander.
Source: National Cancer Institute, Surveillance, Epidemiology, and End Results Program, 2000-2006.
Denominator: Women age 40 and over.

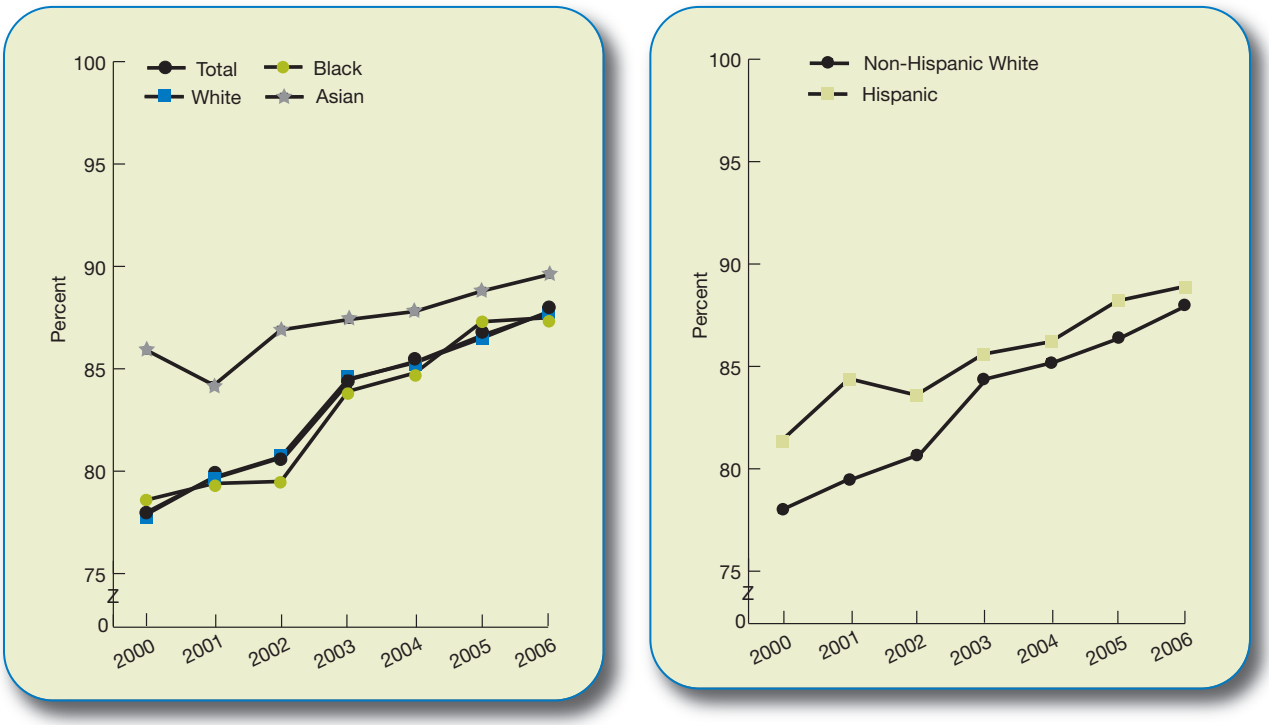
- From 2000 to 2006, statistically significant differences in the rate of advanced stage breast cancer were seen between Asians and Pacific Islanders (APIs) and Whites, and between American Indians and Alaska Natives (AI/ANs) and Whites (Figure 2.6). In 2006, the rate of advanced stage breast cancer was lower for APIs and AI/ANs than for Whites (64.3 per 100,000 for APIs and 40.3 per 100,000 for AI/ANs compared with 93.7 per 100,000 for Whites). The rate was higher for Blacks compared with Whites (111.1 per 100,000 compared with 93.7 per 100,000).

Treatment: Recommended Care for Breast Cancer Patients

Different diagnostic and treatment options exist for various types of cancer. Some aspects of cancer care are well established as beneficial and are commonly recommended. The appropriateness of recommended care depends on different factors, such as the stage or the extent of the cancer within the body (especially whether the disease has spread from the original site to other parts of the body). Other types of care are important for accurate diagnosis, such as ensuring the adequate examination of lymph nodes when surgery (e.g., to remove breast cancer) is performed.

Among women diagnosed with breast cancer who receive surgical therapy, approximately 63% undergo breast-conserving surgery.[10] Randomized controlled trials have shown that women who undergo breast-conserving surgery and postoperative radiation therapy have significantly reduced their rates of localized disease recurrence compared with those who underwent total mastectomy and compared with those who did not receive postoperative radiation.[11-13]

Figure 2.7. Women with clinical Stage I-IIb breast cancer who received axillary node dissection or sentinel lymph node biopsy at the time of surgery (lumpectomy or mastectomy), by race and ethnicity, 2000-2006

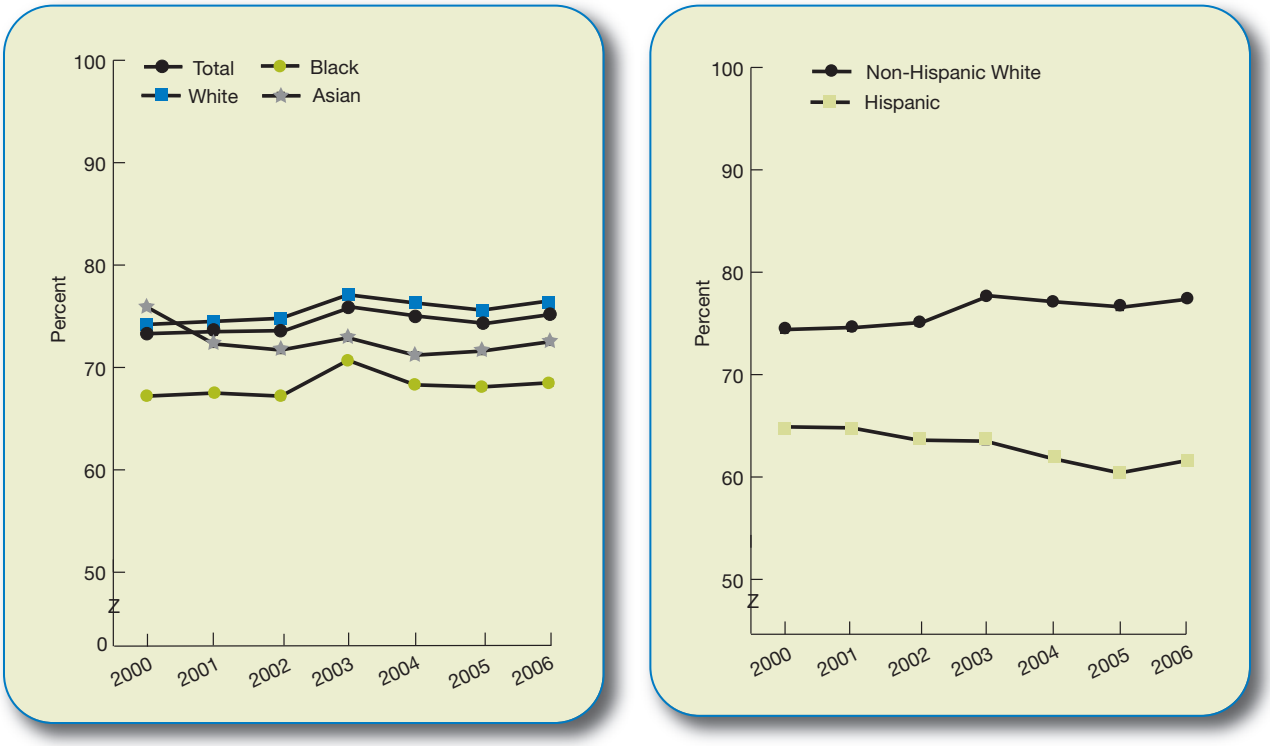


Source: Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base, 2000-2006.
Denominator: U.S. population, women.

- From 2000 to 2006, there was improvement in the percentage of women with clinical Stage I-IIb breast cancer who received an axillary node dissection or sentinel lymph node biopsy at the time of surgery (from 78% to 87.8%; Figure 2.7).

- The percentage of women with clinical Stage I-IIb breast cancer who received an axillary node dissection was lower for people with no insurance than for people with private insurance (90.0% compared with 91.2%; data not shown).
- There were no statistically significant differences by race or ethnicity.

Figure 2.8. Women under age 70 treated for breast cancer with breast-conserving surgery who received radiation therapy to the breast within 1 year of diagnosis, by race and ethnicity, 2000-2006



Source: Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base, 2000-2006.

Denominator: U.S. population, women under age 70 treated for breast cancer (American Joint Committee on Cancer Stage I, II, or III primary invasive epithelial breast cancer) with breast-conserving surgery.

- In 2006, Black patients with Stage I, II, or III breast cancer were less likely than Whites to receive radiation therapy to the breast within 1 year of diagnosis (68.5% compared with 76.5%; Figure 2.8).
- From 2000 to 2006, the gap between Hispanics and non-Hispanic Whites increased. In 2006, Hispanic patients with breast cancer were less likely than non-Hispanic Whites to receive radiation therapy to the breast within 1 year of diagnosis (61.6% compared with 77.4%).

Diabetes

Mortality

Number of deaths (2006).....72,449[4]

Cause of death rank (2006) .....6th[4]

Prevalence

Total number of Americans with diabetes (2007) .....23.6 million[14]

Number of people with diagnosed diabetes (2007) .....17.9 million[14]

Number of people with undiagnosed diabetes (2007) .....5.7 million[14]

Incidence

New cases (age 20 and over, 2007).....1.6 million[14]

Cost

Total cost (2007 est.).....$174 billion[15]

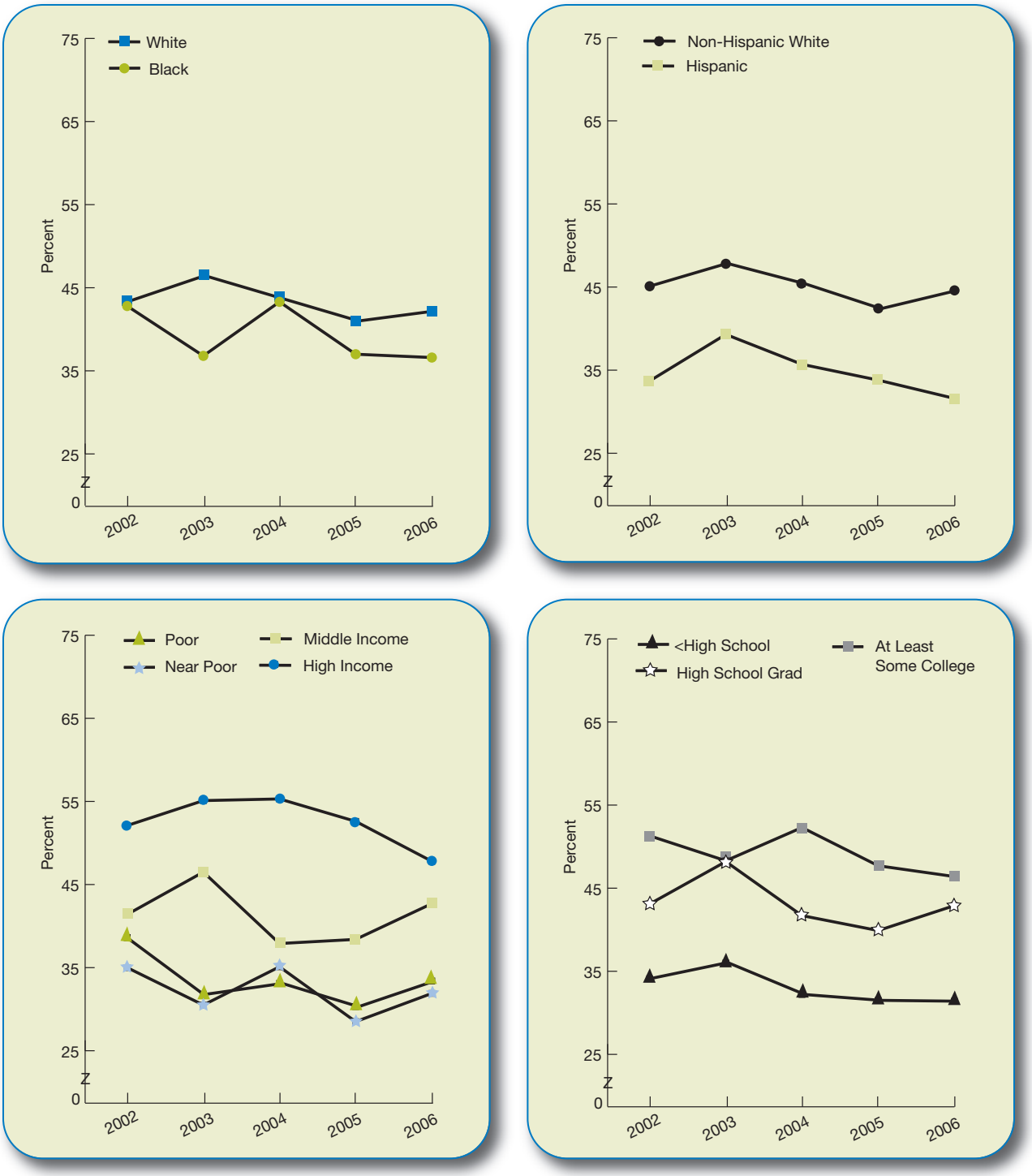
Direct medical costs (2007 est.) .....$116 billion[15]

Management: Receipt of Three Recommended Diabetes Services

Effective management of diabetes includes hemoglobin A1c (HbA1c)[v] testing, eye examination, and foot examination, as well as appropriate influenza immunization and lipid management.[16-18]

[v] HbA1c is glycosylated hemoglobin and its level provides information about control of blood sugar levels.

Figure 2.9. Composite measure: Adults age 40 and over with diagnosed diabetes who received three recommended services for diabetes (HbA1c testing, eye examination, foot examination) in the calendar year, by race, ethnicity, family income, and education, 2002-2006



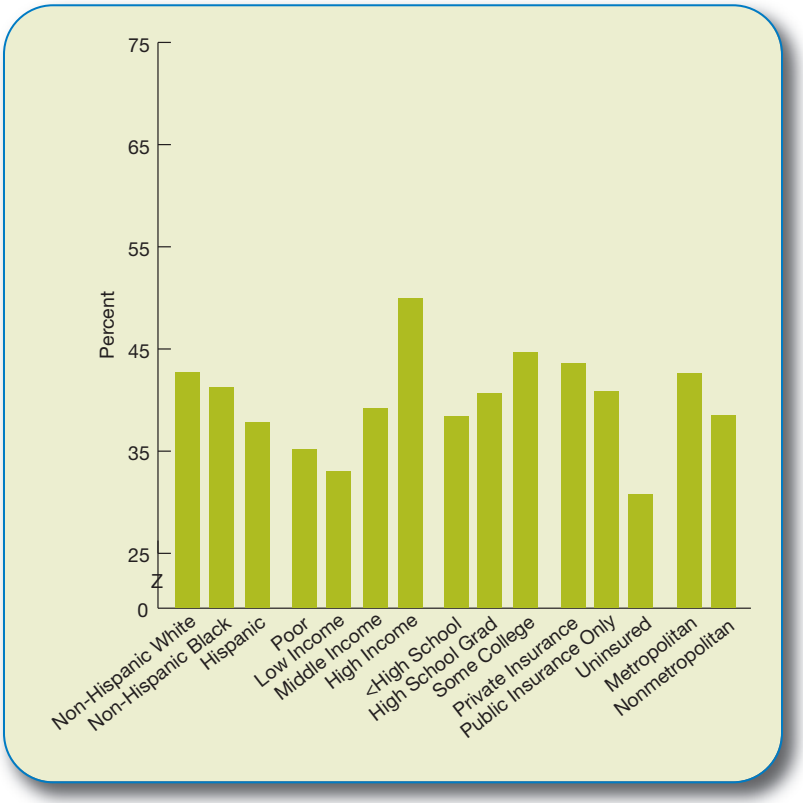
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2006.
Denominator: Civilian noninstitutionalized population age 40 and over.

Note: Recommended services for diabetes are: (1) HbA1c testing, (2) dilated eye examination, and (3) foot examination. Data include people with both type 1 and type 2 diabetes. Rate is age adjusted to the 2000 U.S. standard population. Data were insufficient for this analysis for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

- In 2006, there were no statistically significant differences between Blacks and Whites for adults age 40 and over with diagnosed diabetes who received three recommended services for diabetes in the calendar year (36.6% compared with 42.2%; Figure 2.9).
- In 2006, the percentage was significantly lower for Hispanics than for non-Hispanic Whites (31.6% compared with 44.6%).
- In 2006, the percentage was also significantly lower for poor (33.4%), near-poor (31.9%), and middle-income people (42.7%) than for high-income people (47.8%).
- In 2006, the percentage of adults age 40 and over with diabetes who received three recommended services was lower for people with less than a high school education (31.4%) and high school graduates (42.9%) than for people with at least some college education (46.4%).

As noted above, multivariate analyses were conducted to identify the independent effects of race and socioeconomic factors on several measures. Adjusted percentages are shown for receipt of diabetes services after controlling for race/ethnicity, family income, education, health insurance status, and location.

Figure 2.10. Composite measure: Adjusted percentages of adults ages 40-64 with diagnosed diabetes who received three recommended services for diabetes in the calendar year, by race/ethnicity, family income, education, insurance status, and residence location, 2002-2006



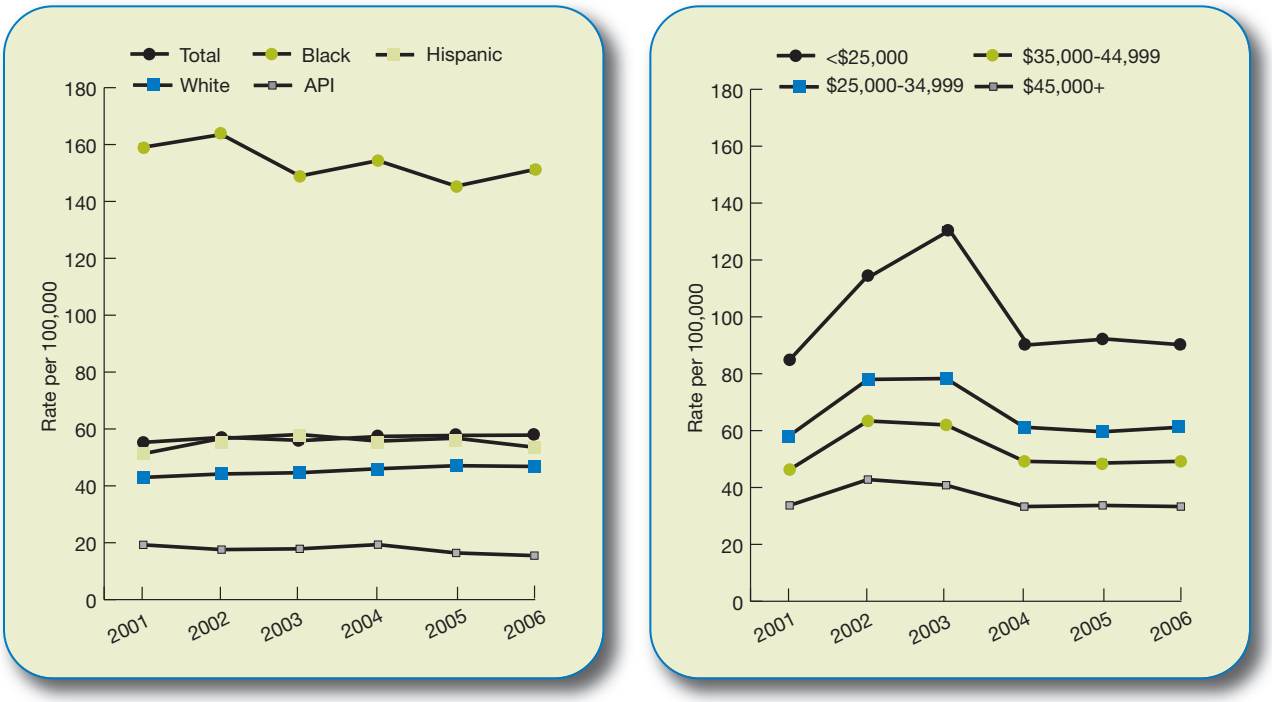
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, pooled 2002-2006 fiscal year files.
Note: Adjusted percentages are predicted marginals from a statistical model that includes the covariates race/ethnicity, family income, education, health insurance, and residence location. Chapter 1, Introduction and Methods, provides more information.

- In the multivariate model used, after adjustment, among adults ages 40-64 with diagnosed diabetes, 35% of poor adults, 33% of low-income adults, and 39% of middle-income adults would have received the three recommended services for diabetes in the calendar year compared with 50% of high-income adults.
- After adjustment, only 38% of adults with diabetes with less than a high school education would have received the three recommended services for diabetes compared with 45% of those with some college education.
- After adjustment, only 31% of adults with diabetes who were uninsured all year would have received all three recommended services for diabetes compared with 44% of those who had any private insurance.
- After adjustment, 39% of adults with diabetes who were living in nonmetropolitan areas would have received all three recommended services for diabetes compared with 43% of those who were living in metropolitan areas.

Outcome: Short-Term Complications

Short-term complications can occur for patients with diabetes when their condition is not managed properly. Very high or very low blood sugar levels or too little insulin can be fatal if untreated and requires emergency care.

Figure 2.11. Hospital admissions for diabetes with short-term complications per 100,000 population, age 18 and over, by race/ethnicity and income, 2001-2006



Key: API = Asian or Pacific Islander.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2001-2006.
Note: Short-term complications include ketoacidosis, hyperosmolarity, or coma and exclude obstetric admissions and transfers from other institutions. White, Black, and API are non-Hispanic. Data were not available for American Indians and Alaska Natives. Data are adjusted for age, gender, and diagnosis-related group clusters. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 25 States that have 66% of the U.S. resident population.

- In 2006, the rate of hospital admissions for short-term complications was more than three times as high for Blacks as for Whites (151.2 per 100,000 population compared with 46.8 per 100,000 population).
- The rate of hospital admissions for short-term complications was higher for Hispanics than for Whites (53.6 per 100,000 population compared with 46.8 per 100,000 population).
- The rate of hospital admissions for short-term complications was almost three times as high for people living in communities with median household incomes of less than $25,000 as it was for people living in communities with median household incomes of $45,000 or more (90.1 per 100,000 population compared with 33.3 per 100,000 population).

End Stage Renal Disease

Mortality

Total ESRD deaths (2006) ..... 87,654[19]

Prevalence

Total cases (2006) ..... 506,256[20]

Incidence

New cases (2006) ..... 110,854[20]

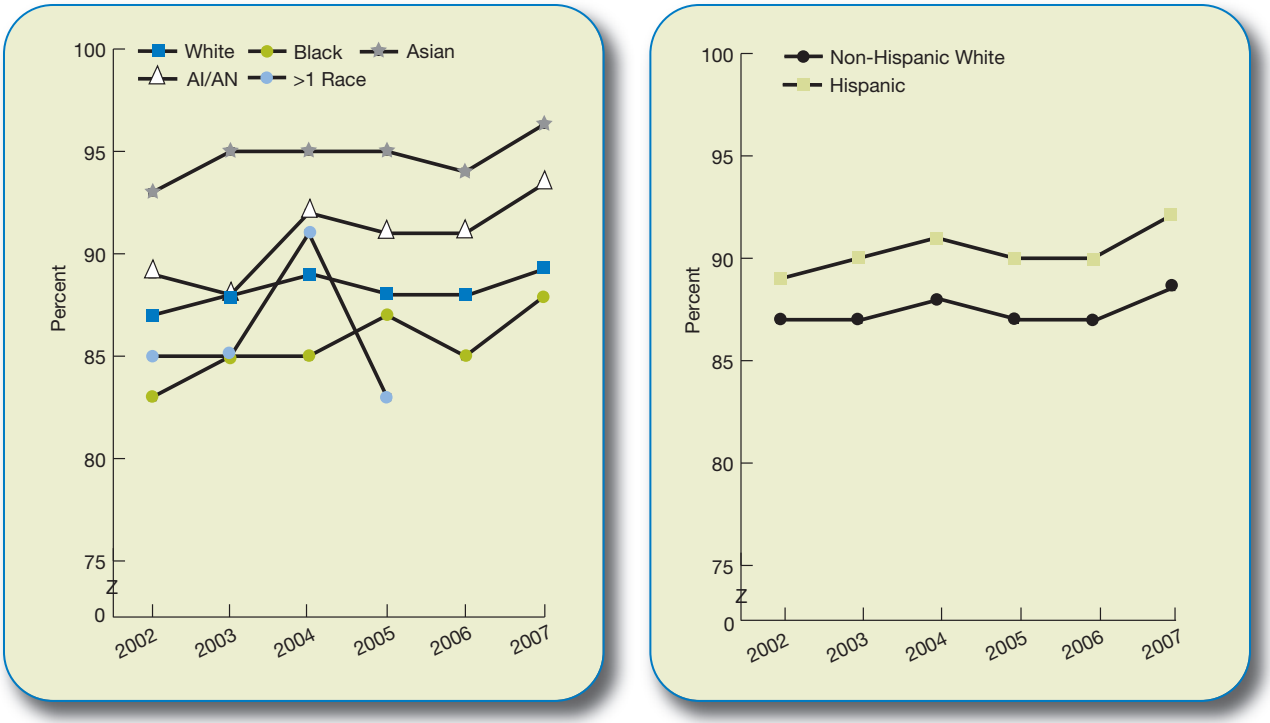
Cost

Total Medicare program expenditure for ESRD (2006 est.) ..... $23.9 billion[21]

Outcome: Adequate Hemodialysis

Dialysis removes harmful waste and excess fluid buildup in the blood that occurs when kidneys fail to function. Hemodialysis is the most common method used to treat advanced and permanent kidney failure. The adequacy of dialysis is measured by the percentage of hemodialysis patients with a urea reduction ratio equal to or greater than 65%; this measure indicates how well urea, a waste product, is eliminated by the dialysis machine.

Figure 2.12. Adult hemodialysis patients with adequate dialysis (urea reduction ratio 65% or greater), by race and ethnicity, 2002-2007



Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Medicare & Medicaid Services, End Stage Renal Disease (ESRD) Clinical Performance Measures Project, 2002-2007.
Denominator: ESRD hemodialysis patients age 18 and over.
Note: Data were not available for Native Hawaiians and Other Pacific Islanders for any data years. Data were not available for multiple race for 2006 and 2007.

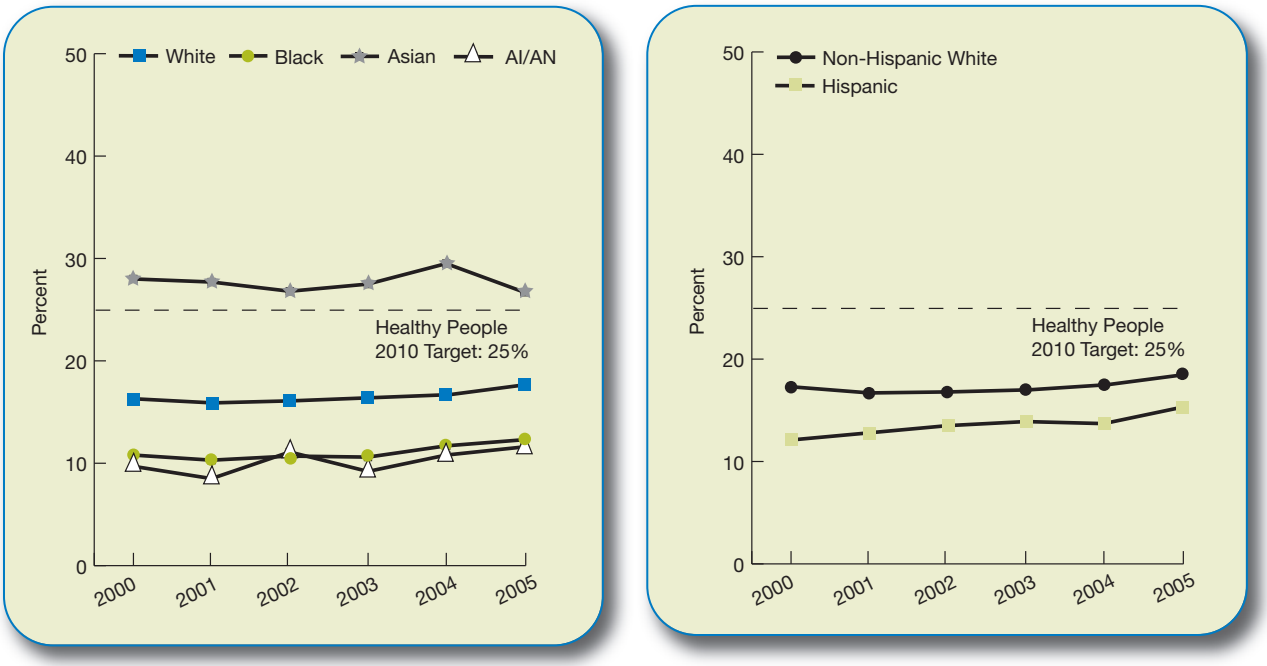
- In 2007, Blacks were less likely than Whites to have adequate dialysis (87.9% compared with 89.3%; Figure 2.12).
- In 2007, the percentage with adequate dialysis continued to be higher for Asians than for Whites (96.3% compared with 89.3%). Furthermore, the percentage of Asians with adequate dialysis remained significantly higher than the percentage of Whites from 2002 through 2007.

- From 2002 to 2007, the percentage of Hispanics with adequate dialysis increased (from 89% to 92.1%). Hispanics continued to have a higher percentage with adequate dialysis than non-Hispanic Whites (92.1% for Hispanics compared with 88.6% for non-Hispanic Whites).
- In 2007, women were more likely than men to have adequate dialysis (93.4% compared with 85.5%; data not shown).

Management: Registration for Transplantation

Kidney transplantation often allows people with ESRD to continue a lifestyle similar to what they had before their kidney failure.[22] It is important for people with ESRD to be registered on the waiting list for kidney transplantation to increase the likelihood of transplantation. However, the number of people on the waiting list greatly exceeds the number who receive transplants. Thus, being on the waiting list does not ensure a transplant.[23] In 2006, 70,778 patients were on the Organ Procurement and Transplantation Network (OPTN) deceased donor kidney transplant waiting list in the United States. Only 10,212 deceased donor kidney transplants were performed.[19]

Figure 2.13. Dialysis patients under age 70 who were registered on a waiting list for transplantation, by race and ethnicity, 2000-2005



Key: AI/AN = American Indian or Alaska Native.
Source: U.S. Renal Data System, 2000-2005.
Denominator: ESRD hemodialysis patients and peritoneal dialysis patients under age 70.
Note: Data were not available for Native Hawaiians and Other Pacific Islanders.

- In 2005, Black dialysis patients continued to be less likely to be registered for transplantation than Whites (12.3% compared with 17.7%; Figure 2.13).
- In 2005, AI/ANs continued to be less likely to be registered for transplantation than Whites (11.6% compared with 17.7%).
- In 2005, this percentage was higher for Asians than for Whites (26.7% compared with 17.7%).
- The gap between Hispanics and non-Hispanic Whites decreased. However, in 2005, the percentage was still lower for Hispanics than for non-Hispanic Whites (15.3% compared with 18.5%).
- From 2000 to 2005, only Asians achieved the Healthy People 2010 target of 25%.

Heart Disease

Mortality

Number of deaths (2006).....631,636[4]

Cause of death rank (2006).....1st[4]

Prevalence

Number of cases of coronary heart disease (2006).....16.8 million[24]

Number of cases of heart failure (2006).....5.7 million[24]

Number of cases of high blood pressure (2006).....73.6 million[24]

Incidence

Number of new cases of heart failure (2004).....550,000[25]

Cost

Total cost of cardiovascular disease (2009 est.).....$474.8 billion[6]

Total cost of heart failure (2009 est.).....$37.2 billion[24]

Direct costs of cardiovascular disease (2009 est.).....$313.3 billion[6]

Cost-effectiveness of hypertension screening.....$14,000-$35,000/QALY[7]

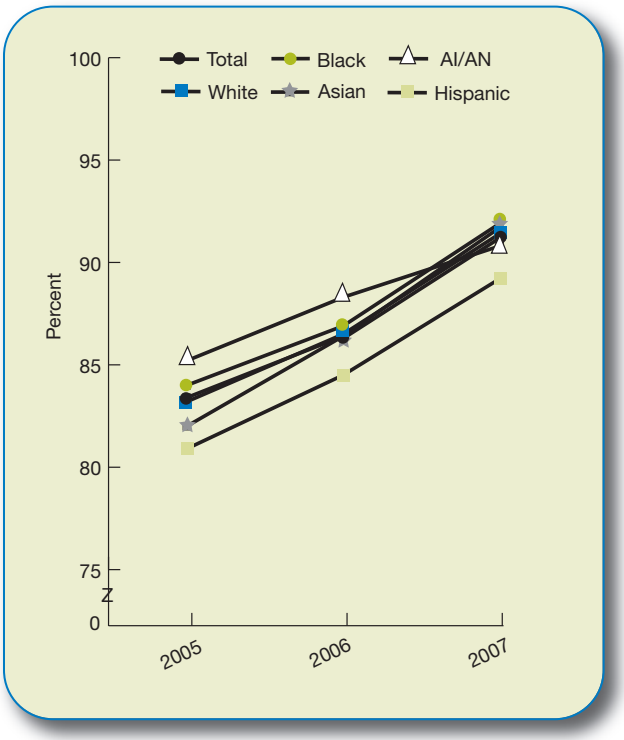
Cost-effectiveness of aspirin prophylaxis.....Net cost savings[7, vi]

Treatment: Receipt of Angiotensin-Converting Enzyme Inhibitor or Angiotensin Receptor Blocker for Heart Attack

One aspect of recommended hospital care for heart attack includes receipt of an angiotensin-converting enzyme (ACE) inhibitor for left ventricular systolic dysfunction. In 2005, the ACE inhibitor measure was modified to include receipt of angiotensin receptor blockers (ARBs) as an alternative to ACE inhibitors.

[vi] Unlike other interventions that often involve greater costs for health benefits, this intervention actually results in net cost savings to society.

Figure 2.14. Hospital patients with heart attack and left ventricular systolic dysfunction who received angiotensin-converting enzyme inhibitor or angiotensin receptor blocker treatment (all payers), by race/ethnicity, 2005-2007



Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Medicare & Medicaid Services, Medicare Quality Improvement Organization Program, 2005-2007.
Denominator: Patients hospitalized for heart attack with left ventricular systolic dysfunction, all ages.
Note: Whites, Blacks, AI/ANs, and Asians are non-Hispanic groups.

- In 2007, there were no statistically significant differences between racial groups in the percentage of hospital patients with heart attack and left ventricular systolic dysfunction who received ACE inhibitor or ARB treatment (Figure 2.14).
- During the same period, the difference between Hispanics and non-Hispanic Whites remained statistically significant. In 2007, the percentage was significantly lower for Hispanics compared with non-Hispanic Whites (89.2% compared with 91.4%).

HIV and AIDS

Mortality

Number of deaths of people with AIDS (2007) .....14,561[26]

Prevalence

Number of people living with HIV infection (not including AIDS; 2007).....263,936[26]

Number of people living with AIDS (2007).....468,578[26]

Incidence

Number of new HIV infections (2007).....56,300[27]

Number of new AIDS cases (2007) .....37,041[26]

Cost

Federal spending on domestic HIV/AIDS care, cash and housing assistance,
and prevention and research (fiscal year 2009 est.).....$19.4 billion[28]

The impact of HIV infection and its late-stage manifestation, AIDS, is disproportionately higher for racial and ethnic minorities and people of lower income and education levels. Although access to care has improved, research shows that Blacks, Hispanics, women, and uninsured people with HIV remain less likely to have access to care and less likely to have optimal patterns of care.[29]

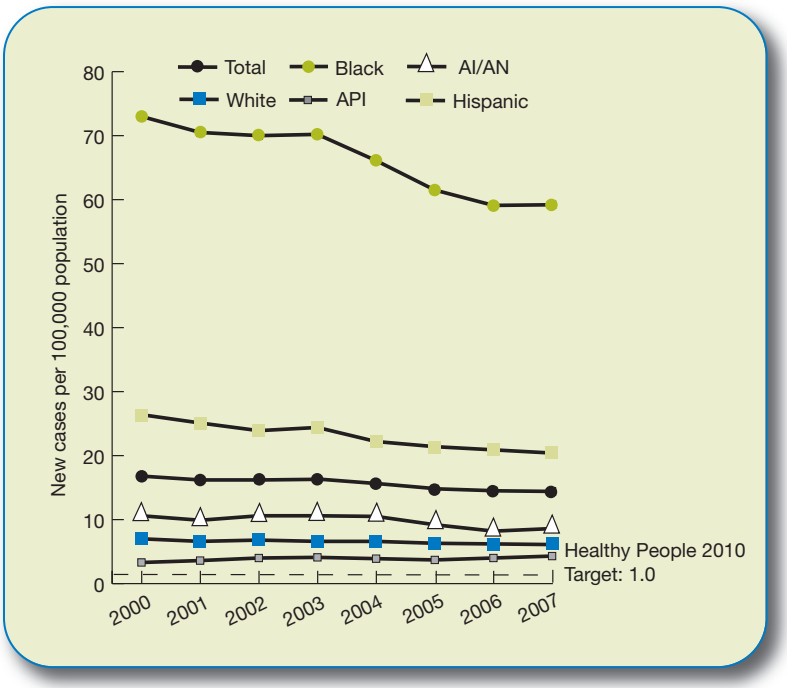
According to the Centers for Disease Control and Prevention, HIV and AIDS disproportionately affect African Americans in the United States. The spread of HIV is linked to complex social and economic factors, including poverty, concentration of the virus in specific geographic areas and smaller sexual networks, sexually transmitted disease comorbidities, stigma (negative attitudes, beliefs, and actions directed at people living with HIV/AIDS or directed at people who engage in behaviors that might put them at risk for HIV), and injection and noninjection drug use and associated behaviors.[30]

The HIV/AIDS epidemic is also a serious threat to the Hispanic community. Hispanics accounted for 15% of the population but had an estimated 17% of the new HIV infections in 2006, which was 2½ times the rate of Whites.[31] In addition to being seriously affected by HIV, Hispanics continue to face challenges in accessing health care, preventive services, and HIV treatment. Undocumented Hispanics face an even greater challenge in accessing care and information regarding HIV and AIDS, but data are limited on HIV infection rates of undocumented immigrants.[32] In 2006, HIV/AIDS was the fourth leading cause of death among Hispanic men and women ages 35-44.[33] Having Medicaid and a usual source of care decreased the likelihood of delaying care for HIV, but research shows that delay in care is still greater for Hispanics and African Americans.[34]

Outcome: New AIDS Cases

Early and appropriate treatment of HIV infection can delay progression to AIDS, so improved management of chronic HIV infection 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.[26, 35]

Figure 2.15. New AIDS cases per 100,000 population age 13 and over, by race/ethnicity, 2000-2007



Key: AI/AN = American Indian or Alaska Native; API = Asian or Pacific Islander.
Source: Centers for Disease Control and Prevention, National Center for HIV, STD, and TB Prevention, HIV/AIDS Surveillance System, 2000-2007.
Denominator: U.S. population age 13 and over.
Note: The source categorizes race/ethnicity as a single item. White = non-Hispanic White; Black = non-Hispanic Black. Data are based on hospital self-reports.

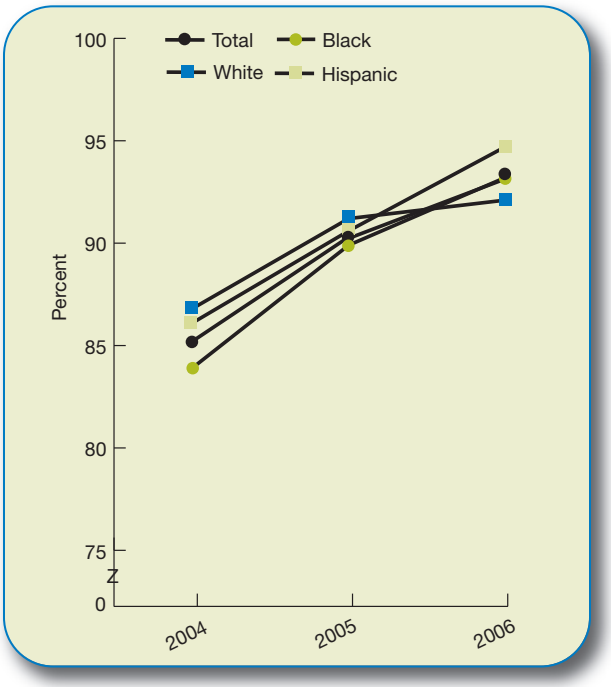
- In 2007, the overall rate of new AIDS cases decreased to 14.4 cases per 100,000 population (Figure 2.15).
- From 2000 to 2007, the rate of new AIDS cases decreased for Blacks (from 73.0 to 59.2 per 100,000), Hispanics (from 26.4 to 20.4 per 100,000), and Whites (from 7.0 to 6.1 per 100,000).
- During this period, the gap between Blacks and Whites decreased. However, in 2007, the rate of new AIDS cases was still almost 10 times as high for Blacks as for Whites (59.2 per 100,000 compared with 6.1 per 100,000).
- From 2000 to 2007, the gap between Hispanics and non-Hispanic Whites also decreased. However, in 2007, the rate of new AIDS cases was still more than three times as high for Hispanics as for Whites (20.4 per 100,000 compared with 6.1 per 100,000).
- In 2007, the rate of new AIDS cases was almost three times as high for men as for women (21.6 per 100,000 compared with 7.5 per 100,000; data not shown).
- No group has reached the Healthy People 2010 target of 1 new AIDS case per 100,000 population.

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,[vii] HIV measures tracked in the NHDR come from the HIV Research Network. Data from the HIV Research Network are not nationally representative of the level of care received by all Americans living with HIV. Participation in this network is voluntary. Network data represent only patients who are actually receiving care, about 14,000 HIV patients per year. Network data do not include patients who do not receive care. Furthermore, data shown below are not representative of the HIV Research Network as a whole because they represent only a subset of network sites that have the best data. This network consists of 18 medical practices across the United States that treat large numbers of HIV patients.

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, oral 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.[36]

Figure 2.16. Adult patients with HIV and CD4 count <200 who received PCP prophylaxis in the calendar year, by race/ethnicity, 2004-2006



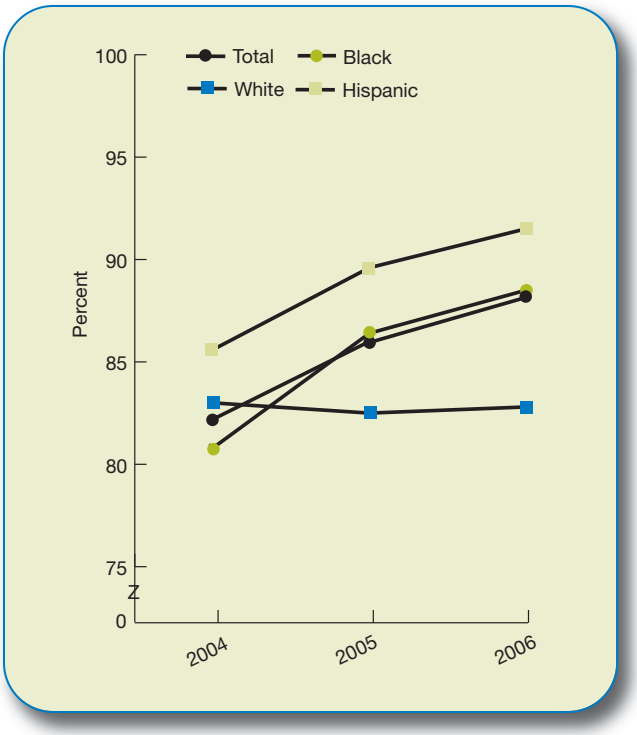
Source: Agency for Healthcare Research and Quality, HIV Research Network, 2004-2006.
Denominator: Adult patients with HIV and CD4 cell counts below 200 receiving care from an HIV Research Network medical practice.
Note: Whites and Blacks are non-Hispanic populations. Data were not available for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

- From 2004 to 2006, the overall percentage of HIV patients with CD4 cell count <200 who received PCP prophylaxis increased. There were no statistically significant differences between any racial or ethnic group and non-Hispanic Whites (Figure 2.16).

[vii] Although program data are collected from all Ryan White CARE Act HIV/AIDS Program grantees, the aggregate nature of the data makes it difficult to assess the quality of care provided by the Ryan White HIV/AIDS Program.

- During this period, the difference between men and women stopped being statistically significant for HIV patients with CD4 cell count <200 who received PCP prophylaxis. In 2006, women were as likely to receive PCP prophylaxis treatment as men (data not shown).

Figure 2.17. Adult patients with HIV and CD4 count <50 who received MAC prophylaxis in the past year, by race/ethnicity, 2004-2006



Source: Agency for Healthcare Research and Quality, HIV Research Network, 2004-2006.
Denominator: Adult patients with HIV and CD4 cell counts below 50 receiving care from an HIV Research Network medical practice.
Note: Whites and Blacks are non-Hispanic populations. Data were not available for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

- From 2004 to 2006, the overall percentage of HIV patients with CD4 cell count <50 who received MAC prophylaxis increased (Figure 2.17).
- In 2006, there was no statistically significant difference between Blacks and non-Hispanic Whites in the percentage of HIV patients with CD4 cell count <50 who received MAC prophylaxis.
- During this period, the percentage of Hispanic HIV patients with CD4 cell count <50 who received MAC prophylaxis surpassed that of non-Hispanic Whites. In 2006, the percentage of HIV patients with CD4 cell count <50 who received MAC prophylaxis was higher for Hispanics than for non-Hispanic Whites (91.5% compared with 82.8%). Hispanics had the highest rate of MAC prophylaxis treatment during this period.

Mental Health and Substance Abuse

Mortality

Rank among causes of death in the United States - suicide (2006).....11th[4]

Alcohol-impaired driving fatalities (2007).....12,998[37]

Prevalence

People age 12 and over with alcohol and/or illicit drug dependence or abuse in the past year (2007).....22.3 million (9.0%)[38]

Adults age 18 and over with serious psychological distress in the past year (2007).....24.3 million (10.9%)[38]

Youths ages 12-17 with a major depressive episode during the past year (2007).....2.0 million (8.2%)[38]

Adults age 18 and over with a major depressive episode during the past year (2007).....16.5 million (7.5%)[38]

Adults with at least one major depressive episode in their lifetime (2006).....30.4 million (13.9%)[39]

Cost

Total medical expenditures for substance abuse and mental disorders (2003 est.).....$121 billion[40]

Cost-effectiveness of screening and brief counseling for problem drinking.....$0-$14,000/QALY[7]

In 2004, almost one-fourth of all stays in U.S. community hospitals for patients age 18 and over—7.6 million of nearly 32 million stays—involved mental disorders such as depression, bipolar disorder, schizophrenia, and substance use-related disorders.[41] The 12-month prevalence of anxiety disorders in the United States in 2001-2003 was 19.1%; mood disorders, 9.7%; impulse control disorder, 10.5%; and any substance disorder (including drug abuse, alcohol abuse, and nicotine dependence[viii]), 13.4%.[42]

Social and cultural factors may dramatically affect mental health. Culturally and linguistically appropriate services can decrease the prevalence, incidence, severity, and duration of certain mental disorders. However, many factors adversely affect the mental health of racial and ethnic groups, such as discrimination[ix] and racism. Some factors also present significant barriers to treatment. These include cost of care, lack of sufficient insurance for mental health services, social stigma, fragmented organization of services,[43] and mistrust.

[viii] Nicotine dependence is a physical addiction to nicotine when delivered by various tobacco products.

[ix] The Office for Civil Rights (OCR) (http://www.hhs.gov/ocr/) is the sole HHS agency with the authority to enforce Title VI of the Civil Rights Act of 1964, 42 U.S.C. 2000d, which prohibits discrimination based on race, color, or national origin in programs and activities that receive Federal financial assistance, including most health care providers and human service agencies. Individuals and advocacy groups may file complaints with OCR to remedy such discrimination.

In addition, economic factors can have a significant effect on mental health. For example, poverty can be a risk factor for poor mental health and a result of poor mental health. But low-income individuals may be more likely to receive needed substance abuse treatment due to linkages in service delivery between substance abuse and public assistance services in many States.

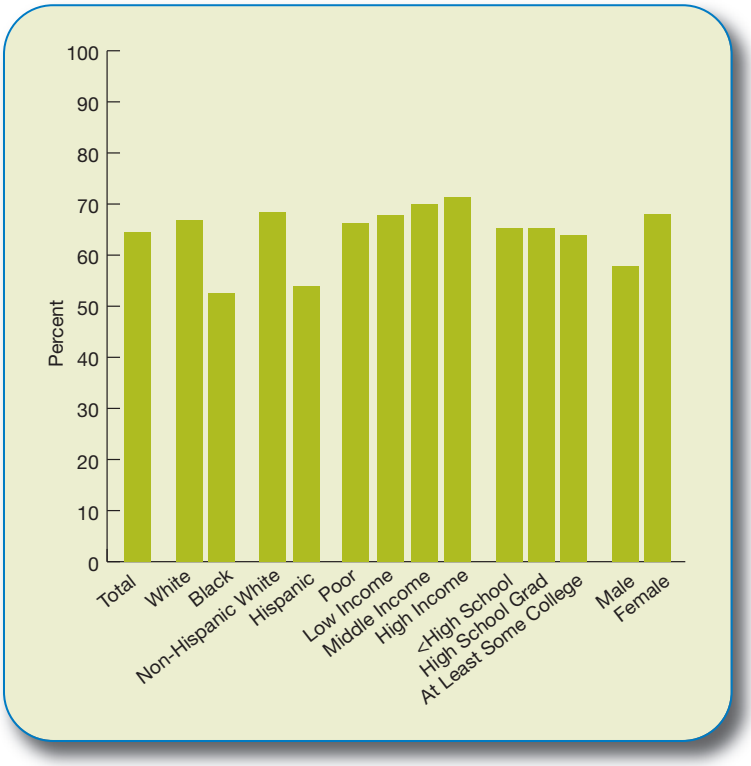
In rural and remote areas, many people with mental illnesses have less adequate access to care, more limited availability of skilled care providers, lower family incomes, and greater societal stigma for seeking mental health treatment than their urban counterparts. In addition, rural Americans are less likely to have private health insurance benefits for mental health care. Lack of coverage often occurs because small employers and individual purchasers dominate the rural health insurance marketplace. Therefore, insurance policies are more likely to have limited or no mental health coverage.

For racial and ethnic populations in rural areas, these problems are compounded by the lack of culturally and linguistically competent providers. Finally, of the 1,669 federally designated mental health professional shortage areas, more than 85% are rural areas.[44] As of September 2009, the number of federally designated mental health professional shortage areas had increased to an estimated 3,291.[45]

Treatment: Receipt of Treatment for Depression

Treatment for depression is an effective way to reduce the chances of future major depressive episodes.

Figure 2.18. Adults with a major depressive episode in the last 12 months who received treatment for depression in the last 12 months, by race, ethnicity, income, education, and gender, 2007



Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2007.
Denominator: U.S. population age 18 and over who had a major depressive episode in the last 12 months.
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 of depression described in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV). Treatment for depression is defined as seeing or talking to a medical doctor or other professional or using prescription medication in the past year for depression. Data were insufficient for this analysis for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

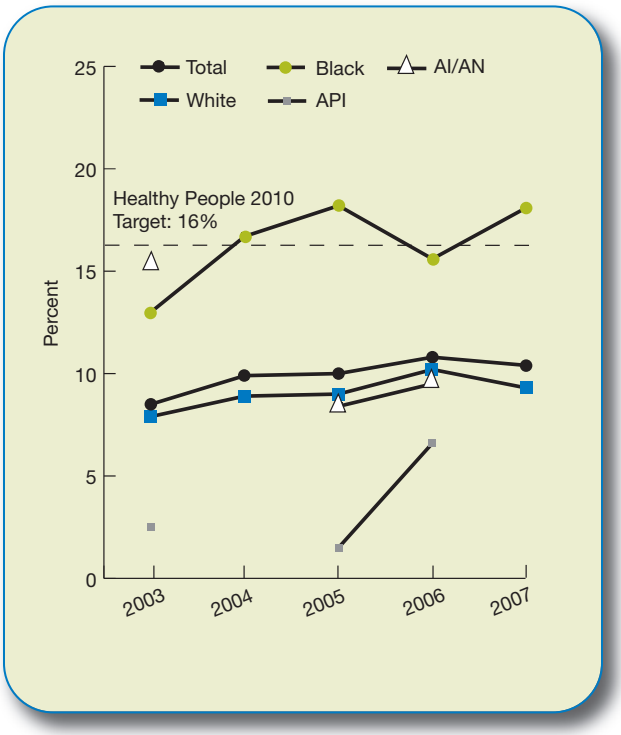
- The percentage of adults with a major depressive episode in the last 12 months who received any treatment for depression in the last 12 months was significantly lower for Blacks than for Whites (52.6% compared with 66.8%) and lower for Hispanics than for non-Hispanic Whites (53.9% compared with 68.5%; Figure 2.18).
- In 2007, adult females with a major depressive episode were more likely than their male counterparts to have any treatment for depression in the last 12 months (68.0% compared with 57.8%).
- There were no statistically significant differences by income level or education level for this measure.

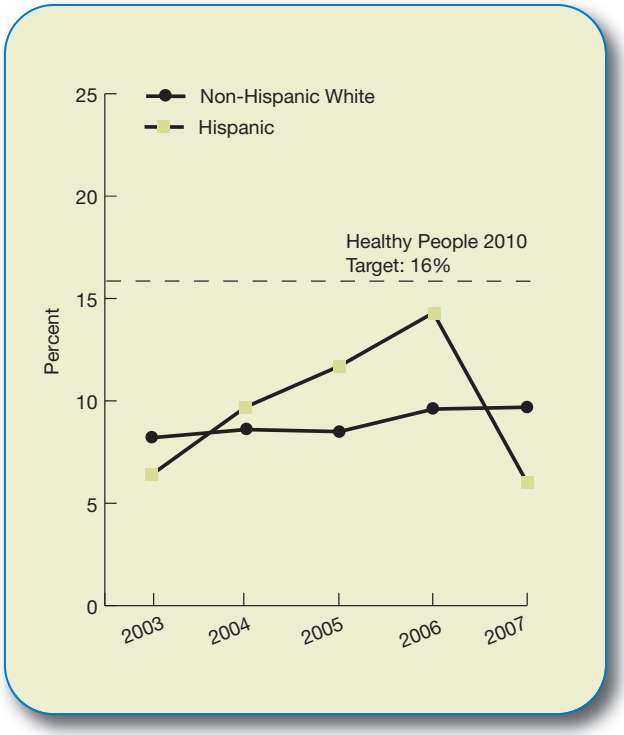
Treatment: Receipt of Needed Treatment for Illicit Drug Use or Alcohol Problem

Illicit drug[x] use is a medical problem that can have a direct toxic effect on a number of bodily organs. Illicit drug use also can exacerbate numerous health and mental health conditions. Alcohol problems can lead to serious health risks. Heavy drinking can increase the risk of certain cancers and cause damage to the liver, brain, and other organs.[46] It also can cause birth defects. Alcoholism increases the risk of death from car crashes and other injuries.[47] Treatment for illicit drug use or an alcohol problem at a specialty facility is an effective way to reduce the chances of future illicit drug use or alcohol problems.

[x] Illicit drugs included in this measure are marijuana/hashish, cocaine (including crack), inhalants (e.g., inhalation of various substances other than for intended use – like toluene), hallucinogens, heroin, and prescription-type psychotherapeutic drugs (nonmedical use).

Figure 2.19. People age 12 and over who needed treatment for illicit drug use or an alcohol problem and who received such treatment at a specialty facility in the last 12 months, by race and ethnicity, 2003-2007





Key: AI/AN = American Indian or Alaska Native; API = Asian or Pacific Islander.
Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2007.
Denominator: U.S. population age 12 and over who needed treatment for illicit drug use or an alcohol problem in the last 12 months.
Note: "Received illicit drug treatment at a specialty facility" refers to treatment received at a hospital (inpatient), rehabilitation facility (inpatient or outpatient), or mental health center to reduce or stop the nonmedical use of prescription-type psychotherapeutic drugs 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 these three criteria during the last 12 months: (1) dependence on any illicit drug; (2) abuse of any illicit drug; or (3) treatment for an illicit drug problem at a specialty facility (drug and alcohol rehabilitation facilities [inpatient or outpatient], hospitals [inpatient only], and mental health centers). The 2004 and 2007 data for Asians and Pacific Islanders and American Indians and Alaska Natives were insufficient for this analysis.

- In 2007, the percentage of people age 12 and over who needed treatment for illicit drug use or an alcohol problem and received it at a specialty facility in the last 12 months continued to be significantly higher for Blacks than for Whites (18.1% compared with 9.3%; Figure 2.19).
- In 2007, the percentage of people age 12 and over who needed treatment for illicit drug use or an alcohol problem and received it at a specialty facility in the last 12 months was lower for Hispanics than for non-Hispanic Whites (6.0% compared with 9.9%).

Respiratory Diseases

Mortality

Number of deaths from chronic lower respiratory diseases[xi] (2006) ..... 124,583[4]

Cause of death rank for chronic lower respiratory diseases (2006) ..... 4th[4]

Prevalence

Adults age 18 and over with current asthma (2007) ..... 16.2 million[48]

Children under age 18 with current asthma (2007) ..... 6.7 million[49]

People under age 18 with an asthma attack in last 12 months (2007) ..... 3.8 million*

Annual number of cases of the common cold ..... >1 billion[50]

Number of discharges attributable to pneumonia (2007) ..... 1.17 million[51]

Cost

Total cost of lung diseases (2009 est.) ..... $177.4 billion[6]

Direct medical costs of lung diseases (2009 est.) ..... $113.6 billion[6]

Total cost of upper respiratory infections (annual est.) ..... $40 billion[52]

Total cost of asthma (2007 est.) ..... $19.7 billion[53]

Direct medical costs of asthma (2007 est.) ..... $14.7 billion[53]

Cost-effectiveness of influenza immunization ..... $0-$14,000/QALY[7]

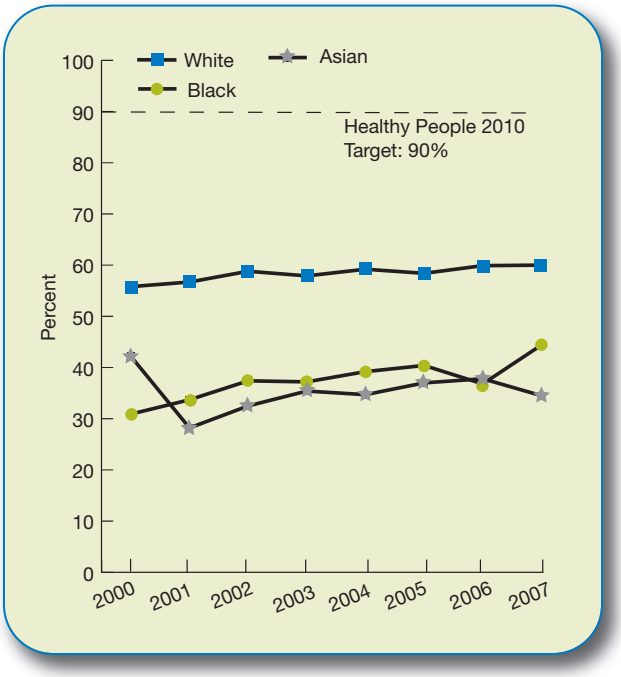
Prevention: Pneumococcal Vaccination

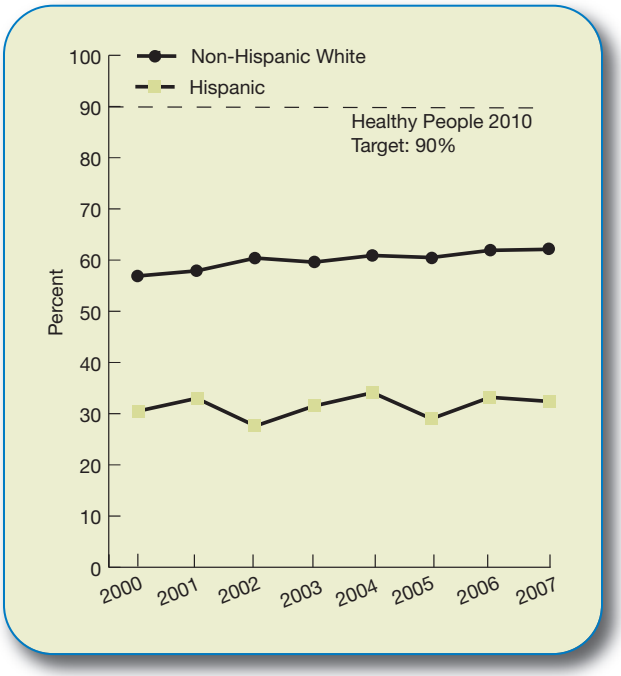
Vaccination is an effective strategy for reducing illness, death, and disparities associated with pneumococcal disease and influenza.[54, 55]

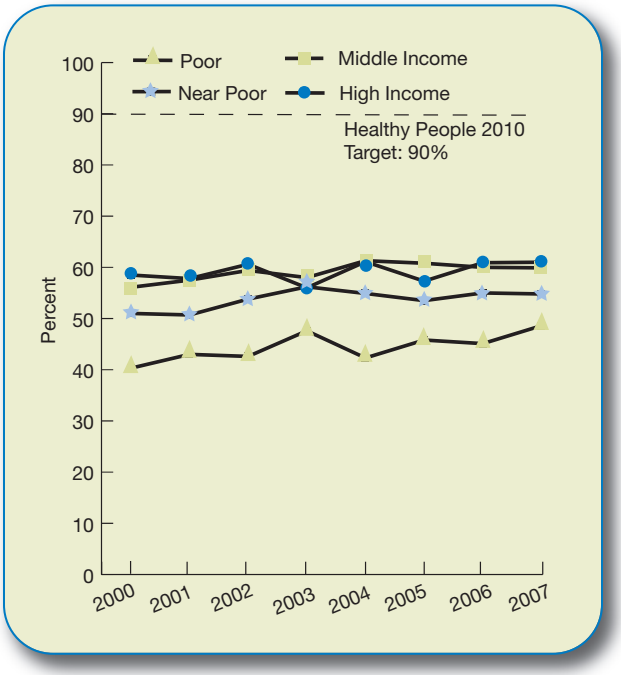
[xi] Chronic lower respiratory diseases include emphysema and chronic bronchitis.

* For information on trends in asthma attacks among children, refer to Akinbami LJ, Moorman JE, Garbe PL, et al. Status of childhood asthma in the United States, 1980-2007. Pediatrics 2009;123:S131-S145.

Figure 2.20. Adults age 65 and over who ever received pneumococcal vaccination, by race, ethnicity, and income, 2000-2007







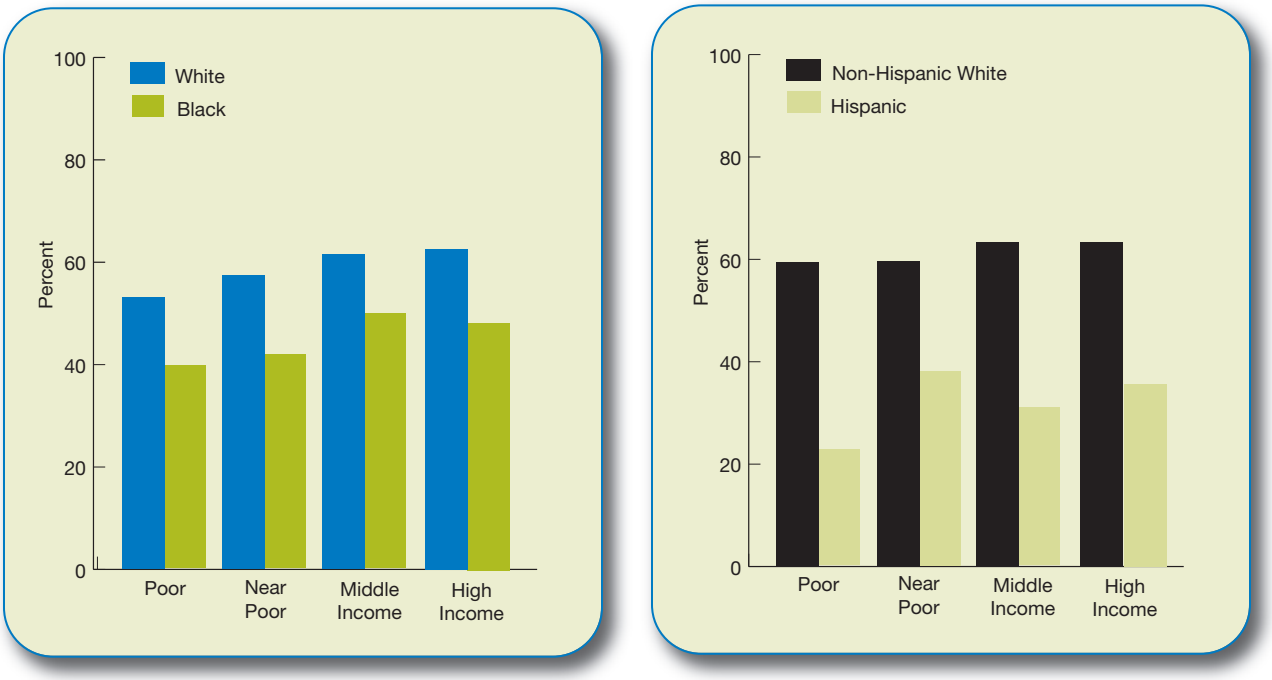
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2000-2007.
Denominator: Civilian noninstitutionalized population age 65 and over.
Note: Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders (NHOPIs) and for American Indians and Alaska Natives.

- From 2000 to 2007, the overall percentage of adults age 65 and over who ever received pneumococcal vaccination improved from 53.4% to 57.8% (data not shown). Improvements were observed for all groups except for Asians, which decreased from 42.2% to 34.5% (Figure 2.20).

- In 2007, the percentage of adults age 65 and over who ever had pneumococcal vaccination was significantly lower for Blacks than for Whites (44.4% compared with 60.0%). For Asians, the percentage of adults age 65 and over who ever had pneumococcal vaccination was significantly lower, at almost half the percentage for Whites (34.5% compared with 60.0% for Whites).
- In 2007, the percentage of Hispanic adults age 65 and over who ever had pneumococcal vaccination continued to be significantly lower, at about half that of non-Hispanic Whites (32.4% compared with 62.1%).
- In 2007, the percentage was significantly lower for poor older adults than for high-income older adults (48.6% compared with 61.0%).
- In 2007, none of the groups 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 income and education. To distinguish the effects of race, ethnicity, income, and education on pneumococcal vaccination, this measure is stratified by income and education level.

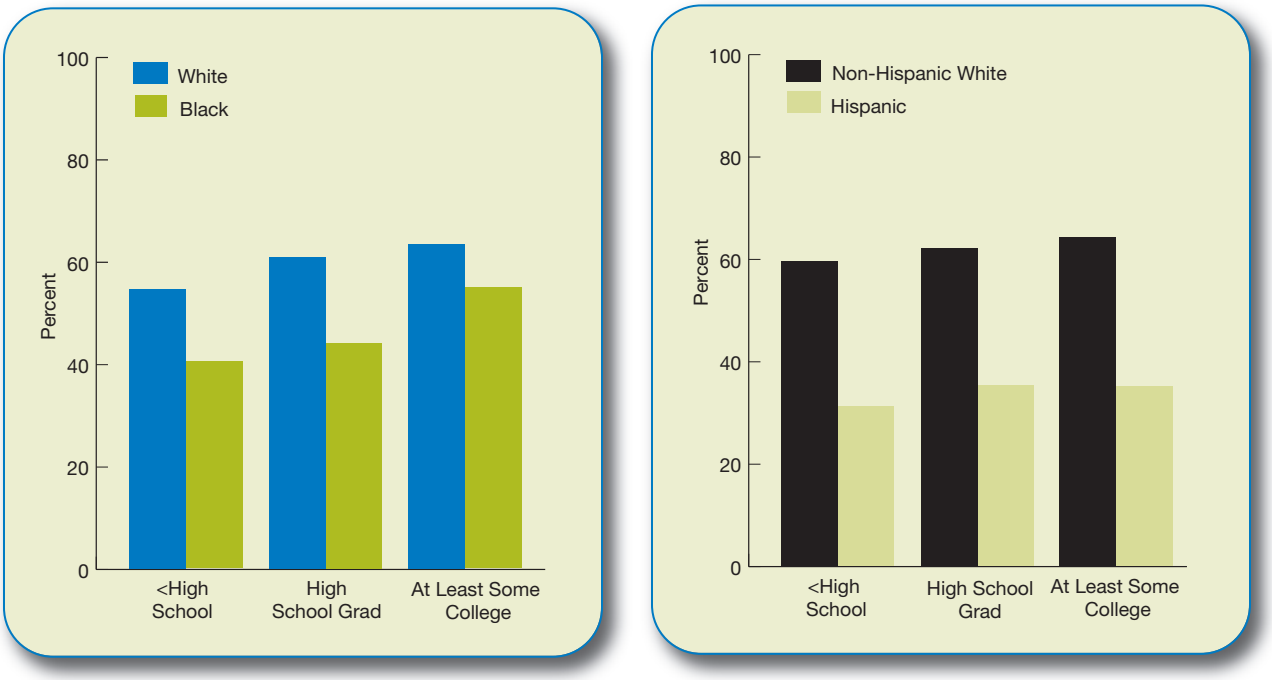
Figure 2.21. Adults age 65 and over who ever received pneumococcal vaccination, by race and ethnicity, stratified by income, 2007



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2007.
Denominator: Civilian noninstitutionalized population age 65 and over.
Note: Age adjusted to the 2000 U.S. standard population. Data were insufficient for this analysis for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

- At all income levels, Blacks were less likely than Whites to ever have had a pneumococcal vaccination (Figure 2.21).
- At all income levels, Hispanics were less likely than non-Hispanic Whites to ever have had a pneumococcal vaccination. Among poor and middle-income older adults, Hispanics were both less than half as likely as non-Hispanic Whites to receive this preventive care.

Figure 2.22. Adults age 65 and over who ever received pneumococcal vaccination, by race and ethnicity, stratified by education, 2007



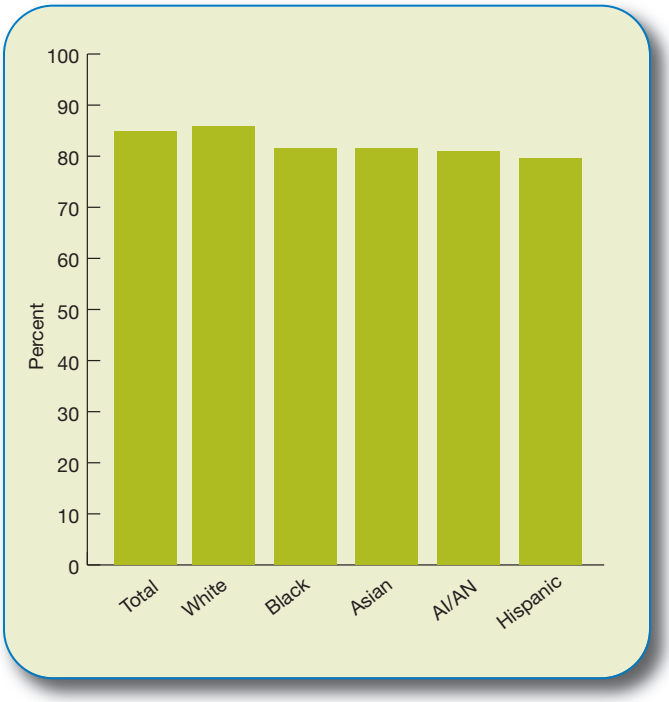
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2007.
Denominator: Civilian noninstitutionalized population age 65 and over.
Note: Age adjusted to the 2000 U.S. standard population. Data were insufficient for this analysis for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

- With the exception of Blacks with at least some college education, Blacks and Hispanics at all education levels were significantly less likely than Whites to ever have had a pneumococcal vaccination (Figure 2.22).

Treatment: Receipt of Recommended Care for Pneumonia

Older adults are at high risk for pneumonia. The highest rate of hospitalizations for pneumonia occurs in the population age 65 and over—220.4 per 10,000 population for this group in 2004, compared with 45.5 per 10,000 for the overall population.[56] The Centers for Medicare & Medicaid Services (CMS) tracks a set of measures for quality of pneumonia care for hospitalized patients from the CMS Quality Improvement Organization (QIO) Program. This set of measures has been adopted by the Hospital Quality Alliance (HQA). The NHDR shows a composite measure of recommended hospital care that includes five separate measures (listed in the note for Figure 2.23). For further details on composite measures, refer to Chapter 1, Introduction and Methods.

Figure 2.23. Composite measure: Medicare hospital patients with pneumonia who received recommended hospital care, by race/ethnicity, 2007



Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Medicare & Medicaid Services, Quality Improvement Organization Program, 2007.
Denominator: Patients with pneumonia who are hospitalized, all ages.
Note: In 2007, the measure of initial antibiotic dose changed from within 4 hours to within 6 hours of hospital arrival. Whites, Blacks, Asians, and AI/ANs are non-Hispanic groups. Composite includes the following five measures: (1) receipt of antibiotics within 6 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, refer to Chapter 1, Introduction and Methods. The denominator used to calculate these measures was refined in 2005 to exclude patients with health care-associated pneumonia. The percentage of Medicare beneficiaries with blood cultures within 24 hours of hospital arrival was changed to include in the denominator only patients who were admitted to the intensive care unit within 24 hours of hospital arrival.

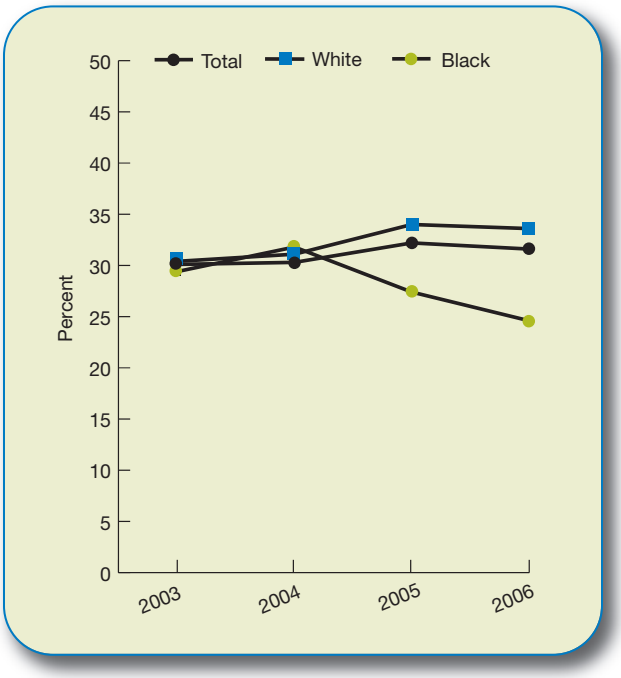
- In 2007, the percentage of patients with pneumonia who received recommended hospital care was significantly lower for Blacks (81.5%), Asians (81.6%), American Indians and Alaska Natives (80.9%), and Hispanics (79.6%) compared with Whites (85.9%).

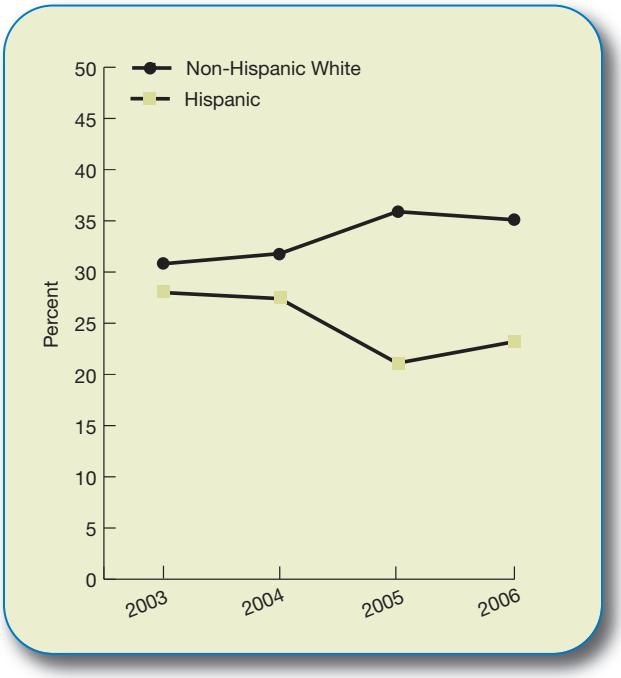
Management: Daily Asthma Medication

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, coordinated by the National Heart, Lung, and Blood Institute, develops and disseminates science-based guidelines for the diagnosis and management of asthma.[57] These recommendations are built around four essential components of asthma management critical for effective long-term control of asthma: assessment and monitoring, control of factors contributing to symptom exacerbation, pharmacotherapy, and education for partnership in care.[58]

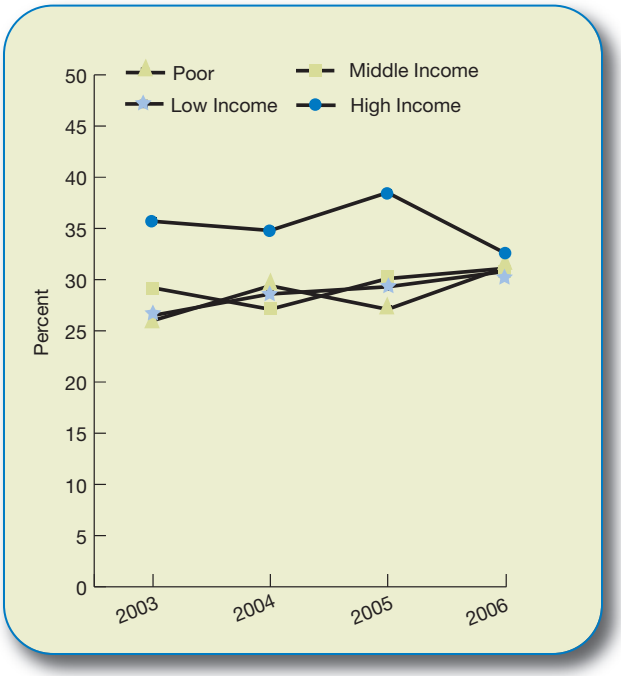
Daily long-term controller medication is necessary to prevent exacerbations and chronic symptoms for all patients with persistent asthma. Appropriate controller medications for people with mild persistent asthma[59, xii] include inhaled corticosteroids, cromolyn, nedocromil, theophylline, and leukotriene modifiers.[60]

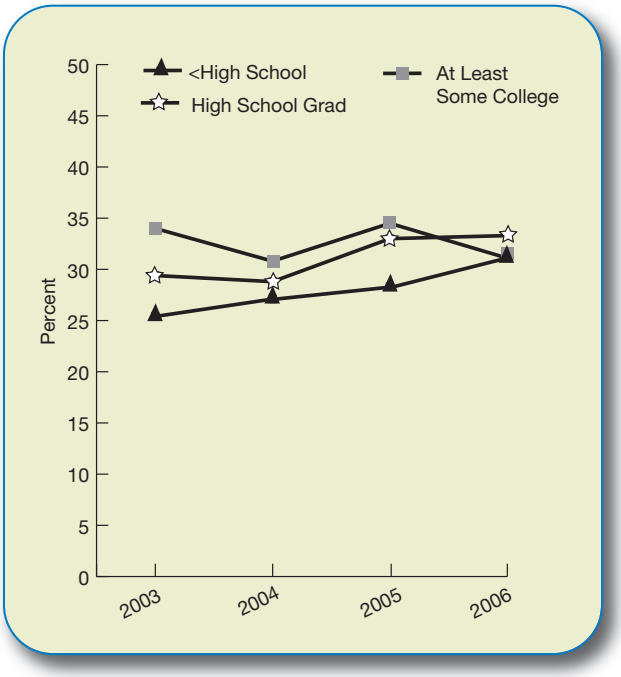
Figure 2.24. People with current asthma who are now taking preventive medicine daily or almost daily (either oral or inhaler), by race, ethnicity, income, and education, 2003-2006





[xii] "Mild persistent asthma" refers to cases in which people experience asthma symptoms more than 2 days per week and more than 2 nights per month, as well as other clinical indicators.





Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2003-2006.
Denominator: Noninstitutionalized population with asthma, as defined below.
Note: People with current asthma are defined as people who report they either still have asthma or had an episode or attack in the last 12 months. Data were insufficient for this analysis for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

- From 2003 to 2006, there were no statistically significant changes over time for any group in the percentage of people with current asthma who are taking daily preventive medicine, except for non-Hispanic Whites, whose rates improved (Figure 2.24).
- From 2003 to 2006, the gap between Blacks and Whites increased. In 2006, Blacks with current asthma were less likely than Whites with current asthma to take daily preventive medicine (24.6% compared with 33.6%).
- From 2003 to 2006, the gap between Hispanics and non-Hispanic Whites increased. In 2006, Hispanics with current asthma were less likely than non-Hispanic Whites with current asthma to take daily preventive medicine (23.2% compared with 35.1%).
- From 2003 to 2006, there were no statistically significant changes overall by income or education in the percentage of people with current asthma who took daily preventive medicine.
- From 2003 to 2006, the gap between high-income people and people at other income levels closed. The differences in the percentage of people with current asthma taking daily preventive medicine are no longer statistically significant.
- From 2003 to 2006, the gap between people with less than a high school education and those with at least some college education closed. There were no statistically significant differences by education in 2006.

Lifestyle Modification

Mortality

Number of deaths per year attributable to smoking (2000-2004).....443,000[61]

Prevalence

Number of adult current cigarette smokers (2007).....43.4 million[62]

Number of obese adults (2005-2006) .....≥72 million[63]

Number of adults with no leisure-time physical activity (2007).....84.8 million[64]

Cost

Total cost of smoking (2000-2004 est.).....$193 billion[61]

Total health care cost related to obesity (2008 est.).....$147 billion[65]

Unhealthy behaviors place many Americans at risk for a variety of diseases. Helping patients choose and maintain healthy lifestyles is a critical role of health care. The NHDR tracks two measures related to healthy lifestyles, counseling about quitting smoking and counseling about healthy eating.

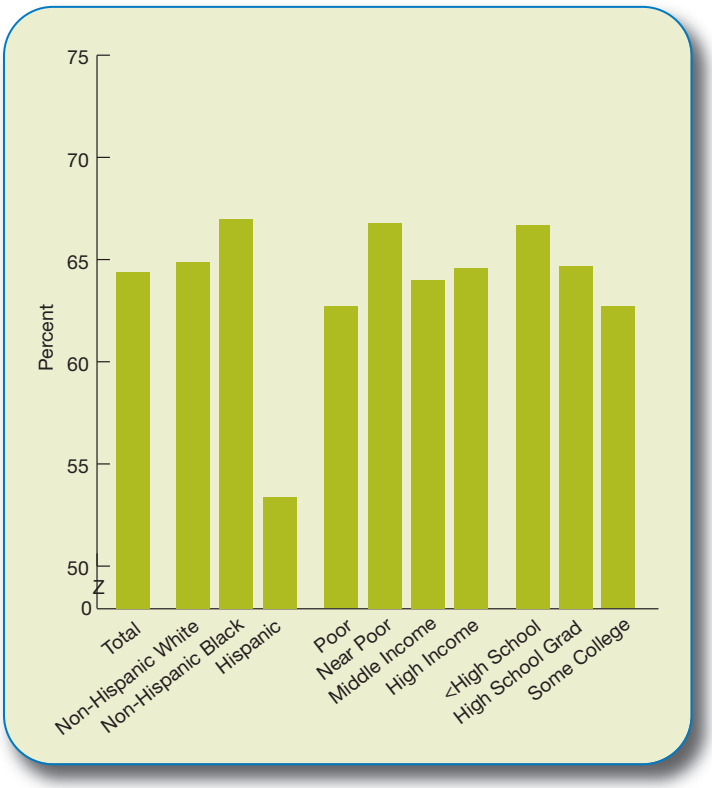
Prevention: Counseling Smokers To Quit Smoking

Smoking adversely affects health in a variety of ways and has been linked to cancer, heart disease and stroke, and respiratory diseases. Approximately 135,000 (23%) heart disease deaths in the United States for both men and women are related to smoking.[66] Cigarette smoking increases the risk of dying from coronary heart disease (CHD) two- to threefold.[66] The risk of dying from lung cancer is more than 22 times as high among men who smoke cigarettes, and the risk for a number of other cancers is also significantly increased.

Rates of cancers related to cigarette smoking vary widely among members of racial and ethnic groups but are highest among American Indian and Alaska Native adults and lowest among Asian adults.[62] In addition, 90% of all deaths from chronic obstructive pulmonary disease (COPD) are attributable to cigarette smoking. Smoking is associated with a 10-fold increase in the risk of developing COPD.

Smoking is a modifiable risk factor, and health care providers can encourage patients to quit smoking. Current evidence suggests that patients who received even brief advice from a physician to quit smoking were more likely to quit smoking than those who received no advice.[67] Among other benefits of quitting, the risk of developing CHD attributed to smoking can be decreased by 50% after one year of cessation. That is notable given the effect that CHD can have on health.[68]

Figure 2.25. Adult current smokers under age 65 with a checkup in the last 12 months who received advice from a doctor to quit smoking, by race/ethnicity, income, and education, 2006



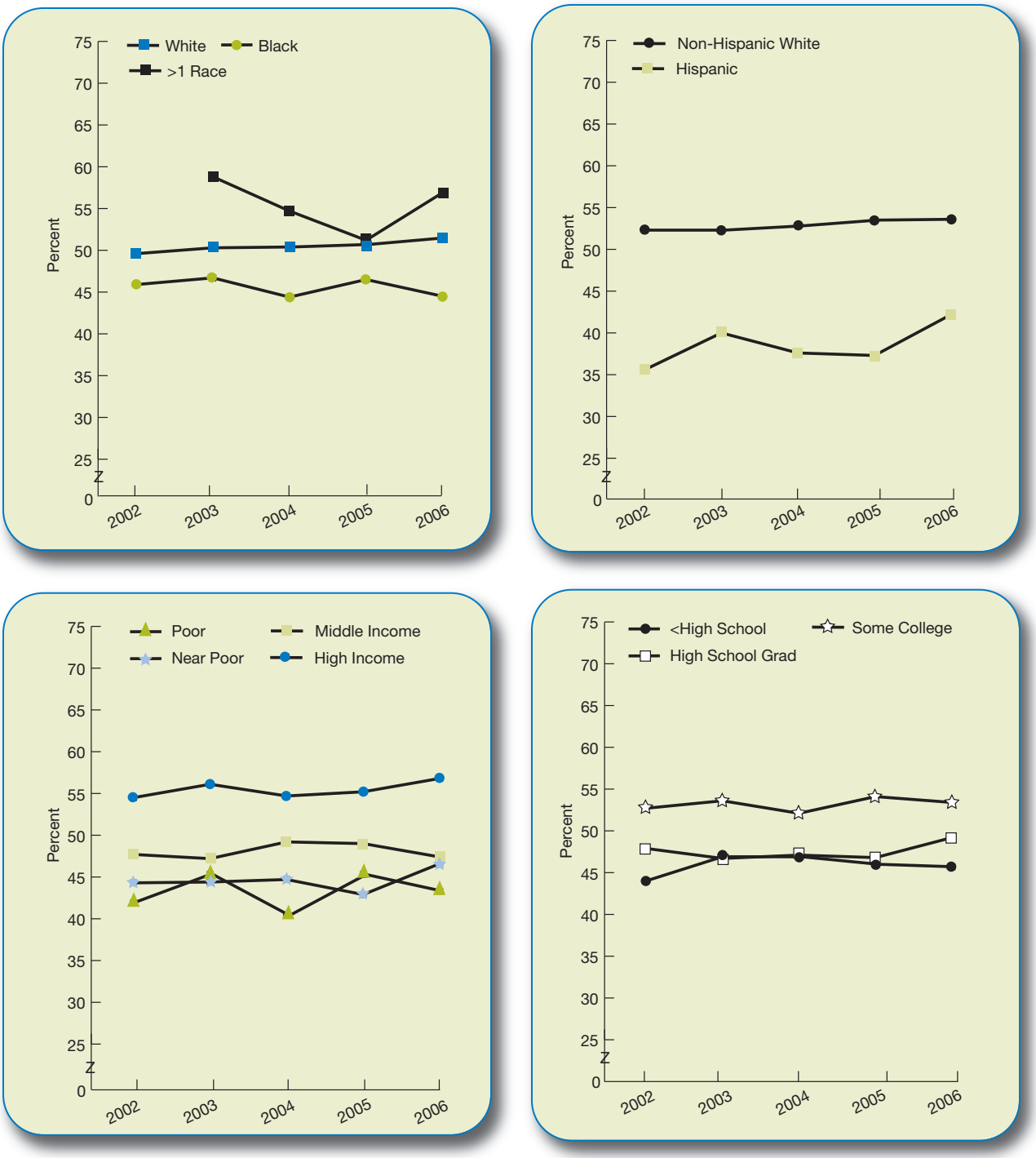
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized adult current smokers under age 65 who had a checkup in the last 12 months.

- In 2006, 64.4% of adult current smokers under age 65 with a checkup in the last 12 months received advice to quit smoking (Figure 2.25).
- From 2002 to 2006, rates of advice to quit smoking did not change overall or for any racial or ethnic group (data not shown).
- In 2006, Hispanic adults were less likely to receive advice to quit smoking compared with non-Hispanic White adults (53.4% compared with 64.9%).

Prevention: Counseling Obese Adults About Healthy Eating

Physician-based exercise and diet counseling is an important component of effective weight loss interventions,[69] and it has been shown to produce increased levels of physical activity among sedentary patients.[70] Not every obese person needs counseling about exercise and diet, but many would likely benefit from improvements in these activities. Regular exercise and a healthy diet aid in maintaining normal blood cholesterol levels, weight loss, and blood pressure control efforts, reducing the risk of heart disease, stroke, diabetes, and other comorbidities of obesity.

Figure 2.26. Adults with obesity who ever received advice from a health provider about eating fewer high-fat or high-cholesterol foods, by race, ethnicity, income, and education, 2002-2006



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2006.
Denominator: Civilian noninstitutionalized population age 18 and over.
Note: Obesity is defined as a body mass index of 30 or higher. Data were insufficient for this analysis for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives, as well as in 2002 for people of more than one race.

- From 2002 to 2006, there were no statistically significant changes in the percentage of obese adults who were given advice about eating fewer high-fat or high-cholesterol foods, with the exception of Hispanics, which increased (from 35.6% to 42.2%; Figure 2.26).
- In 2006, the percentage was significantly lower for Blacks than for Whites (44.5% compared with 51.5%) and for Hispanics compared with non-Hispanic Whites (42.2% compared with 53.6%).
- In 2006, the percentage of obese adults who received advice about eating fewer high-fat or high-cholesterol foods was significantly lower for poor, near-poor, and middle-income adults compared with high-income adults (43.3%, 46.6%, and 47.4%, respectively, compared with 56.8%).
- In 2006, the percentage of obese adults who were given advice about eating fewer high-fat or high-cholesterol foods was significantly lower for people with less than a high school education compared with people with some college education (45.7% compared with 53.4%).

Functional Status Preservation and Rehabilitation

Prevalence

Noninstitutionalized adults needing help of another person with activities of daily living (ADLs) (2007).....4.4 million[71]

Noninstitutionalized adults age 75 years and over needing help of another person with ADLs (2007).....11%[71]

Noninstitutionalized adults needing help with instrumental activities of daily living (IADLs) (2007).....8.6 million[71]

Noninstitutionalized adults age 75 years and over needing help with IADLs (2007).....20%[71]

Nursing home residents needing help with ADLs (2004).....1.5 million[72]

Cost

Medicare payments for outpatient physical therapy (2006 est.).....$3.1 billion[73]

Medicare payments for outpatient occupational therapy (2006 est.).....$747 million[73]

Medicare payments for outpatient speech-language pathology services (2006 est.).....$270 million[73]

Note: Cost estimates for nursing home and home health services include costs only for freestanding skilled nursing facilities, nursing homes, and home health agencies, not facilities that are hospital based.

A person's ability to function can decline with disease or age. Some health care interventions can help prevent diseases that commonly cause declines in functional status. Other interventions can help patients regain function that has been lost. This section highlights one measure of prevention (osteoporosis screening in women) and one measure of home health care quality (improvement in walking or moving around).

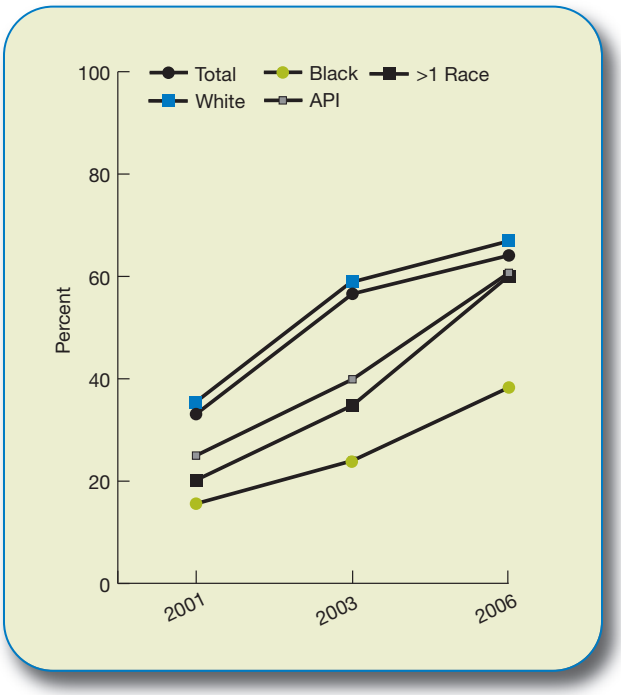
Prevention: Osteoporosis Screening in Women

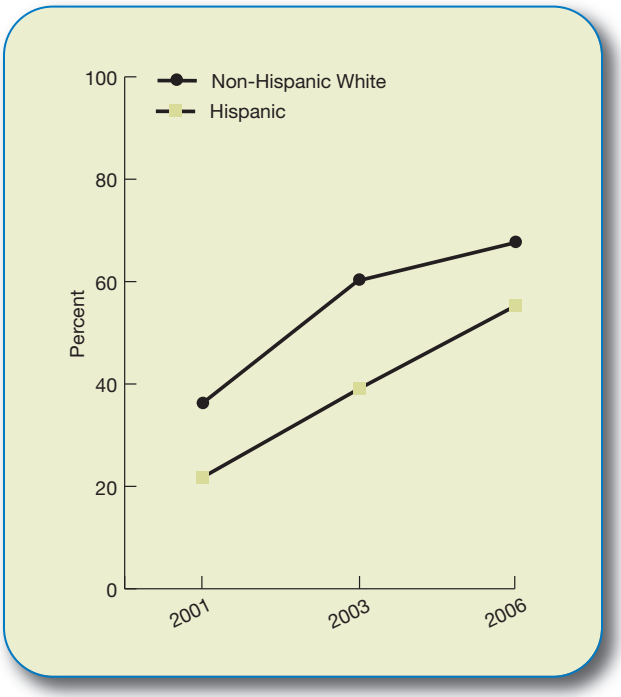
Osteoporosis is a disease characterized by loss of bone tissue. About 10 million people in the United States have osteoporosis and another 34 million with low bone mass are at risk of developing the disease.[74] Women represent two-thirds of those at risk for or diagnosed with osteoporosis.

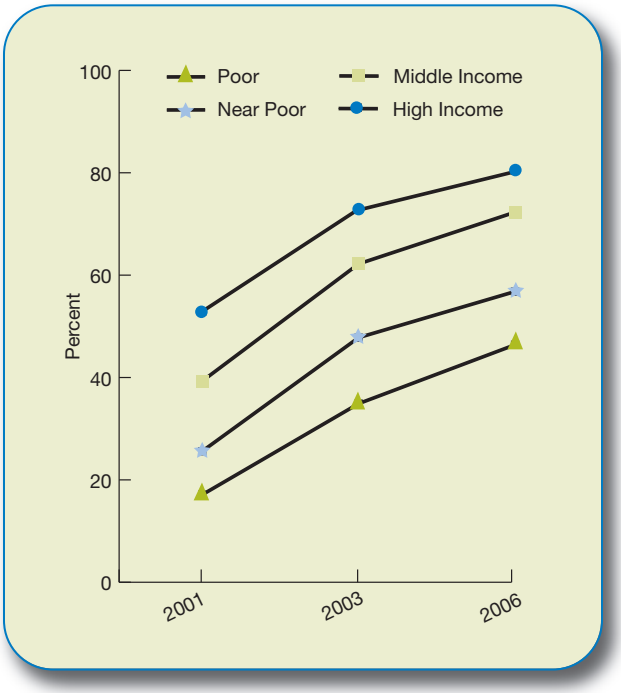
Osteoporosis increases the risk of fractures of the hip, spine, and wrist, and about half of all postmenopausal women will experience an osteoporotic fracture.[75] Osteoporotic fractures cost the U.S. health care system $17 billion each year and cause considerable morbidity and mortality. For example, of patients with hip fractures, one-fifth will die during the first year, one-third will require nursing home care, and only one-third will return to the functional status they had before the fracture.[76]

Because older women are at highest risk for osteoporosis, the U.S. Preventive Services Task Force recommends routine osteoporosis screening of women age 65 and over. Women with low bone density can reduce their risk of fracture and subsequent functional impairment by taking appropriate medications.[77]

Figure 2.27. Female Medicare beneficiaries age 65 and over who reported ever being screened for osteoporosis with a bone mass or bone density measurement, by race, ethnicity, and income, 2001, 2003, and 2006







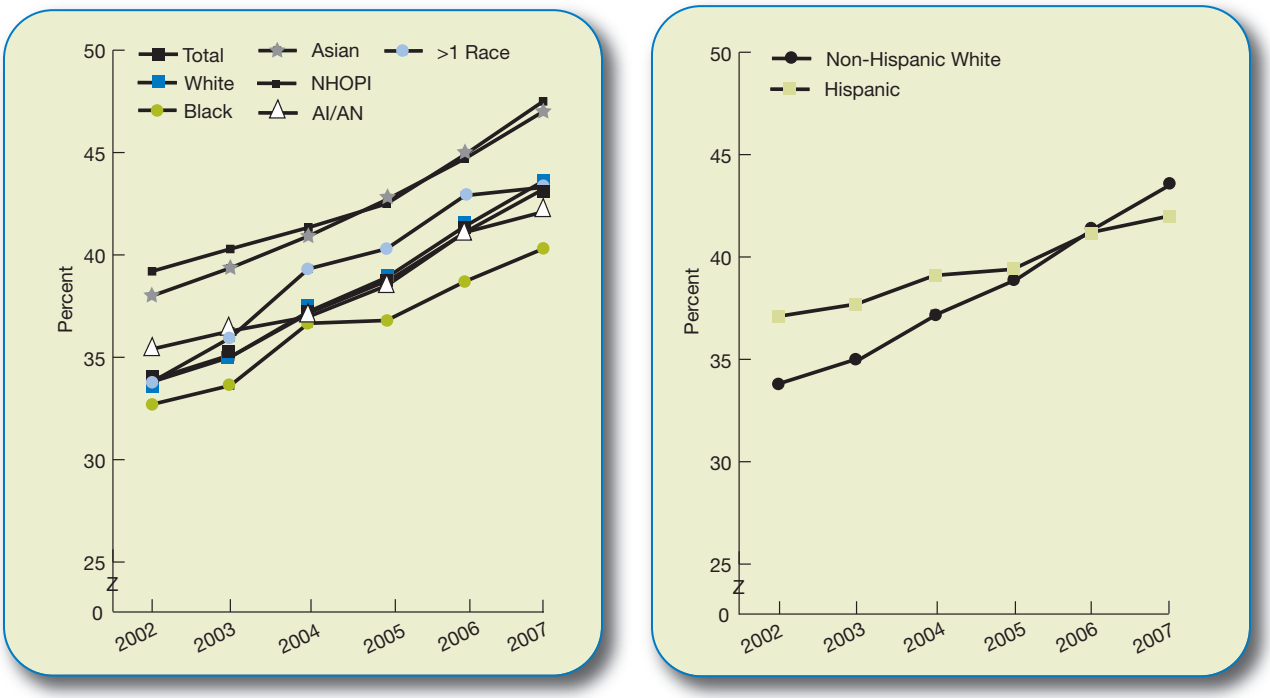
Source: Medicare Current Beneficiary Survey, 2001, 2003, and 2006.
Denominator: Female Medicare beneficiaries age 65 and over living in the community.

- From 2001 to 2006, the percentage of female Medicare beneficiaries age 65 and over who reported ever being screened for osteoporosis with a bone mass or bone density measurement increased overall and among all racial, ethnic, and income groups.
- In 2006, the percentage of female Medicare beneficiaries age 65 and over who reported ever being screened for osteoporosis was significantly lower among Blacks compared with Whites (38.3% compared with 67.1%; Figure 2.27).
- In 2006, the percentage of female Medicare beneficiaries age 65 and over who reported ever being screened for osteoporosis was significantly lower among Hispanics compared with non-Hispanic Whites (55.3% compared with 67.8%).
- In 2006, the percentage of female Medicare beneficiaries age 65 and over who reported ever being screened for osteoporosis was significantly lower for all income groups compared with the high-income group (poor, 46.4%; near poor, 56.8%; and middle income, 72.3%, compared with 80.4%).

Outcome: Improvement in Ambulation in Home Health Care Patients

How well a patient improves in ability level while getting home health care is a reflection of the provider's quality of service; patient factors, such as mobility and fear of falling; and the patient's available support system. Improved ambulation (i.e., getting better at walking or using a wheelchair) is a measure of improved outcomes.[xiii]

Figure 2.28. Adult home health care patients whose ability to walk or move around improved, by race and ethnicity, 2002-2007



Key: AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.
Source: Centers for Medicare & Medicaid Services, Outcome and Assessment Information Set (OASIS), 2002-2007.
Denominator: Episodes for adult nonmaternity patients receiving at least some skilled home health care.
Note: An episode is a 60-day period 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 is transferred to an inpatient facility. Some patients have multiple episodes in a year. Data are reported only for those patients who were not already performing at the highest level of ambulation.

[xiii] In cases of patients with some neurologic conditions, such as progressive multiple sclerosis or Parkinson's disease, ambulation may not improve even when the home health service provides good care.

- From 2002 to 2007, the percentage of home health care patients who got better at walking or moving around improved for the total population (from 33.9% to 43.3%), as well as for each racial and ethnic group.
- In 2007, Blacks and AI/ANs were less likely than Whites to get better at walking or moving around (40.3% for Blacks and 42.1% for AI/ANs compared with 43.6% for Whites; Figure 2.28). Asians and NHOPIs were more likely than Whites to get better at walking or moving around (47% for Asians and 47.5% for NHOPIs compared with 43.6% for Whites).
- In 2007, the rate of Hispanic home health patients who got better at walking or moving around was lower than for non-Hispanic White patients (42.0% compared with 43.6%).

Supportive and Palliative Care

Prevalence

Number of nursing home residents ever admitted during the calendar year (2007).....3,196,310[78]

Number of fee-for-service (FFS) home health patients (2006) .....3,031,814[79]

Number of Medicare FFS beneficiaries using Medicare hospice services (2006).....935,565[80]

Cost

Total costs of nursing home care (2007 est.).....$131.3 billon[81]

Total costs of home health care (2007 est.).....$59 billion[81]

Medicare FFS payments for hospice services (2008 est.) .....$11.2 billion[82]

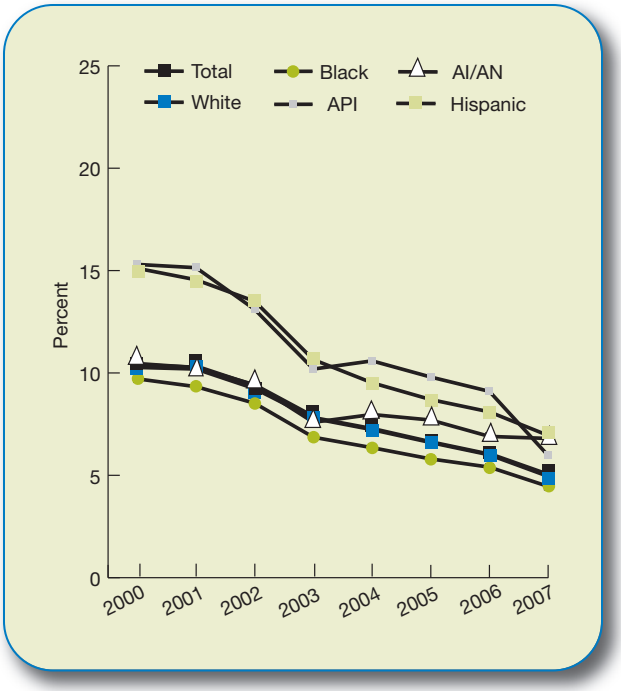
Note: Cost estimates for nursing home and home health services include costs only for freestanding skilled nursing facilities, nursing homes, and home health agencies, not facilities that are hospital based.

This section highlights two core measures of nursing home quality of care: use of physical restraints and presence of pressure sores. It also includes one measure of home health care quality: episodes with acute care hospitalization. In addition, this section includes supplemental measures on referral to hospice at the right time and management of pain in hospice care.

Management: Use of Physical Restraints on Nursing Home Residents

Although 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 medical treatment.

Figure 2.29. Long-stay nursing home residents with physical restraints, by race/ethnicity, 2000-2007



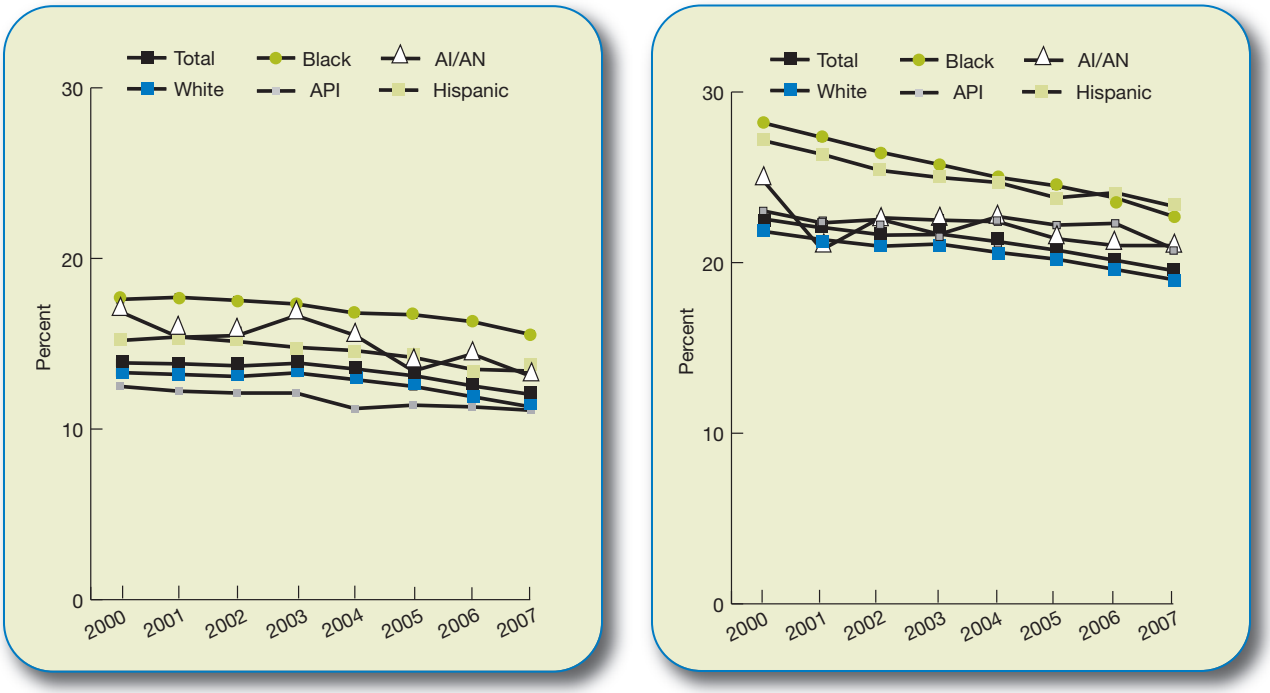
Key: AI/AN = American Indian or Alaska Native; API = Asian or Pacific Islander.
Source: Centers for Medicare & Medicaid Services, Minimum Data Set, 2000-2007. Data are from the third quarter of each calendar year.
Denominator: Long-stay nursing home residents, all ages.
Note: White, Black, API, and AI/AN are non-Hispanic groups. Long-stay residents are people in an extended/permanent nursing home stay.

- From 2000 to 2007, the percentage of long-stay nursing home residents who were physically restrained decreased from 10.4% to 5.0% (Figure 2.29).
- From 2000 to 2007, the gap between APIs and Whites in the percentage of residents who were physically restrained decreased. However, in 2007, the percentage of residents who were physically restrained was still higher for APIs than for Whites (6.0% compared with 5.0%).
- From 2000 to 2007, the gap between Hispanics and Whites decreased. However, in 2007, the percentage of residents who were physically restrained was still higher for Hispanics than for Whites (7.0% compared with 5.0%).

Outcome: Pressure Sores in 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 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. Other interventions include 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 2.30. High-risk long-stay nursing home residents (left) and short-stay residents (right) with pressure sores, by race/ethnicity, 2000-2007



Key: AI/AN = American Indian or Alaska Native; API = Asian or Pacific Islander.
Source: Centers for Medicare & Medicaid Services, Minimum Data Set, 2000-2007. 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 and short-stay nursing home residents.
Note: White, Black, API, and AI/AN are non-Hispanic groups. Long-stay residents are people in an extended/permanent nursing home stay. Short-stay residents are people who need skilled nursing care or rehabilitation services following a hospital stay but are expected to return home.

High-risk long-stay nursing home residents

- From 2000 to 2007, the percentage of high-risk[xiv] long-stay residents who developed pressure sores decreased from 13.9% to 12.0% (Figure 2.30). Improvements were observed for all groups.

[xiv] "High-risk" residents are those who are in a coma, who do not get or absorb the nutrients they need to maintain skin health, 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 2007, the percentage of high-risk long-stay residents who developed pressure sores was significantly higher for Blacks (15.5%), AI/ANs (13.1%), and Hispanics (13.4%) than for Whites (11.3%).
- In 2007, the percentage of high-risk long-stay residents who developed pressure sores was significantly higher for males than for females (14.8% compared with 11.0%; data not shown).

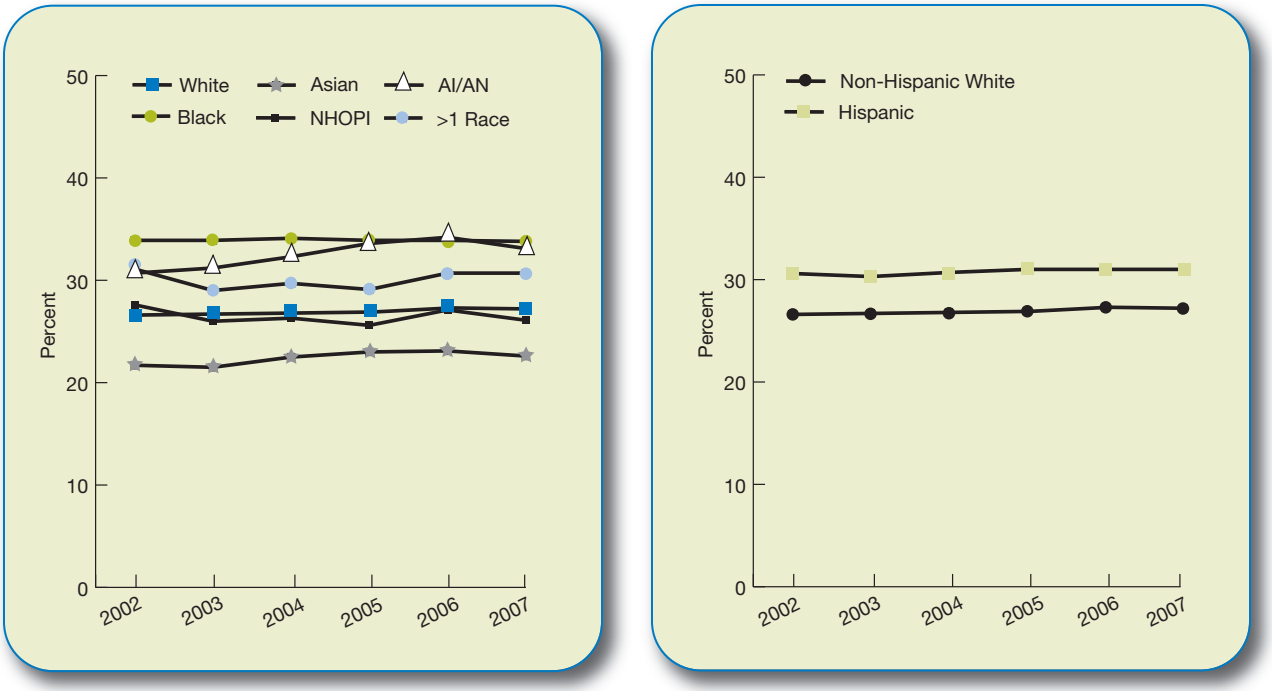
Short-stay nursing home residents

- From 2000 to 2007, the percentage of short-stay residents who had pressure sores decreased significantly for all groups (Figure 2.30).
- In 2007, Black (22.7%), API (20.8%), and AI/AN (21.0%) short-stay residents were still more likely than Whites (19.0%) to have pressure sores.
- In 2007, Hispanic short-stay residents were still more likely than Whites to have pressure sores (23.3% compared with 19.0%).
- In 2007, the percentage of short-stay residents who had pressure sores was higher for males than for females (21.8% compared with 18.3%; data not shown).

Outcome: Acute Care Hospitalization of Home Health Care 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 desirable. Acute care hospitalization may be avoided if home health staff adequately check the patient's health condition at each visit to detect problems early. However, patients may need to enter the hospital while they are getting home health care. In some cases, this may not be avoidable even with good home health care.

Figure 2.31. Adult home health care patients who were admitted to the hospital, by race and ethnicity, 2002-2007



Key: AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.
Source: Centers for Medicare & Medicaid Services, Outcome and Assessment Information Set, 2002-2007.
Denominator: Episodes for adult nonmaternity patients receiving at least some skilled home health care.
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 is transferred to an inpatient facility. Some patients have multiple episodes in a year.

- In 2007, the percentage of home health care patients admitted to the hospital was higher for Blacks than for Whites (33.8% compared with 27.2%; Figure 2.31).
- The gap increased between AI/ANs and Whites in the percentage of home health care patients who were admitted to the hospital. In 2007, the percentage was higher for AI/ANs than for Whites (33.1% compared with 27.2%).
- In 2007, the percentage was lower for Asians than for Whites (22.6% compared with 27.2%).
- In 2007, the percentage was higher for Hispanics than for non-Hispanic Whites (31.0% compared with 27.2%).

Management: Referral to Hospice Care at the Right Time

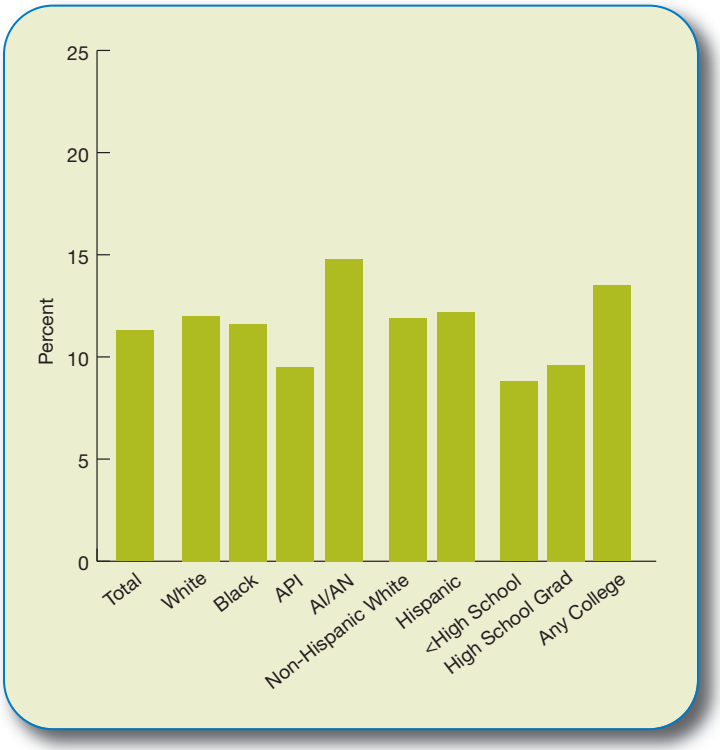
Hospice care is generally delivered at the end of life to patients with a terminal illness or condition who desire palliative medical care; it also includes psychosocial and spiritual support for the patient and family. The goal of end-of-life care is to achieve a "good death," defined by the Institute of Medicine (IOM) as one that is "free from avoidable distress and suffering for patients, families, and caregivers; in general accord with the patients' and families' wishes; and reasonably consistent with clinical, cultural, and ethical standards."[83]

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.[xv] 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.[84]

Research suggests that late referral to hospice results in unmet needs for some patients and caregivers.[85] Therefore, the perception of timeliness of referral is an indicator of adequacy of access to hospice care.

[xv] This annual survey provides unique insight into end-of-life care and captures information about a large percentage of hospice patients but is limited by nonrandom 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.

Figure 2.32. Hospice patient caregivers who perceived patient was NOT referred to hospice at the right time, by race, ethnicity, and education, 2008



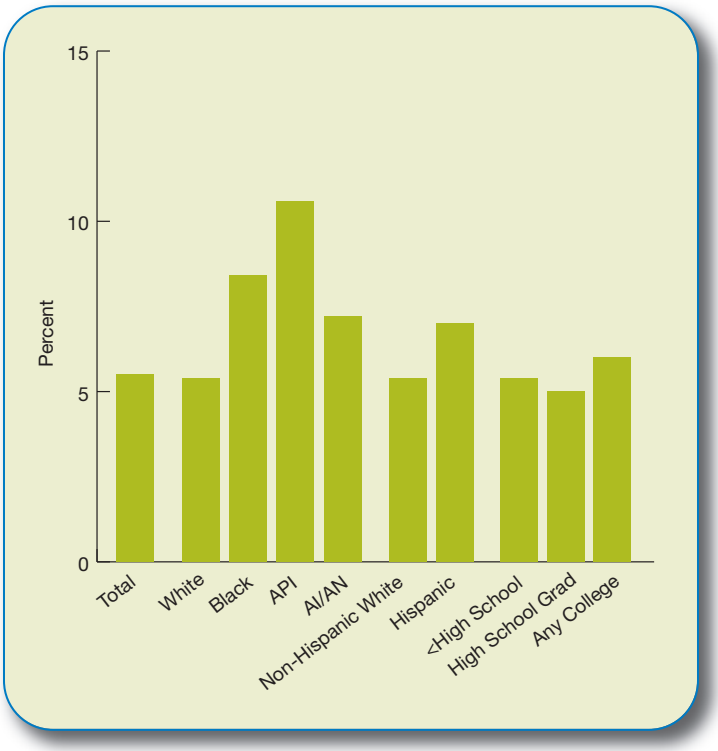
Key: AI/AN = American Indian or Alaska Native; API = Asian or Pacific Islander.
Source: National Hospice and Palliative Care Organization, Family Evaluation of Hospice Care, 2008.
Denominator: Adult hospice patients.
Note: Caregivers were family members who interacted with hospice providers.

- Overall in 2008, 11.3% of hospice patient caregivers perceived hospice patients were not referred to hospice care at the right time (Figure 2.32).
- The percentage of caregivers who perceived hospice care was not referred at the right time was lower for Blacks than for Whites (11.6% compared with 12.0%).
- The percentage of caregivers who perceived hospice care was not referred at the right time was higher for AI/ANs than for Whites (14.8% compared with 12.0%).
- The percentage of caregivers who perceived hospice care was not referred at the right time was lower for caregivers with less than a high school education (8.8%) and high school graduates (9.6%) than for caregivers with any college education (13.5%).
- The percentage of caregivers who perceived hospice care was not referred at the right time was higher for females than for males (12.9% compared with 9.6%; data not shown).

Management: Receipt of Right Amount of Pain Medicine by Hospice Patients

Addressing the comfort aspects of care, such as relief from pain, fatigue, and nausea, is an important component of hospice care.[xvi]

Figure 2.33. Hospice patients who did NOT receive the right amount of medicine for pain, by race, ethnicity, and education, 2008



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, 2008.
Denominator: Adult hospice patients.

- In 2008, the percentage of hospice patients whose families reported that they did not receive the right amount of medicine for pain was 5.5% (Figure 2.33).
- The percentage of hospice patients whose families reported that they did not receive the right amount of medicine for pain was significantly higher for Blacks (8.4%) and APIs (10.6%) than for Whites (5.4%).
- The percentage of hospice patients whose families reported that they did not receive the right amount of medicine for pain was also higher for Hispanics than for non-Hispanic Whites (7.0% compared with 5.4%).

[xvi] This measure is based on responses from a family member of the deceased patient. 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.

Patient Safety

Mortality

Number of Americans who die each year from medical errors (1999 est.) .....44,000-98,000[86]

Number of Americans who die in the hospital each year due to one of 18 types of medical injuries (2000 est.).....at least 32,000[87]

Prevalence

Rate of adverse drug reactions during hospital admissions.....2.0%-6.7%[88-91]

Rate of adverse drug events among Medicare beneficiaries in ambulatory settings .....50 per 1,000 person-years*

Cost

Cost (in lost income, disability, and health care costs) attributable to medical errors (1999 est.).....$17 billion-$29 billion[86]

Groups with higher rates of some adverse safety events.....racial minorities[92, 93]

In 1999, the IOM published *To Err Is Human*, which called for a national effort to reduce medical errors and increase patient safety.[86] The IOM defines patient safety as freedom from accidental injury due to medical care or medical errors.[86] In response to the IOM's report on patient safety, President Bush signed the Patient Safety and Quality Improvement Act of 2005 (Patient Safety Act). The act was designed to spur the development of voluntary, provider-driven initiatives to improve the quality, safety, and outcomes of patient care. The Patient Safety Act addresses many of the current barriers to improving patient care.

Several factors limit our current ability to aggregate data in sufficient numbers to rapidly identify the most prevalent risks and hazards in the delivery of patient care, their underlying causes, and the practices that are most effective in mitigating them. These include the reluctance of providers to participate in improvement initiatives, based on fear of increased liability; and difficulty in aggregating and sharing data confidentially across facilities or State lines.

To Err Is Human does not mention race or ethnicity when discussing the problem of patient safety. A 2006 review of the literature found that only 9 of 323 articles on pediatric patient safety (2.8%) included race or ethnicity in the analysis. Five of the nine studies from this review used data from the Agency for Healthcare Research and Quality's Healthcare Cost and Utilization Project (HCUP).[94]

This section highlights five measures of patient safety in three areas:

- Health care-associated infections (HAIs).
- Other complications of hospital care.
- Complications of medications.

For findings related to all core measures of patient safety, refer to Table 2.2a.

* For a discussion, refer to Gurwitz JH, Field TS, Harrold LR, et al. Incidence and preventability of adverse drug events among older persons in the ambulatory setting. JAMA 2003 Mar 5; 289:1107-16.

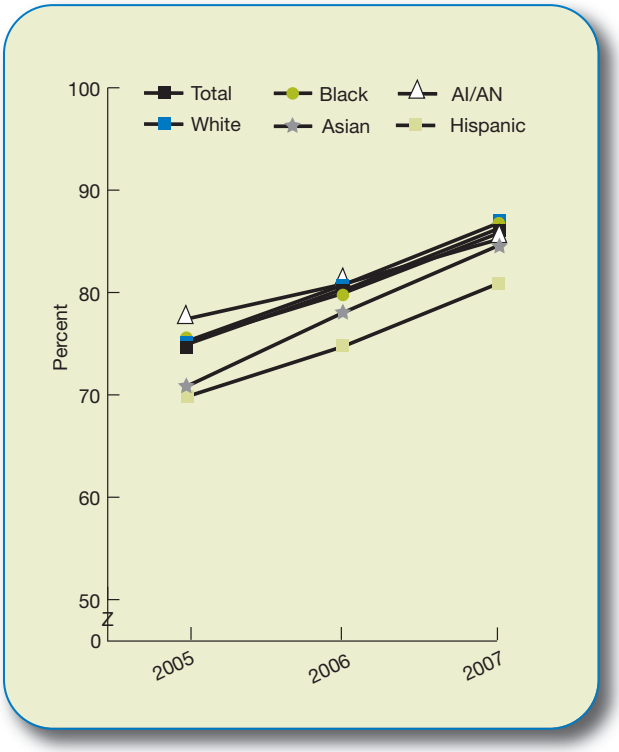
Health Care-Associated Infections

Postoperative Wound Infections

Infections acquired during hospital stays (health care-associated or nosocomial infections) are among the most serious safety concerns. A common HAI 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. 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 stomachaches, serious types of diarrhea, and antibiotic resistance.

Among adult hospital patients having surgery, the NHDR tracks an opportunities model composite of two measures: receipt of antibiotics within 1 hour prior to surgical incision and discontinuation of antibiotics within 24 hours after the end of surgery.

Figure 2.34. Composite measure: Adult surgery patients who received appropriate timing of antibiotics, by race/ethnicity, 2005-2007



Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Medicare & Medicaid Services, Medicare Quality Improvement Organization Program, 2005-2007.
Denominator: Medicare patients age 18 and over having surgery.
Note: Whites, Blacks, Asians, and AI/ANs are non-Hispanic groups. Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders. Appropriate timing of antibiotics received by adult surgical patients for all payers included in this composite are: (1) antibiotics started within 1 hour of surgery, and (2) antibiotics stopped within 24 hours after surgery.

- From 2005 to 2007, the percentage of appropriately timed antibiotics provided to surgery patients improved substantially for the overall population as well as for each racial and ethnic group.
- In 2007, the percentage of appropriately timed antibiotics provided to surgery patients was significantly lower for Blacks (85.8%), Asians (84.6%), AI/ANs (85.2%), and Hispanics (80.9%) than for Whites (86.8%; Figure 2.34).

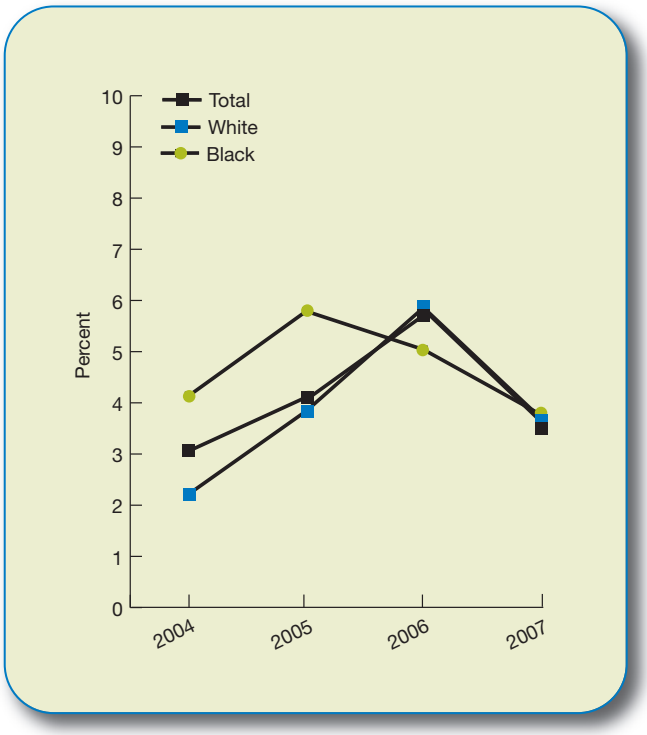
Other Complications of Hospital Care

Various 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 (CVC) 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 noninfectious complications.

Figure 2.35. Composite measure: Bloodstream infections or mechanical adverse events associated with central venous catheter placements, Medicare hospital patients, by race, 2004-2007



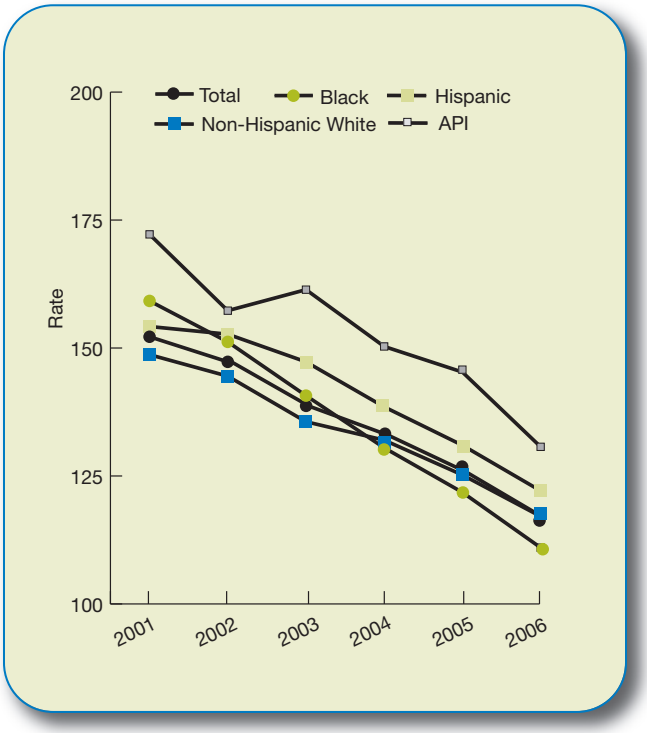
Source: Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System (MPSMS), 2004-2007.
Denominator: Medicare fee-for-service (FFS) discharges from the MPSMS sample with central venous catheter placement, all ages.
Note: Central venous catheter complications included in this composite are bloodstream infections and mechanical adverse events. Data were not available for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

- No statistically significant disparities were observed between Blacks and Whites in the percentage of CVC complications among hospital patients (Figure 2.35).
- From 2004 to 2007, there was no statistically significant change in the percentage of CVC complications.

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, gastrointestinal bleeding, or acute ulcer.

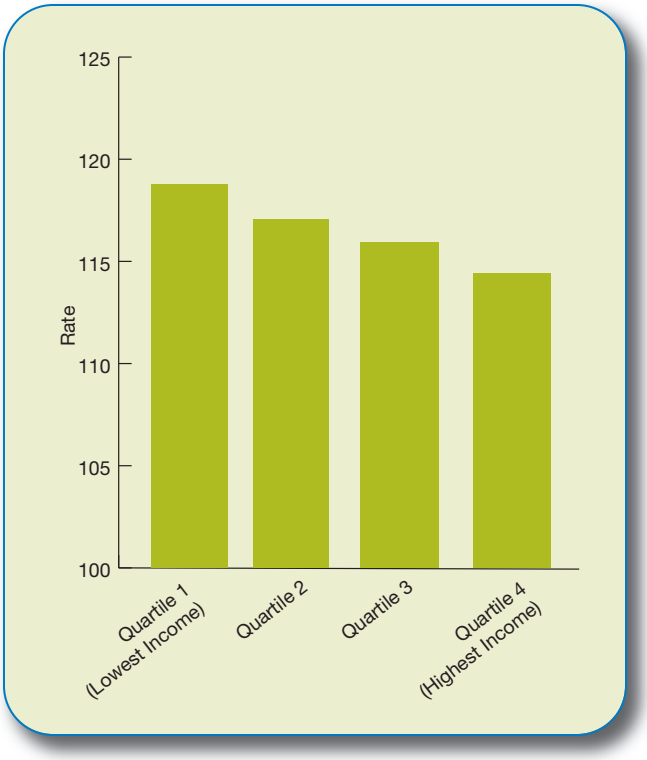
Figure 2.36. Deaths per 1,000 discharges with complications potentially resulting from care (failure to rescue), adults ages 18-74, by race/ethnicity, 2001-2006



Key: API = Asian or Pacific Islander.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2001-2006.
Denominator: Patients ages 18-74 from U.S. community hospitals whose hospitalizations were complicated by pneumonia, thromboembolic event, sepsis, acute renal failure, shock, cardiac arrest, gastrointestinal bleeding, or acute ulcer.
Note: White, Black, and API are non-Hispanic. Data were not available for American Indians and Alaska Natives. Data are adjusted for age, gender, and all patient refined-diagnosis related group clusters. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 25 States that have 66% of the U.S. resident population.

- From 2001 to 2006, there was significant improvement overall in the rates of in-hospital deaths following complications of care (from 152.2 per 1,000 in 2001 to 116.8 per 1,000 in 2006; Figure 2.36).
- During this period, initially the rates of in-hospital deaths following complications of care in Blacks were higher than in non-Hispanic Whites, but eventually they became lower. In 2006, the rate among Blacks was 111.0 per 1,000 discharges compared with 117.1 per 1,000 for non-Hispanic Whites.
- In 2006, Hispanics had a higher rate of in-hospital deaths following complications of care than non-Hispanic Whites (122.1 per 1,000 compared with 117.1 per 1,000).

Figure 2.37. Deaths per 1,000 discharges with complications potentially resulting from care (failure to rescue), adults ages 18-74, by income, 2006



Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2006.
Denominator: Patients ages 18-74 from U.S. community hospitals whose hospitalization is complicated by pneumonia, thromboembolic event, sepsis, acute renal failure, shock, cardiac arrest, gastrointestinal bleeding, or acute ulcer.
Note: Data are adjusted for age, gender, and diagnosis-related group clusters. Quartile income categories are used instead of the NHDR's usual descriptive categories because that is how data are collected for this measure. Quartile 1 corresponds to the lowest income quartile, and Quartile 4 corresponds to the highest income quartile. Income categories are based on the median household income of the ZIP Code of the patient's residence. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 25 States that have 66% of the U.S. resident population.

- In 2006, people living in communities in Quartile 1 (lowest income) had a higher rate of in-hospital deaths following complications of care than people living in communities in Quartile 4 (highest income) (118.8 per 1,000 compared with 114.4 per 1,000; Figure 2.37).

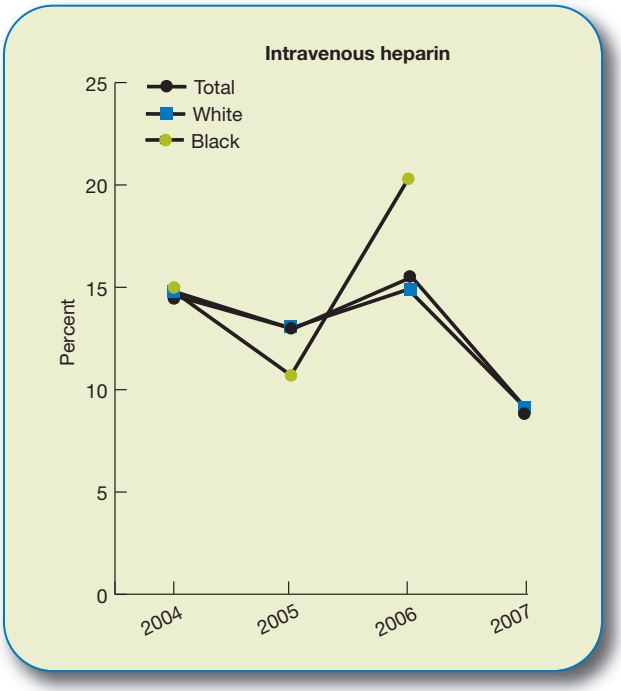
Complications of Medications

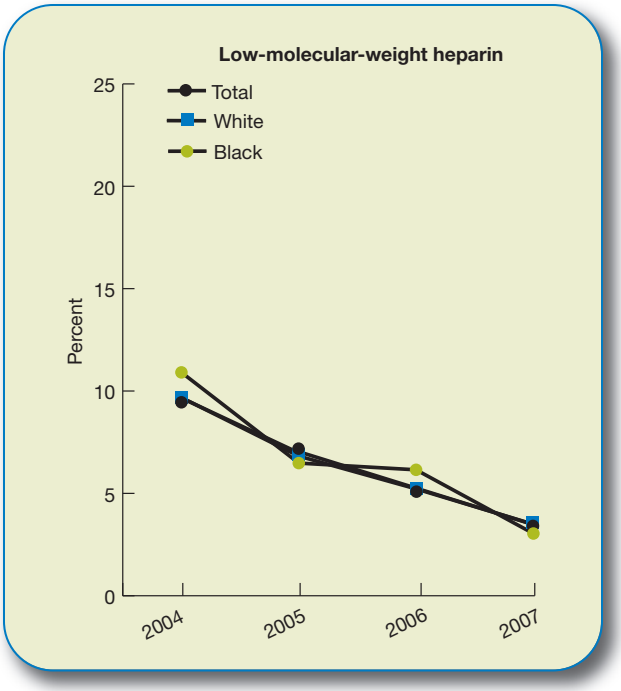
Complications of medications are common safety problems. Some adverse drug events may be related to misuse of medication, but others are not. However, prescribing medications that are inappropriate for a specific population may increase the risk of adverse drug events.

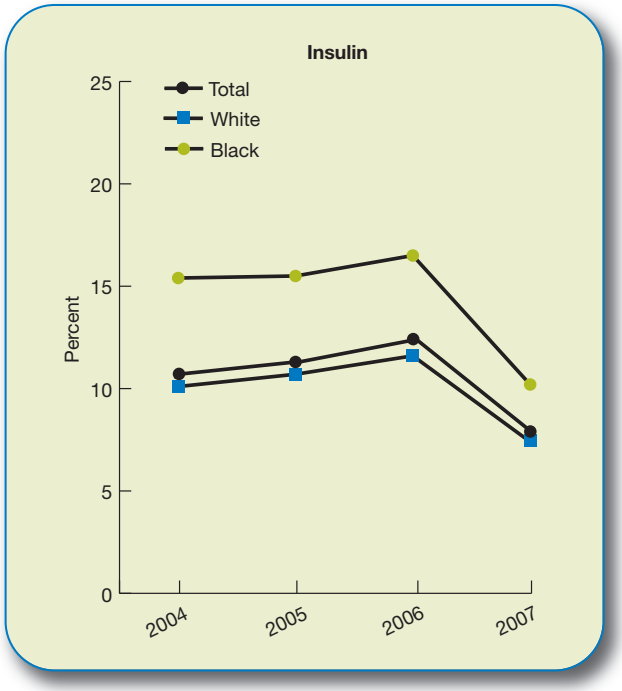
Adverse Drug Events in the Hospital

Some medications used in hospitals can cause serious complications. The Medicare Patient Safety Monitoring System tracks a number of "high-risk" drugs and the adverse events associated with them. Adverse drug events can include serious bleeding associated with intravenous heparin, subcutaneously administered low-molecular-weight heparin, and oral warfarin, as well as hypoglycemia associated with insulin or oral hypoglycemics.

Figure 2.38. Medicare hospital patients with medication-related adverse drug events, by race, 2004-2007







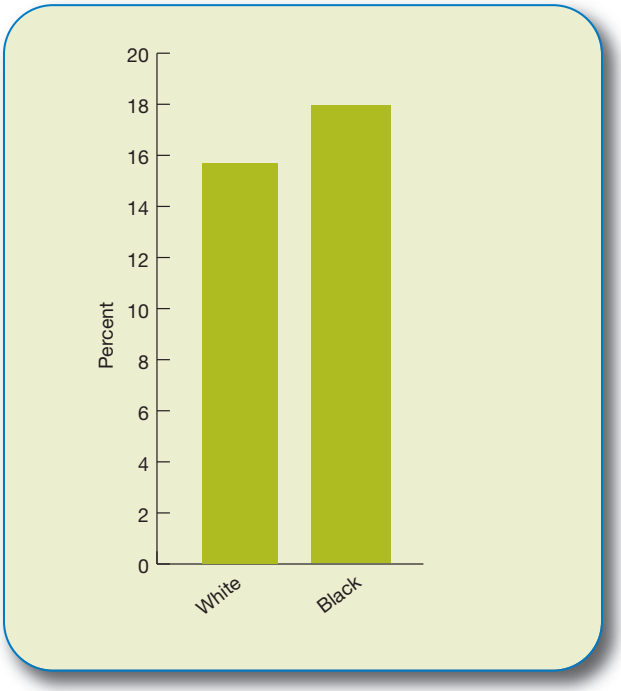
Source: Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System (MPSMS), 2004-2007.
Denominator: Medicare fee-for-service (FFS) discharges from the MPSMS sample that received the drug, all ages.
Note: Data were not collected for Asians, Native Hawaiians and Other Pacific Islanders, American Indians and Alaska Natives, and Hispanics. In 2007, data for adverse drug events for intravenous heparin among Blacks were not statistically reliable.

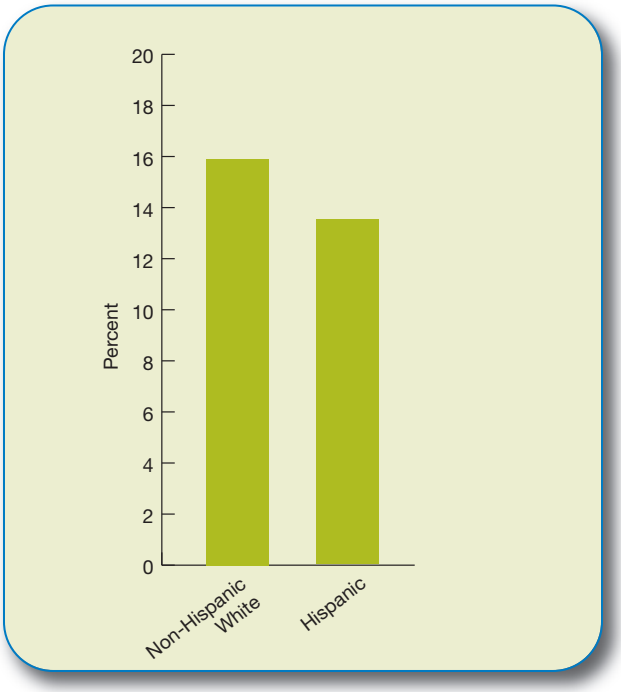
- In 2007, between 3.4% and 8.9% of hospitalized Medicare patients overall experienced an adverse drug event in the hospital, depending on the type of drug (Figure 2.38).
- From 2004 to 2006, the percentage of patients taking intravenous heparin who experienced an adverse drug event significantly decreased overall (from 14.6% to 8.9%). In 2006, there was no statistically significant difference between Blacks and Whites (no statistically reliable data were available for Blacks in 2007).
- From 2004 to 2007, the percentage of patients taking low-molecular-weight heparin who experienced an adverse drug event decreased overall (from 9.7% to 3.4%). There was no statistically significant difference between Blacks and Whites.
- From 2004 to 2007, the percentage of patients taking warfarin who experienced an adverse drug event decreased overall (from 8.8% to 4.2%).
- From 2004 to 2007, the percentage of patients taking insulin or hypoglycemics who experienced an adverse drug event decreased overall (from 10.7% to 7.8%). In 2007, Blacks were more likely than Whites to experience an adverse event with insulin (10.2% compared with 7.4%).

Potentially Inappropriate Medication Prescriptions for Older Patients

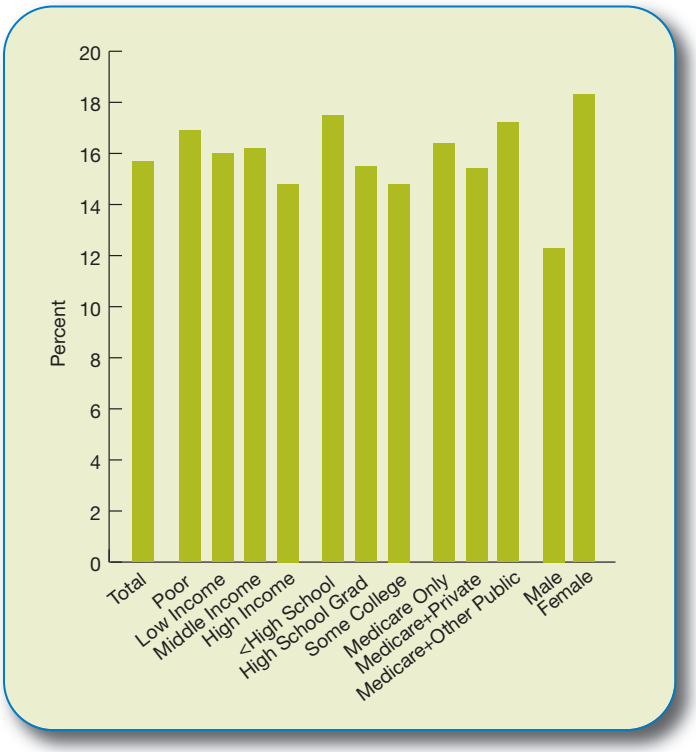
Some drugs that are appropriate for some patients are considered potentially harmful for older patients but are still prescribed to them.[95, xvii] Inappropriate medication use by older patients includes the use of drugs that should often or always be avoided for these patients.

Figure 2.39. Adults age 65 and over who received potentially inappropriate prescription medications in the calendar year, by race, ethnicity, income, education, insurance status, and gender, 2006





[xvii]Eleven drugs that should always be avoided for older patients include barbiturates, flurazepam, meprobamate, chlorpropamide, meperidine, pentazocine, trimethobenzamide, belladonna alkaloids, dicyclomine, hyoscyamine, and propantheline. Drugs that should often or always be avoided for older patients include carisoprodol, chlorzoxazone, cyclobenzaprine, metaxalone, methocarbamol, amitriptyline, chlordiazepoxide, diazepam, doxepin, indomethacin, dipyridamole, ticlopidine, methyldopa, reserpine, disopyramide, oxybutynin, chlorpheniramine, cyproheptadine, diphenhydramine, hydroxyzine, promethazine, and propoxyphene.



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population age 65 and over.
Note: Data were insufficient for this analysis for Asians and Other Pacific Islanders and for American Indians and Alaska Natives. This measure includes 33 inappropriate prescription medications. Prescription medications received include all prescribed medications initially purchased or otherwise obtained, as well as any refills.

- In 2006, there were no statistically significant differences by race, ethnicity, income, or education in the percentage of older adults receiving potentially inappropriate prescription medications (Figure 2.39).

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.[96, 97] For example, stroke patients' mortality and long-term disability are largely influenced by the timeliness of therapy.[98, 99] Timely delivery of appropriate care can also help reduce mortality and morbidity for chronic conditions such as chronic kidney disease,[100] and timely antibiotic treatments are associated with improved clinical outcomes.[101] 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.[102]

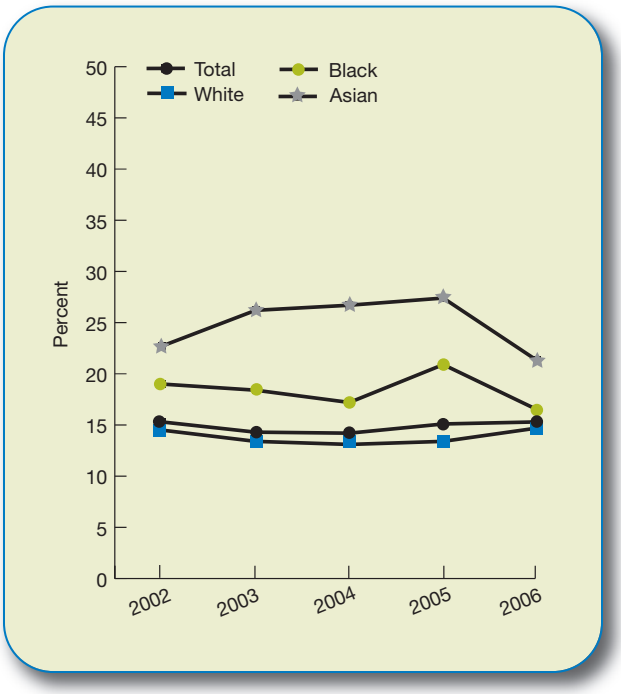
Early care for comorbid conditions has been shown to reduce hospitalization rates and costs for Medicare beneficiaries.[103] Some research suggests that, over the course of 30 years, the costs of treating diabetic complications can approach $50,000 per patient.[104] Timely outpatient care also can reduce admissions for pediatric asthma, which account for $1.25 billion in total hospitalization charges annually.[105]

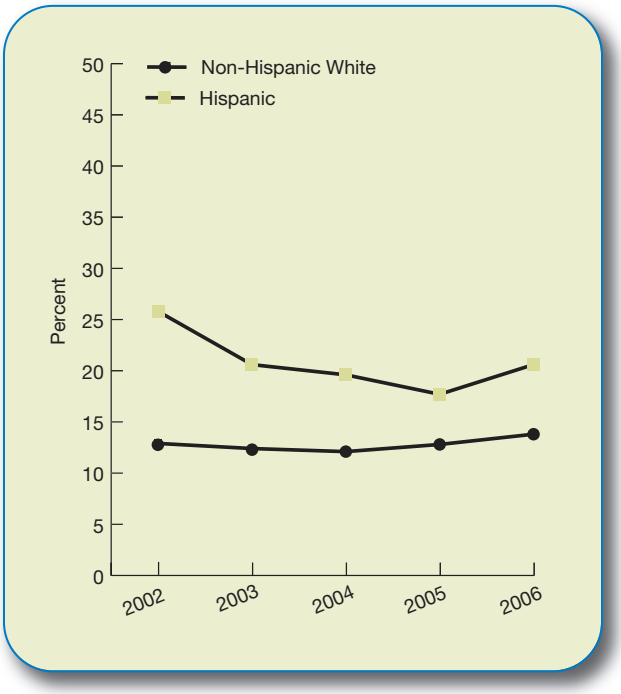
The measures of timeliness highlighted in this section are getting care for illness or injury as soon as wanted and timeliness of cardiac reperfusion for heart attack patients. (For findings related to all core measures of timeliness, refer to Tables 2.3a and 2.3b.)

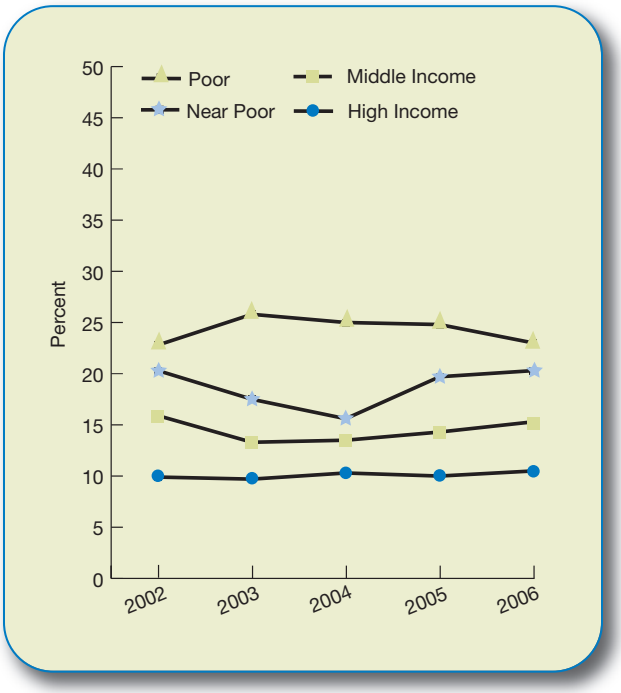
Getting Care for Illness or Injury As Soon As Wanted

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

Figure 2.40. Adults who needed care right away for an illness, injury, or condition in the last 12 months who sometimes or never got care as soon as wanted, by race, ethnicity, and income, 2002-2006





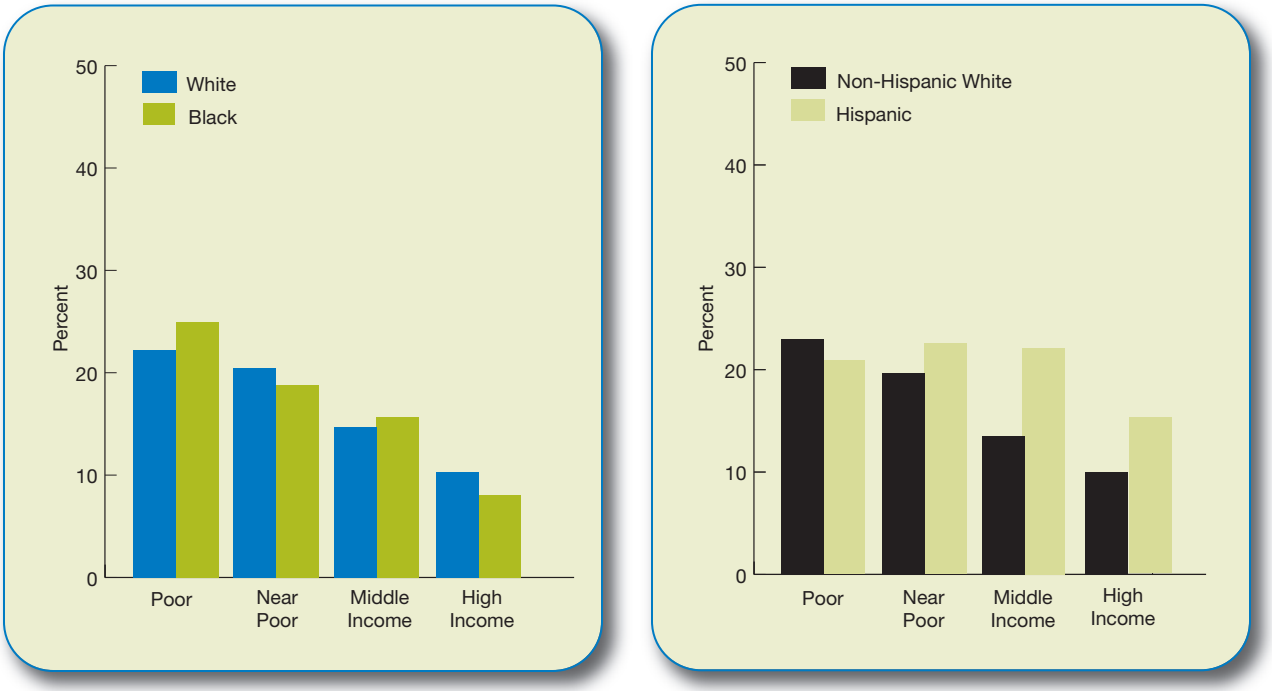


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2006.
Denominator: Civilian noninstitutionalized population age 18 and over.
Note: Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders and for American Indians and Alaska Natives.

- In 2006, Blacks fared worse than Whites on this measure of timeliness (16.5% compared with 14.7%; Figure 2.40).
- In 2006, Asians also were more likely than Whites to report problems getting care as soon as wanted (21.3% compared with 14.7%).
- During this period, the gap between Hispanics and non-Hispanic Whites in the percentage of adults who reported delayed care remained the same. In 2006, Hispanics remained more likely than non-Hispanic Whites to report problems getting care as soon as wanted (20.6% compared with 13.8%).
- In 2006, poor adults were more than twice as likely as high-income adults to report problems getting care as soon as wanted (23.0% compared with 10.5%).

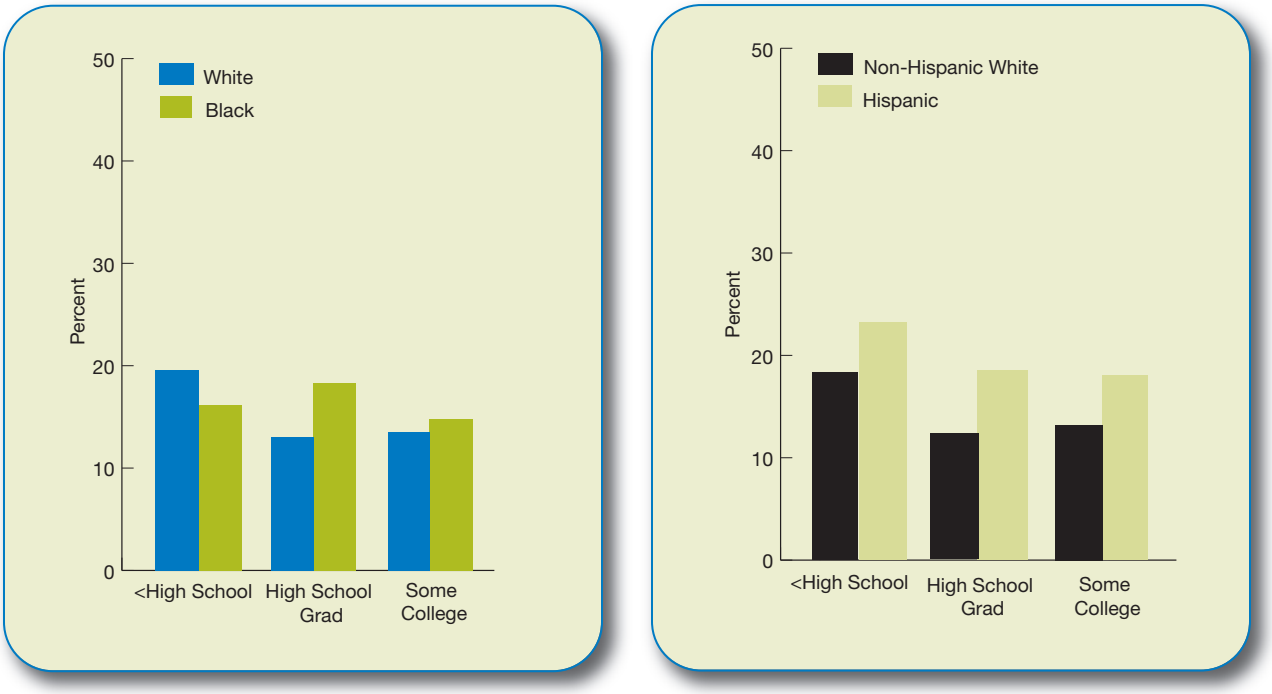
Socioeconomic factors may explain at least some of the racial and ethnic differences in timeliness. To distinguish the effects of race, ethnicity, income, and education on timeliness of primary care, this measure is stratified by income and education.

Figure 2.41. Adults who needed care right away for an illness, injury, or condition in the last 12 months who sometimes or never got care as soon as wanted, by race and ethnicity, stratified by income, 2006



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population age 18 and over.
Note: Data were insufficient for this analysis for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

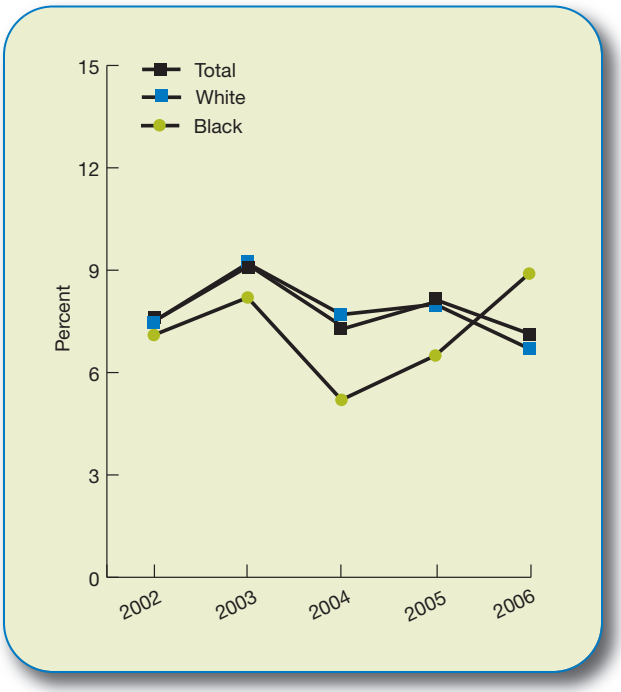
Figure 2.42. Adults who needed care right away for an illness, injury, or condition in the last 12 months who sometimes or never got care as soon as wanted, by race and ethnicity, stratified by education, 2006

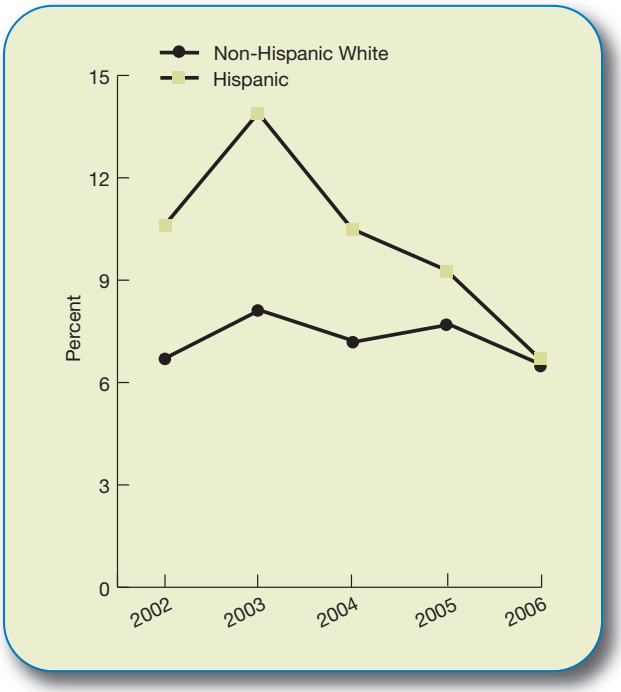


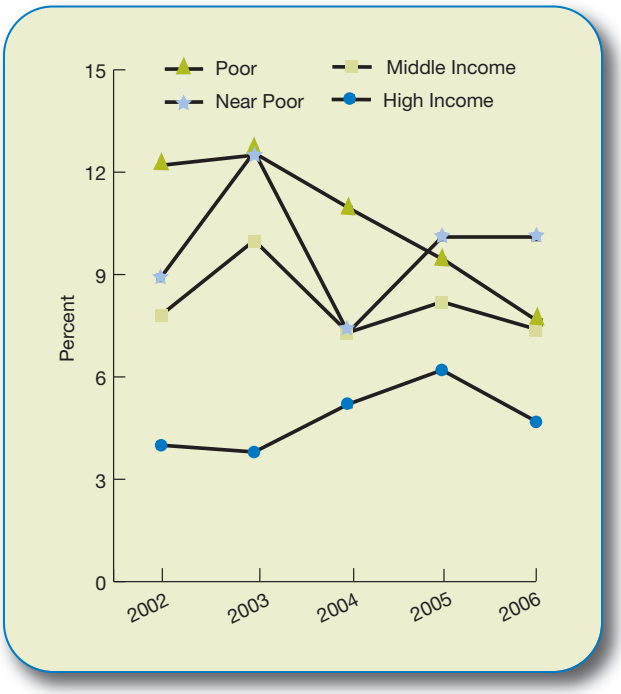
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population age 18 and over.
Note: Data were insufficient for this analysis for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

- Socioeconomic factors may explain at least some of the racial and ethnic differences in timeliness of primary care (Figures 2.41 and 2.42).
- High-income and middle-income Hispanics were about 1½ times as likely as high-income and middle-income non-Hispanic Whites to report problems getting care as soon as wanted.
- Among people with a high school education and people with some college education, Blacks were more likely than Whites to report problems getting care as soon as wanted (18.3% compared with 13% for high school graduates, and 14.8% compared with 13.5% for people with some college education).
- Among people with some college education, Hispanics were more likely than non-Hispanic Whites to report problems getting care as soon as wanted (18% compared with 13.2%).

Figure 2.43. Children who needed care right away for an illness, injury, or condition in the last 12 months who sometimes or never got care as soon as wanted, by race, ethnicity, and income, 2002-2006







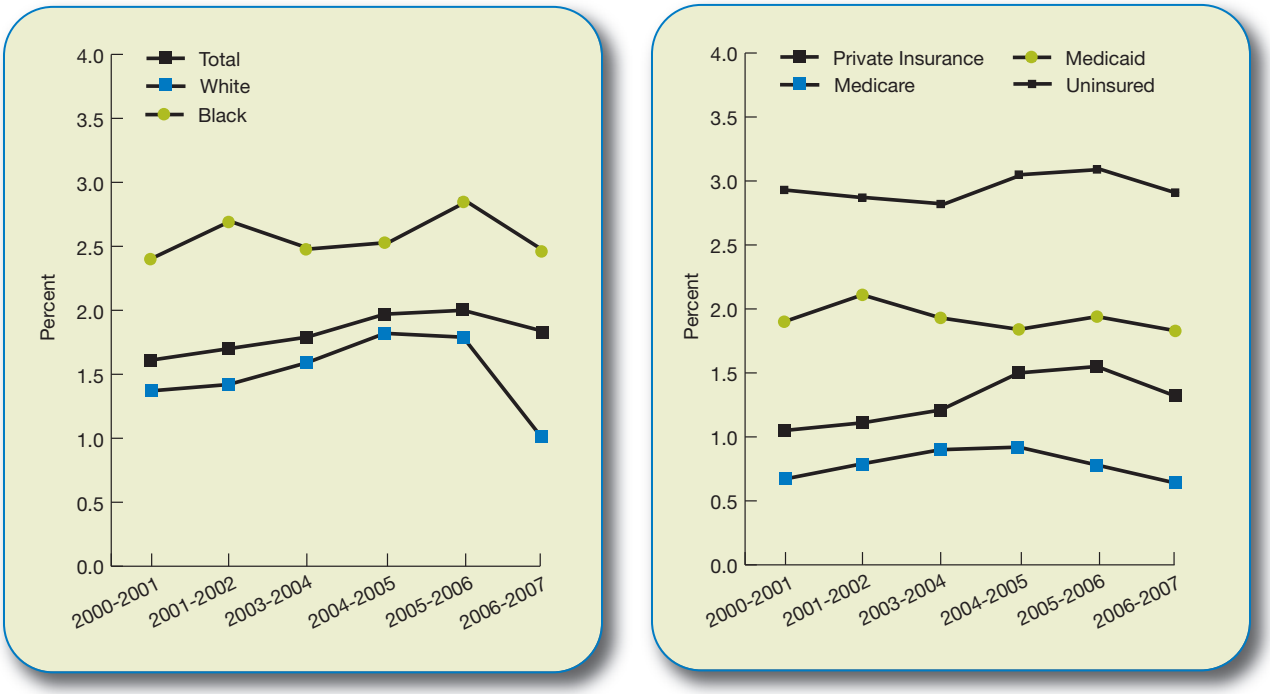
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2006.
Denominator: Civilian noninstitutionalized population under age 18.

- From 2002 to 2006, the percentage whose parents reported problems getting care as soon as wanted decreased for Hispanic children (from 10.6% to 6.7%) and poor children (from 12.2% to 7.6%) (Figure 2.43).
- In 2006, there were no statistically significant differences observed by race or ethnicity.
- In 2006, children from poor and near-poor families were more likely than children from high-income families to sometimes or never get care as soon as wanted (7.6% and 10.1%, respectively, compared with 4.7%).

Emergency Department Visits in Which Patients Left Without Being Seen

In 2006, almost a quarter (24.8%) of patients who had an emergency department (ED) visit in the United States spent 4 hours or more in the ED, with the same percentage of patients waiting 1 hour or more to be seen by a physician.[106] This finding may reflect the population-based 18% per person increase in ED visit volumes from 1996 to 2006.[106, 107] Although there are many reasons that a patient seeking care in an ED may leave without being seen, long waits tend to explain many departures.

Figure 2.44. Emergency department visits in which patients left without being seen, by race and payment source, 2000-2007



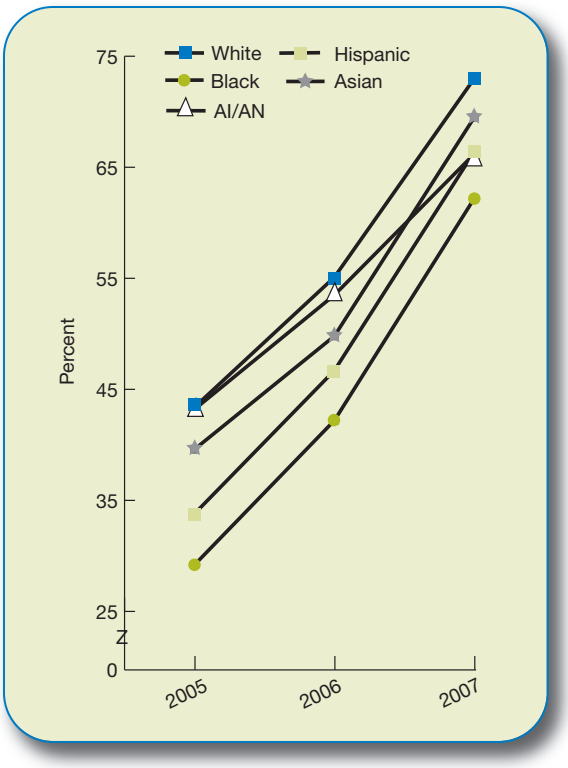
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey, 2000-2001, 2001-2002, 2003-2004, 2005-2006, and 2006-2007.
Denominator: Visits by patients (of all ages) to the EDs of non-Federal, short-stay, and general hospitals.
Note: Data were insufficient for this analysis for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

- Between 2000-2001 and 2006-2007, the overall percentage of ED visits in which patients left without being seen remained the same (Figure 2.44).
- In 2006-2007, there was no statistically significant difference between Blacks and Whites in the percentage of ED visits in which patients left without being seen.
- In 2006-2007, the percentage of ED visits in which Medicaid patients left without being seen remained the same and was higher than the rate among patients with private insurance (1.8% compared with 1.3%).
- In 2006-2007, the gap between uninsured patients and patients with private insurance remained the same. Uninsured patients were more than twice as likely to leave without being seen as patients with private insurance (2.9% compared with 1.3%).
- Medicare patients were the least likely to leave the ED without being seen, with a rate of 0.6% in 2006-2007.

Timeliness of Cardiac Reperfusion for Heart Attack Patients

The capacity to treat hospital patients in a timely manner is especially important for emergency situations such as heart attacks. Some heart attacks are caused by blood clots. Early actions, such as percutaneous coronary intervention (PCI) or fibrinolytic medication, may open blockages caused by blood clots by restoring blood flow to the heart, thus reducing heart muscle damage and saving lives.[108] To be effective, these actions need to be performed quickly after the start of a heart attack. In the NHDR, we examine a new measure of timeliness of cardiac reperfusion: receipt of PCI within 90 minutes among appropriate patients.

Figure 2.45. Hospital patients with heart attack who received percutaneous coronary intervention within 90 minutes, by race/ethnicity, 2005-2007



Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Medicare & Medicaid Services, Medicare Quality Improvement Organization Program, 2005-2007.
Denominator: Patients hospitalized with a principal diagnosis of acute myocardial infarction who were appropriate candidates for percutaneous coronary intervention.

- Among heart attack patients, the percentage of patients receiving timely PCI improved for all race/ethnicity groups from 2005 to 2007 (Figure 2.45).
- In all years, Blacks and Hispanics were less likely to receive timely PCI compared with Whites. In 2006 and 2007, Asians were also less likely to receive timely PCI compared with Whites.

Patient Centeredness

The IOM 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.[109]

Patient centeredness "encompasses qualities of compassion, empathy, and responsiveness to the needs, values, and expressed preferences of the individual patient."[2] In addition, effective communication between the provider and the patient is often a legal requirement.*

Patient-centered care is supported by good provider-patient communication so that patients' needs and wants are understood and addressed, and patients understand and participate in their own care.[109-112] This style of care has been shown to improve patients' health and health care.[110, 111, 113-115] Unfortunately, many barriers exist to good communication.

About one-third of Americans are not "health literate,"[116, 117] which means they lack the "capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."[118] They experience many difficulties, including:

- Less preventive care.[119]
- Poorer understanding of their conditions and care.[116, 120, 121]
- Higher use of emergency and inpatient services and higher rates of rehospitalization.[122, 123]
- Lower adherence to medication schedules.[122]
- Lower participation in medical decisionmaking.[124]

Individuals with inadequate health literacy incur higher medical costs and are more likely to have an inefficient mix of service use compared with those with adequate health literacy.[125]

Providers also differ in communication proficiency, including varied listening skills and different views from their patients' of symptoms and treatment effectiveness.[126] Additional factors influencing patient centeredness and provider-patient communication include:

- Language barriers.
- Racial and ethnic concordance between the patient and provider.
- Effects of disabilities on patients' health care experiences.
- Providers' cultural competency.

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* For example, Title VI of the Civil Rights Act of 1964, 42 U.S.C. 2000d, may require the practitioner or hospital to provide language interpreters and translate vital documents for limited-English-proficient persons. Section 504 of the Rehabilitation Act of 1973, 29 U.S.C. 794, may require the practitioner or hospital to provide sign language interpreters, materials in Braille, and/or accessible electronic formats for individuals with disabilities.

When health care is patient centered, both underuse and overuse of medical services are reduced.[127] Fewer diagnostic tests and referrals reduce strains on system resources and costs.[113]

Efforts to remove these possible impediments to patient centeredness are underway within the Department of Health and Human Services (HHS). For example, the Office of Minority Health has developed a set of Cultural Competency Curriculum Modules that aim to equip providers with cultural and linguistic competencies to help promote patient-centered care.[128, xviii] These modules are based on the National Standards on Culturally and Linguistically Appropriate Services. The standards are directed at health care organizations and aim to improve the patient centeredness of care for people with limited English proficiency (LEP). Another example, which is being administered by the Health Resources and Services Administration, is *Unified Health Communication*, a new Web-based course for providers that integrates concepts related to health literacy with cultural competency and LEP.[xix]

In addition, the HHS Office for Civil Rights has issued Guidance to Federal Financial Assistance Recipients Regarding Title VI Prohibition Against National Origin Discrimination Affecting Limited English Proficient Persons. This guidance explains that recipients of Federal financial assistance must take reasonable steps to provide LEP people with a meaningful opportunity to participate in HHS-funded programs. Failure to do so may violate the prohibition under Title VI of the Civil Rights Act of 1964, 42 U.S.C. 2000d, against national origin discrimination.[129]

The NHDR includes one core measure of patient centeredness—a composite measure on the patient experience of care. In addition, this year's report includes a new supplemental measure of workforce diversity—race/ethnicity of the Nation's dental workforce. Having a diverse workforce of health care providers may be an important component of patient-centered health care for many patients.

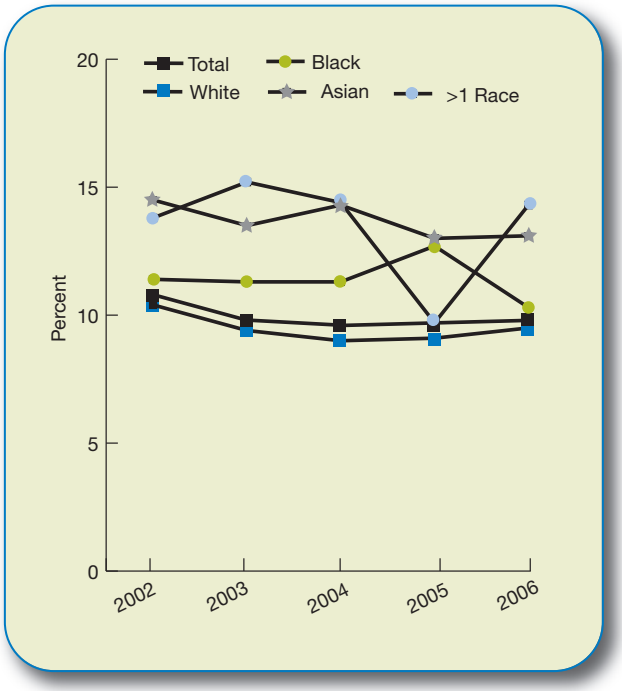
Patients' Experience of Care

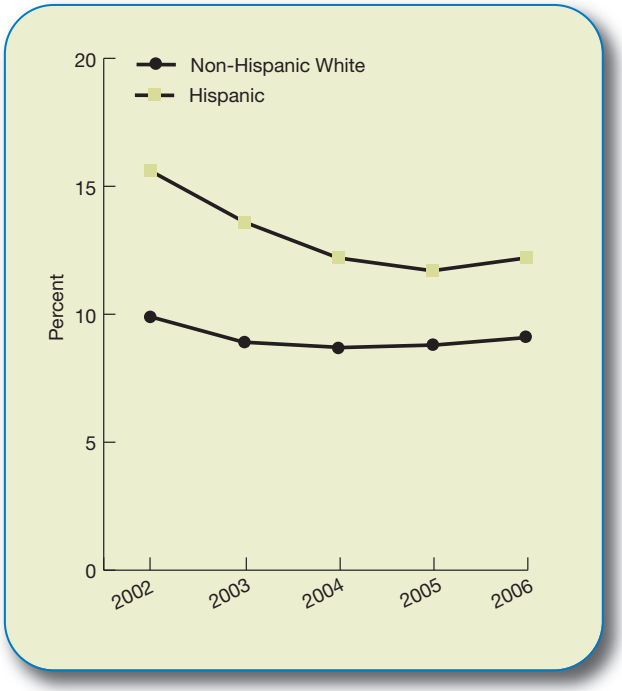
Using methods developed for the CAHPS® (Consumer Assessment of Healthcare Providers and Systems) survey,[130] the NHDR uses a composite measure that combines four measures of provider-patient communication into a single core measure. The four measures are: providers who sometimes or never listen carefully, explain things clearly, respect what patients say, and spend enough time with patients. Data are shown for adults and children.

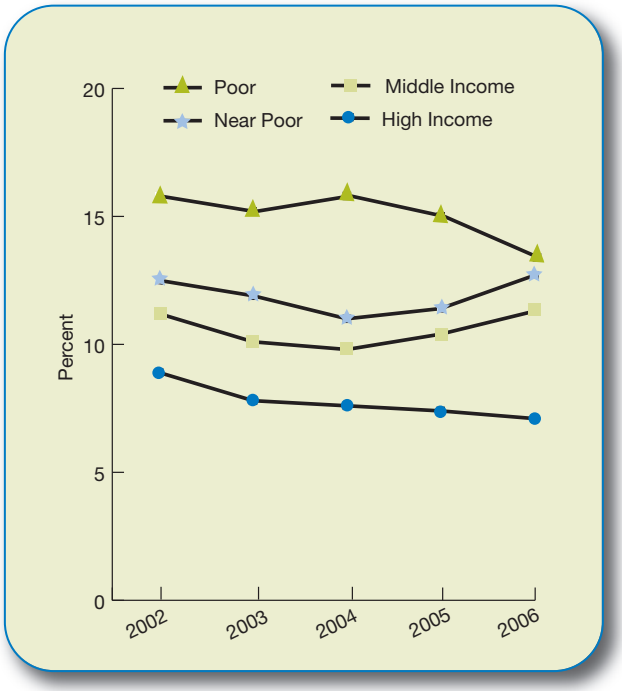
[xviii] This online program (available at http://www.thinkculturalhealth.org) is accredited for 9 Continuing Medical Education credits for physicians and 10.8 and 0.9 Continuing Education Units for nurses and pharmacists, respectively.

[xix] This online program (available at http://www.hrsa.gov/healthliteracy/training.htm) is accredited for 5 Continuing Medical Education credits for physicians and 5 Continuing Education Units for nurses, physician assistants, pharmacists, and Certified Health Education Specialists.

Figure 2.46. Composite measure: Ambulatory patients age 18 and over who reported poor communication with health providers,* by race, ethnicity, and income, 2002-2006







* Average percentage of adults age 18 and over who had a doctor's office or clinic visit in the last 12 months and reported poor communication with health providers (i.e., that their health providers sometimes or never listened carefully, explained things clearly, showed respect for what they had to say, and spent enough time with them).

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2006.

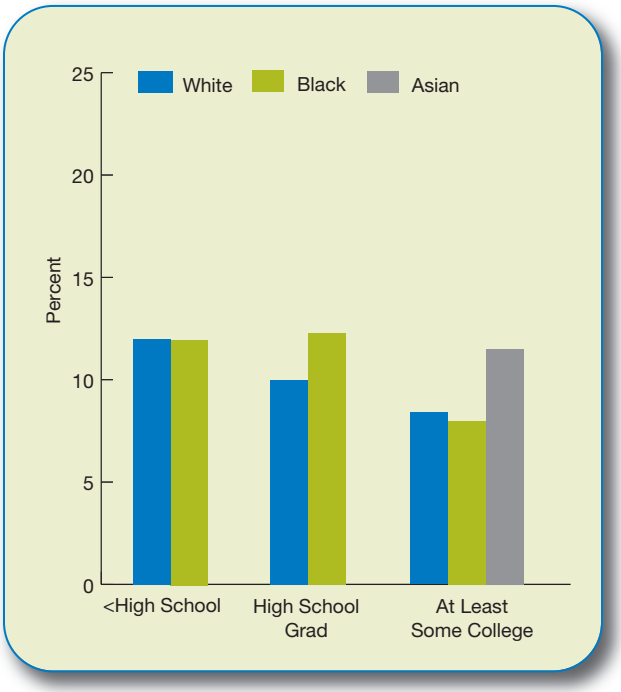
Denominator: Civilian noninstitutionalized population age 18 and over.

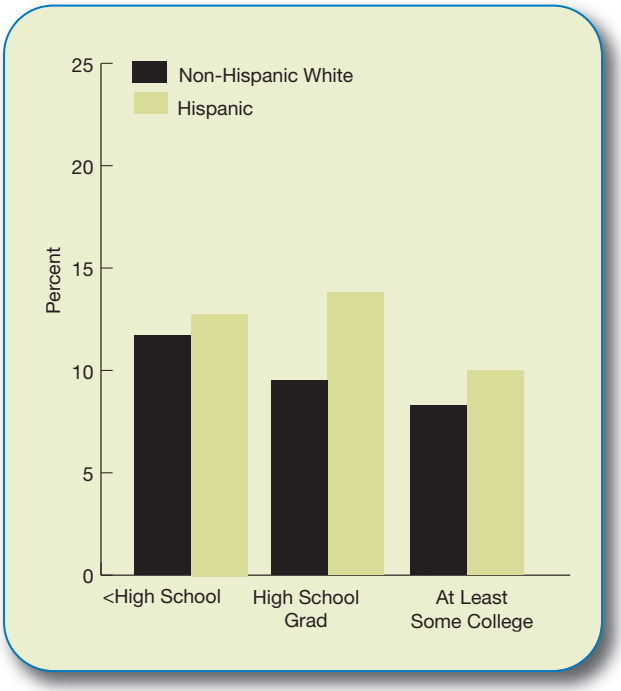
Note: Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders and for American Indians and Alaska Natives.

- In 2006, Blacks and Asians were more likely than Whites to report poor communication with their health providers (10.3% for Blacks and 13.1% for Asians compared with 9.5% for Whites; Figure 2.46). The difference between people of multiple race and Whites was not statistically significant.
- In 2006, the percentage reporting poor communication was higher for Hispanics than for non-Hispanic Whites (12.2% compared with 9.1%).
- In 2006, the percentage of adults who reported poor communication was higher for poor people than for high-income people (13.4% compared with 7.1%), and the gap observed for previous data years remained the same.

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

Figure 2.47. Composite measure: Adult ambulatory patients who reported poor communication with health providers,* by race and ethnicity, stratified by education, 2006



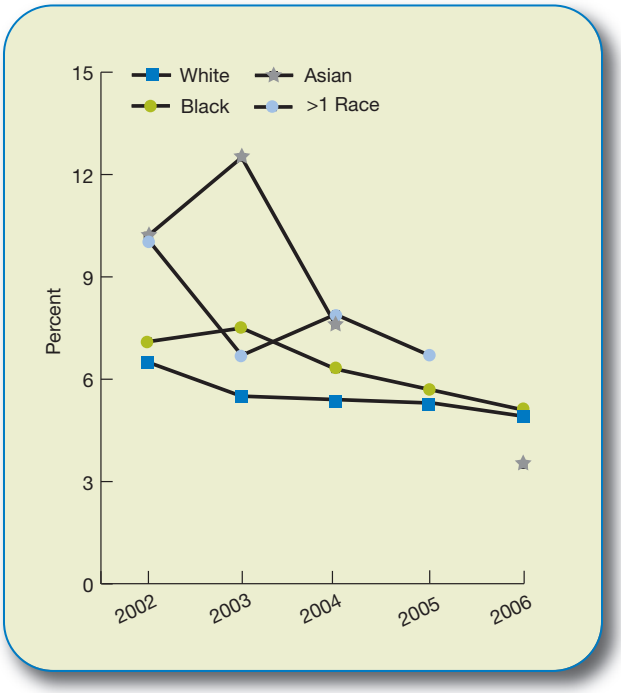


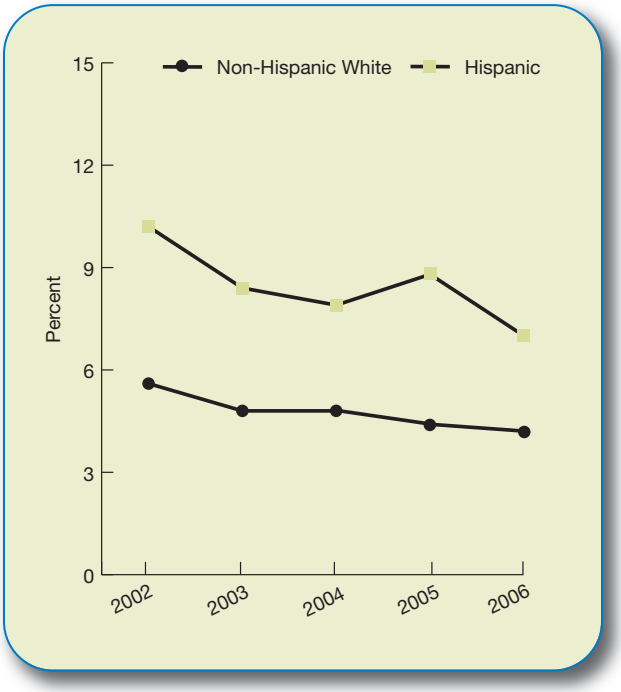
* Average percentage of adults age 18 and over who had a doctor's office or clinic visit in the last 12 months and reported poor communication with health providers (i.e., that their health providers sometimes or never listened carefully, explained things clearly, showed respect for what they had to say, and spent enough time with them).
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population age 18 and over.
Note: Sample sizes were too small to provide estimates for Asians with less than a high school education and Asian high school graduates.

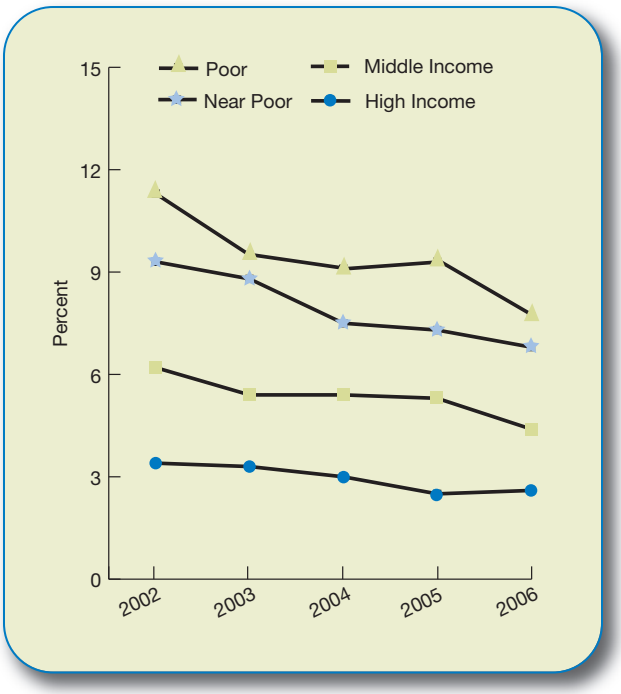
- The amount of education attained explains some of the racial and ethnic differences in provider-patient communication for patients age 18 and over (Figure 2.47).
- Among high school graduates, Blacks (12.3%) were more likely than Whites (10.0%) and Hispanics (13.8%) were more likely than non-Hispanic Whites (9.5%) to report poor communication with their health providers.

Communication in children's health care can pose a particular challenge, as children are often less able to express their health care needs and preferences. Often, a third party (e.g., a parent or guardian) is involved in communication and decisionmaking. Optimal communication in children's health care can therefore have a significant impact on receipt of high-quality care and subsequent health status. This is especially true for children with special health care needs (CSHCN).

Figure 2.48. Composite measure: Children with ambulatory visits whose parents reported poor communication with health providers,* by race, ethnicity, and family income, 2002-2006







* Average percentage of children under age 18 who had a doctor's office or clinic visit in the last 12 months and whose parents or guardians reported poor communication with their child's health providers (i.e., that their health providers sometimes or never listened carefully, explained things clearly, respected what they had to say, and spent enough time with them).

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2006.

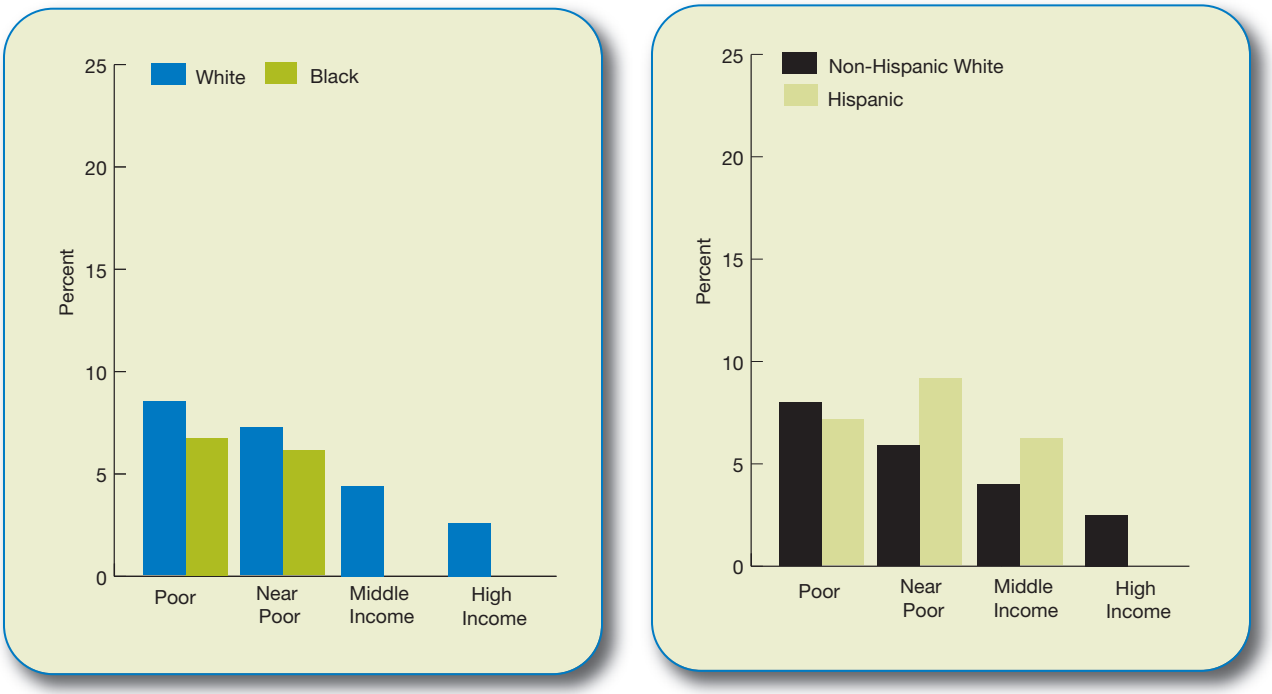
Denominator: Civilian noninstitutionalized population under age 18.

Note: Data for Asians (2005 only), multiple-race children (2006 only), Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives did not meet criteria for statistical reliability.

- Overall, the percentage of children whose parents or guardians reported poor communication with their health providers decreased from 6.7% in 2002 to 4.8% in 2006 (data not shown).
- In 2006, there were no statistically significant differences between Black and White children whose parents or guardians reported poor communication with their health providers (Figure 2.48).
- From 2002 to 2006, the difference between Hispanics and non-Hispanic Whites in the percentage of children whose parents or guardians reported poor communication with their health providers remained statistically significant. In 2006, the percentage of children whose parents or guardians reported poor communication with their health providers was still markedly higher for Hispanics than for non-Hispanic Whites (7.0% compared with 4.2%).
- In 2006, statistically significant differences among children whose parents or guardians reported poor communication persisted by income. Percentages remained higher for children from poor (7.7%), near-poor (6.8%), and middle-income (4.4%) families than for children from high-income families (2.6%).

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

Figure 2.49. Composite measure: Children with ambulatory visits whose parents reported poor communication with health providers,* by race and ethnicity, stratified by income, 2006



* Children under 18 years of age whose parents or guardians reported that their child's health providers sometimes or never listened carefully, explained things clearly, respected what they had to say, and spent enough time with them.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population under age 18.
Note: Sample sizes were too small for all income categories to provide estimates for Asians and Pacific Islanders or American Indians and Alaska Natives. Data were not available for middle- and high-income Blacks or high-income Hispanics.

- Socioeconomic factors may explain at least some of the racial and ethnic differences in provider-patient communication for patients under age 18 (Figure 2.49).
- In 2006, among poor people, there was no statistically significant difference between the percentage of Black and White children whose parents reported poor communication with their health providers.
- Among poor people, Hispanics were as likely as non-Hispanic Whites to report poor communication with their health providers.

Diversity of the Dental Professionals Workforce

In 2000, more than 30% of Americans identified themselves as members of racial or ethnic minority groups. It is estimated that by 2050, half of Americans will be members of minority groups.[131] Minority providers are more likely than their White colleagues to practice in underserved minority communities.[132, 133] Health care workforce diversity also is considered to be important for health care research, education, administration, and policy, both to provide role models and to shape a health care system that meets the needs of all individuals.

Diversity increases the opportunities for race- and language-concordant health care visits. It also can improve cultural competency at the system, organization, and provider levels in several ways. These include appropriate program design and policies, organizational commitment to culturally competent care, and cross-cultural education of colleagues.[134] As such, diversity is an important element of a patient-centered health care encounter.

Previous reports have presented data on diversity in the physician and nursing workforces. This year, the NHDR presents data on diversity in the dental professions workforce.

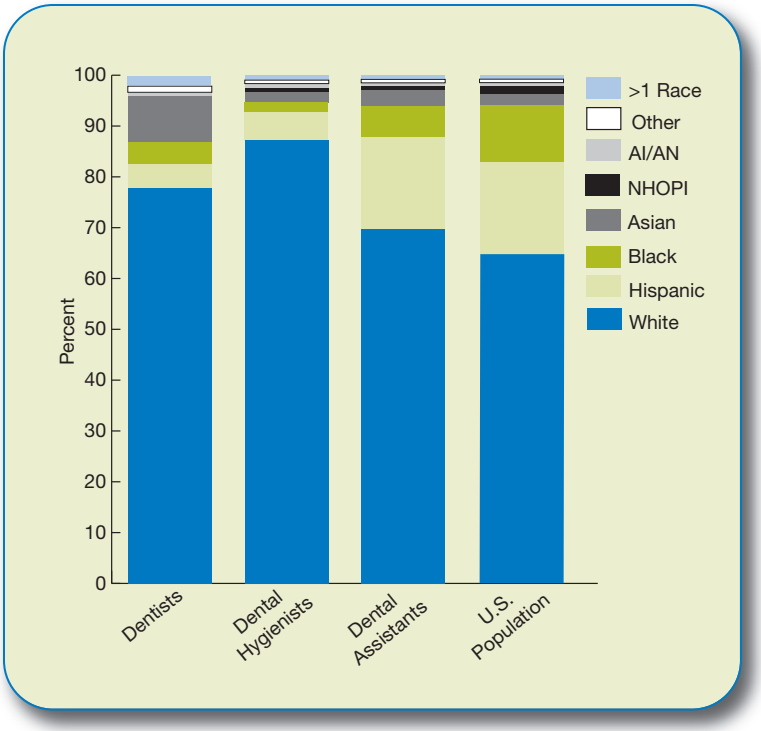
Three dental professions are presented in this analysis: dentists, dental hygienists, and dental assistants. Dentists diagnose and treat problems with teeth and tissues in the mouth, give advice, and administer preventive services. Most dentists practice solo, owning their own business and maintaining a support staff of other administrative and dental professionals. Dentists must receive a doctorate degree in dentistry before practicing unsupervised, usually requiring at least 8 years of education beyond high school.

Dental hygienists remove deposits from teeth, teach patients how to practice good oral hygiene, and provide other preventive dental care. They also examine patients' teeth and gums, recording the presence of diseases or abnormalities. To practice as a dental hygienist, one must complete a degree program with an accredited dental hygiene school and obtain a State license.

Dental assistants provide support for dentists and dental hygienists by performing a variety of patient care, office, and laboratory duties. Several training routes may lead to work as a dental assistant, including formal training at a technical college ranging from 1 to 2 years and on-the-job training.

In the coming years, demand for dental services is expected to increase, as well as delegation of work in dental settings. Thus, the overall growth rates for dental assistants and dental hygienists are expected to be higher compared with that of dentists and compared to job growth in the economy as a whole.

Figure 2.50. U.S. dentistry professionals compared with the U.S. population, by race/ethnicity, 2007



Key: AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.
Source: U.S. Census Bureau, American Community Survey, 2007.
Note: All racial groups are non-Hispanic.

- In 2007, 76.3% of the approximately 182,000 dentists in the United States were White; 3.5% were Black, 12.9% were Asian, and 6.4% were Hispanic (Figure 2.50). Compared with the general U.S. population, Whites and Asians were overrepresented and Blacks and Hispanics were underrepresented.
- In 2007, 88.9% of the approximately 155,000 dental hygienists were White; 2.2% were Black, 2.8% were Asian, and 4.8% were Hispanic. Relative to the U.S. population, Whites were overrepresented, and Blacks, Asians, and Hispanics were underrepresented.
- Also in 2007, there were about 314,000 dental assistants, of whom 69.2% were White, 6.5% were Black, 4.7% were Asian, and 17.8% were Hispanic. Relative to the U.S. population, Whites, Asians, and Hispanics were overrepresented, and Blacks were underrepresented.

Focus on Care Coordination

Health care in the United States is fragmented and difficult to navigate. Patients often receive medical services, treatments, and advice from multiple providers in many different care settings. Communication of important information among providers and between providers and patients frequently entails delays or inaccuracies or fails to occur at all.

Care coordination is defined as the deliberate organization of patient care activities between two or more participants involved in a patient's care to facilitate the appropriate delivery of health care services.[xx] It is multidimensional and essential to preventing adverse events, ensuring efficiency, and making care patient centered.[135, 136] Key elements of care coordination include integrating medical information from multiple sources and providers and managing patient transitions from one setting of care to another.

The focus on care coordination in this year's NHDR is a first attempt to provide data on this important topic. This section does not attempt to provide a comprehensive framework for care coordination; nor does it provide an exhaustive list of potential measures. Rather, it provides examples where some information is available. AHRQ hopes that this section will stimulate productive discussions in the area of care coordination, including development and use of valid, reliable, and feasible quality measures. AHRQ hopes that this chapter will be the first step in an evolving national discussion on measuring care coordination.

Integration of Information

Patients often seek care from many providers. Medical information generated in different settings may not be sent to a patient's primary care provider. Actively gathering and managing all of a patient's medical information is an important part of care coordination. Tasks include ensuring that patients are informed of important findings such as test results, primary care doctors are informed of care from specialists, and providers within a practice have access to needed information.

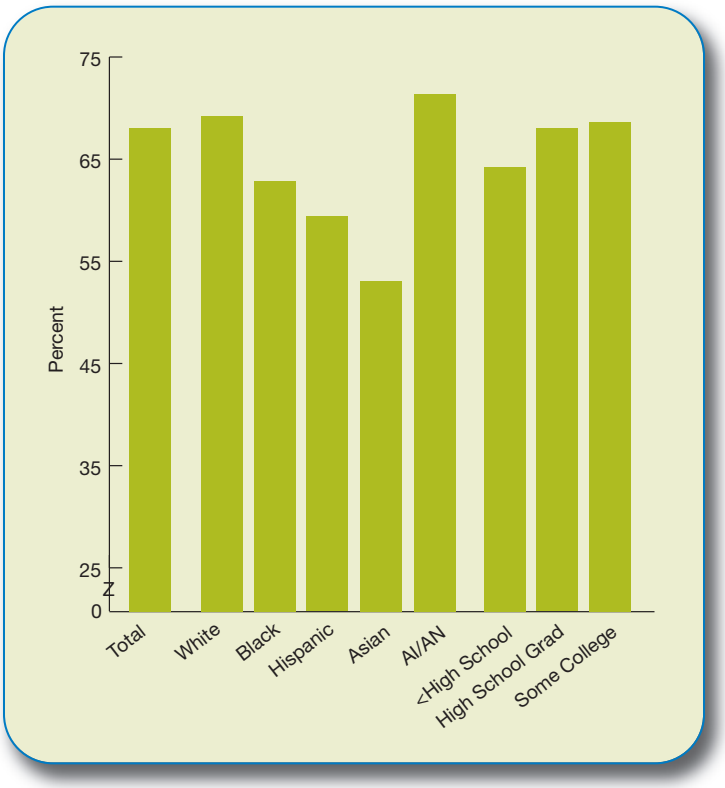
No national survey gathers information about these aspects of care coordination. To help fill this gap, we examined subnational data-gathering activities and identified the Massachusetts Health Quality Partners (MHQP) Patient Experience Survey as a unique source of this information. MHQP is an independent organization established in 1995, comprising a broad-based coalition of physicians, hospitals, health plans, purchasers, consumers, academics, and government agencies. These groups work together to promote improvement in the quality of health care services in Massachusetts.

In 2007, MHQP conducted a mail and Internet survey of commercially insured adult and pediatric patients' experiences of care. The survey included patients being served in primary care practices with at least three doctors.[xxi] Several questions related directly to coordination of information across providers and patients. The survey was completed by 51,000 adult patients and 20,000 parents of pediatric patients receiving care in more than 400 medical practices in Massachusetts. The response rate was 42%.

[xx] This definition was derived from a review of multiple definitions from various sources. For more information, refer to "Closing the Quality Gap: A Critical Analysis of Quality Improvement Strategies: Volume 7—Care Coordination," available at http://www.ahrq.gov/clinic/tp/caregaptp.htm.

[xxi] The survey and results are available at http://www.mhqp.org/quality/pes/pesMASumm.asp?nav=031600.

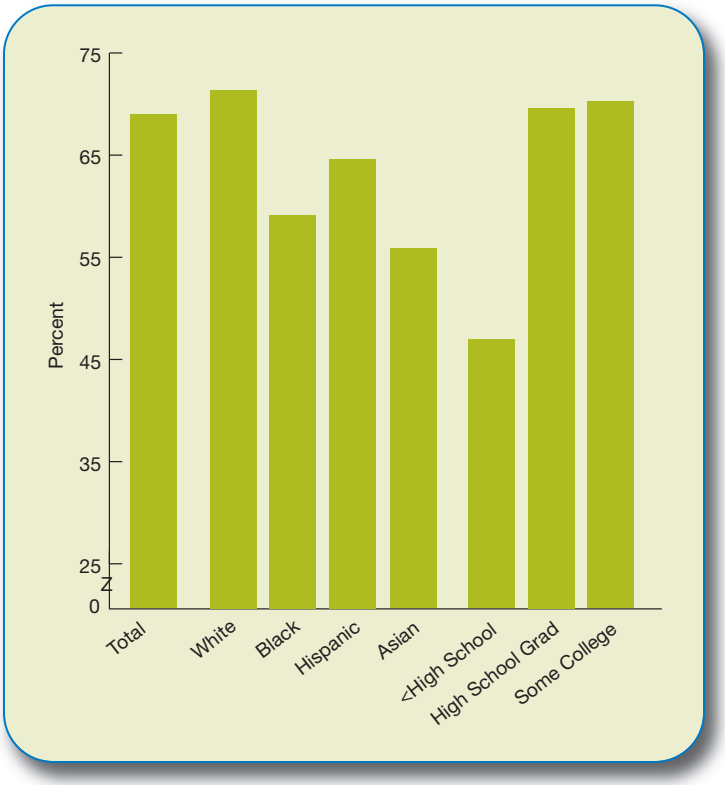
Figure 2.51. Patients who reported that they always received test results, commercially insured adults ages 18-64 in primary care practices, Massachusetts, 2007



Key: AI/AN = American Indian or Alaska Native; HS = high school.
Source: Massachusetts Health Quality Partners, Patient Experience Survey, 2007.
Note: Respondents limited to patients who received a test in the past year.

- Of adult patients who were sent for a blood test, x-ray, or other test by their personal primary care doctor, 68% reported that someone from the doctor's office followed up to give them the test results (Figure 2.51).
- Black, Hispanic, and Asian patients were less likely to receive followup on test results than White patients.
- Patients with less than a high school education were less likely to receive followup than patients with some college education.

Figure 2.52. Parents of patients who reported that they always received test results, commercially insured children under age 18 in primary care practices, Massachusetts, 2007



Key: HS = high school.
Source: Massachusetts Health Quality Partners, Patient Experience Survey, 2007.
Note: Respondents limited to patients who received a test in the past year. Education refers to the parents. Data were insufficient for this analysis for American Indians and Alaska Natives.

- Of children who were sent for a test, 69% of parents reported that someone from the doctor's office followed up to give the test results (Figure 2.52).
- Black, Hispanic, and Asian children were less likely to receive followup on test results than White children.
- Children whose parents had less than a high school education were less likely to receive followup than children whose parents had some college education.

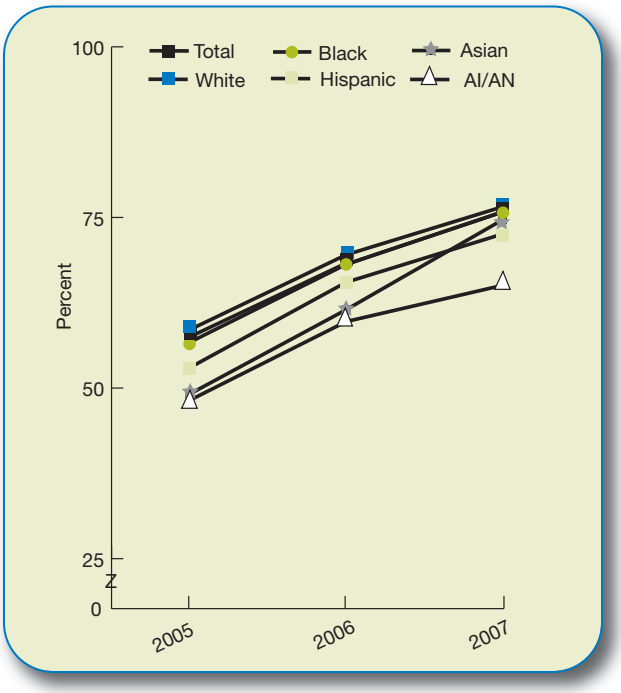
Transitions of Care

As health care conditions and needs change, patients often need to be moved from one setting to another. These transitions of care place patients at heightened risk of adverse events. Important information may be lost or miscommunicated as responsibility is delivered to new parties.

A common transition of care is discharge from the hospital, with approximately 39 million community hospital discharges occurring each year.[137] Discharge from a hospital typically indicates improvement in a patient's condition so that the patient no longer needs inpatient care. It also means that the patient and family need to resume responsibility for the patient's daily activities, diet, medications, and other treatments. The patient also needs to visit his or her personal doctor and know what to do if his or her condition deteriorates.

Discharge instructions can help ensure that a patient receives the information needed to stay healthy after leaving the hospital. The NHDR reports on a measure that tracks receipt of written discharge instructions among adult patients hospitalized for heart failure. This measure reflects these patients' perceptions of the discharge information they received.

Figure 2.53. Adult hospital patients with heart failure who were given complete written discharge instructions, 2005-2007



Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Medicare & Medicaid Services, Medicare Quality Improvement Organization Program, 2005-2007.
Denominator: Adult patients hospitalized with a principal diagnosis of heart failure.
Note: Complete written discharge instructions needed to address all of the following: activity level, diet, discharge medications, followup appointment, weight monitoring, and actions to take if symptoms worsen.

- From 2005 to 2007, the percentage of adult hospital patients with heart failure who were given complete written discharge instructions improved from 57.5% to 76.0% (Figure 2.53). Improvements were observed among all racial groups.
- In all years, Hispanics and AI/ANs were less likely than Whites to receive complete written discharge instructions.

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						
Women age 40 and over who reported they had a mammogram within the past 2 years[iii]	=	↓		=	=	↓
Breast cancer incidence per 100,000 women age 40 and over diagnosed at advanced stage[iv]	↓	↑		↑		↑
Breast cancer deaths per 100,000 female population per year	↓	↑		↑		↑
Adults age 50 and over who received a sigmoidoscopy, colonoscopy, or proctoscopy or fecal occult blood test in the last 2 years[iii]	↓	↓		↓	=	↓
Colorectal cancer diagnosed at advanced stage[iv]	↓	↑		↑		↑
Colorectal cancer deaths per 100,000 population per year[v]	↓	↑		↑		↓
Diabetes						
Composite: Adults with diabetes who had hemoglobin A1c measurement, dilated eye exam, and foot exam in the calender year[vi]	=					↓
End Stage Renal Disease						
Adult hemodialysis patients with adequate dialysis[vii]	=	↑		↑		↑
Dialysis patients under age 70 who were registered on a waiting list for transplantation[viii]	=	↑		=		=

[i] Compared with Whites.
[ii] Compared with non-Hispanic Whites.
[iii] Source: National Health Interview Survey, 2005.
[iv] Source: Surveillance, Epidemiology, and End Results Program, 2006. 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, 2006. 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, 2005.
[vii] Source: CMS End Stage Renal Disease Clinical Performance Measures Project, 2007.
[viii] U.S. Renal Data System, 2005. 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.

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
Heart Disease						
Composite: Hospital patients with heart attack who received recommended hospital care[iii]	=	=		=		↓
Deaths per 1,000 adult hospital admissions with acute myocardial infarction[iv]	↑	↓				=
Composite: Hospital patients with heart failure who received recommended hospital care[iii]	↑	=		↓		↓

[i] Compared with Whites.
[ii] Compared with non-Hispanic Whites.
[iii] Source: CMS Quality Improvement Organization Program, 2007. 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: HCUP State Inpatient Databases disparities analysis file, 2006. 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.

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.
↑ Group receives better quality of health care than the comparison group or has better outcomes.
↓ 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.

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						
New AIDS cases per 100,000 population age 13 and over[iii]	↓	↑	↓	=		↓
Maternal and Child Health						
Children ages 19-35 months who received all recommended vaccines[iv]	↓	=		=	=	=
Children ages 2-17 with advice about healthy eating[v]	=	=			=	=
Children ages 3-6 who ever had their vision checked[v]	=					↓
Children ages 2-17 who had a dental visit in the past year[v]	↓	=			↓	↓
Children ages 2-17 with advice about physical activity[v]	=	=			=	=

[i] Compared with Whites.

[ii] Compared with non-Hispanic Whites.

[iii] Source: Centers for Disease Control and Prevention, 2007. This source categorizes race/ethnicity information as a single item: non-Hispanic White, non-Hispanic Black, Hispanic, Asian, Native Hawaiian and Other Pacific Islander, American Indian and Alaska Native. These contrasts compare each group with non-Hispanic Whites.

[iv] Source: National Immunization Survey, 2007.

[v] Source: Medical Expenditure Panel Survey, 2006.

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.

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 a major depressive episode in the last 12 months who received treatment for depression in the last 12 months[iii]	↓					↓
Suicide deaths per 100,000 population[iv]	↑	↑		=		↑
People age 12 and over who needed treatment for illicit drug use or alcohol problem who received such treatment[iii]	=					=
Respiratory Diseases						
Adults age 65 and over who ever received pneumococcal vaccination[v]	↓	↓				↓
Composite: Hospital patients with pneumonia who received recommended hospital care[vi]	↓	↓		↓		↓
Patients with tuberculosis who completed a curative course of treatment within 1 year of treatment initiation[vii]	=	=		↓		↓

[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, 2007.

[iv] Source: National Vital Statistics System-Mortality, 2006. 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: National Health Interview Survey, 2007.

[vi] Source: CMS Quality Improvement Organization Program, 2007. 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.

[vii] Source: CDC National TB Surveillance System, 2005. 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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↓ 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.

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
Lifestyle Modification						
Adults with obesity who ever received advice to exercise more[iii]	=				=	↓
Adult current smokers who received advice to quit smoking[iii]	=					↓
Adults with obesity who ever received advice about healthy eating	↓				=	↓
Supportive and Palliative Care						
Long-stay nursing home residents with physical restraints[iv]	↑	↓		↓		↓
High-risk long-stay nursing home residents with pressure sores[iv]	↓	=		↓		↓
Short-stay nursing home residents with pressure sores[iv]	↓	=		=		↓
Functional Status Preservation and Rehabilitation						
Adult home health care patients whose ability to walk or move around improved[v]	=	=	=	=	=	=
Adult home health care patients who were admitted to the hospital[v]	↓	↑	=	↓	↓	↓

[i] Compared with Whites.
[ii] Compared with non-Hispanic Whites.
[iii] Medical Expenditure Panel Survey, 2006.
[iv] Source: CMS Minimum Data Set, 2007. 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.
[v] Source: CMS Outcome and Assessment Information Set, 2007.
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.

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						
Women age 40 and over who reported they had a mammogram within the past 2 years[iv]	↓	↓	↓	↓	↓	↓
Breast cancer incidence per 100,000 women age 40 and over diagnosed at advanced stage[v]						
Adults age 50 and over who received a sigmoidoscopy, colonoscopy, or proctoscopy or fecal occult blood test within the last 2 years[iv]	↓	↓	↓	↓	↓	↓
Colorectal cancer deaths per 100,000 population per year[vi]				↓	↓	
Diabetes						
Composite: Adults with diabetes who had hemoglobin A1c measurement, dilated eye exam, and foot exam in the calender year[vii]	↓	↓	=	↓	=	↓
Maternal and Child Health						
Children ages 19-35 months who received all recommended vaccines[viii]	↓	↓	=			
Children ages 2-17 with advice about healthy eating[vii]	↓	↓	↓			↓
Children ages 3-6 who ever had their vision checked[vii]	↓	↓	↓			↓
Children ages 2-17 who had a dental visit in the past year[vii]	↓	=	↓			↓
Children ages 2-17 with advice about physical activity[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: National Health Interview Survey, 2005.
[v] Source: Surveillance, Epidemiology, and End Results Program, 2006.
[vi] Source: National Vital Statistics System-Mortality, 2006.
[vii] Source: Medical Expenditure Panel Survey, 2006.
[viii] Source: National Immunization Survey, 2007.
Key: HS=high school.

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 last 12 months who received treatment for the depression in the last 12 months[iv]	=	=	=	=	=	
Suicide deaths per 100,000 population[v]						
People age 12 and over who needed treatment for illicit drug use or alcohol problem who received such treatment[iv]	↑	↑	=	=	↑	
Lifestyle Modification						
Adults with obesity who ever received advice to exercise more[vi]	↓	↓	↓	↓	↓	↓
Adult current smokers who received advice to quit smoking[vi]	=	=	=	=	=	↓
Adults with obesity who ever received advice about healthy eating[vi]	↓	↓	↓	↓	=	↓
Respiratory Diseases						
Adults age 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, 2007.
[v] Source: National Vital Statistics System-Mortality, 2006.
[vi] Source: Medical Expenditure Panel Survey, 2006.
[vii] Source: National Health Interview Survey, 2007.
Key: HS=high school.

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

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
Health Care-Associated Infections						
Adult surgery patients who received appropriate timing of antibiotics[iii]	=	↓		↓		↓
Postoperative Complications						
Composite: Adult surgery patients with postoperative complications[iii]	=					
Other Complications of Hospital Care						
Composite: Bloodstream infections or mechanical complications per 1,000 central venous catheter placements[iii]	=					
Deaths per 1,000 discharges following complications of care[iv]	=		↓			=
Complications of Medications						
Adults age 65 and over who received potentially inappropriate prescription medications[v]	=					=

[i] Compared with Whites.

[ii] Compared with non-Hispanic Whites.

[iii] Source: Medicare Patient Safety Monitoring System, 2007.

[iv] Source: HCUP State Inpatient Databases disparities analysis file, 2006. 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, 2006. 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.

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.

↑ Group receives better quality of health care than the comparison group or has better outcomes.

↓ 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.

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 got care for illness or injury as soon as wanted[iii]	=	=			=	↓
Emergency department visits in which patients left without being seen[iv]	↓	=				
Patient Centeredness						
Composite: Adults who reported poor provider-patient communication[iii]	=	↓			=	↓
Composite: Children whose parents reported poor provider-patient communication[iii]	=	=			=	↓

[i] Compared with Whites.
[ii] Compared with non-Hispanic Whites.
[iii] Source: Medical Expenditure Panel Survey, 2006. This source did not collect information for >1 race.
[iv] Source: National Hospital Ambulatory Medical Care Survey – Emergency Department, 2006-2007. Missing rates preclude analysis by ethnicity.
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.
↑ Group receives better quality of health care than the comparison group or has better outcomes.
↓ 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.

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 got care for illness or injury as soon as wanted[iv]	↓	↓	↑	↓	=	↓
Emergency department visits in which patients left without being seen[v]						↓
Patient Centeredness						
Composite: Adults who reported poor provider-patient communication[iv]	↓	↓	↑	↓	↓	↓
Composite: Children whose parents reported poor provider-patient communication[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, 2006.
[v] Source: National Hospital Ambulatory Medical Care Survey – Emergency Department, 2006-2007.
Key: HS=high school.

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.
↑ Group receives better quality of health care than the comparison group or has better outcomes.
↓ 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

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Chapter 3. Access to Health Care

Many Americans have good access to health care that enables them to benefit fully from the Nation's health care system. Others face barriers that make it difficult to obtain basic health care services. As shown by extensive research and confirmed in previous National Healthcare Disparities Reports (NHDRs), racial and ethnic minorities and people of low socioeconomic status (SES)[i] are disproportionately represented among those with access problems. Poor access to health care comes at both a personal and societal cost. For example, if people do not receive vaccinations, they may become ill and spread disease to others, increasing the burden of disease for society overall in addition to the burden borne individually.

Components of Health Care Access

Access to health care means having "the timely use of personal health services to achieve the best health outcomes."[1] Attaining good access to care requires three discrete steps:

- Gaining entry into the health care system.
- Getting access to sites of care where patients can receive needed services.
- Finding providers who meet the needs of individual patients and with whom patients can develop a relationship based on mutual communication and trust.[2]

Health care access is measured in several ways, including:

- Structural measures of the presence or absence of specific resources that facilitate health care, such as having health insurance or a usual source of care.
- Assessments by patients of how easily they are able to gain access to health care.
- Utilization measures of the ultimate outcome of good access to care (i.e., the successful receipt of needed services).

How This Chapter Is Organized

This chapter presents new information about disparities in access to health care in America since the last NHDR. It is divided into two sections:

- **Facilitators and barriers to health care**, including measures of health insurance coverage, usual source of care and primary care provider, and patient perceptions of need.
- **Health care utilization**, including measures of dental care, emergency care, potentially avoidable admissions, mental health care, and substance abuse treatment.

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[i] As described in Chapter 1, Introduction and Methods, income and educational attainment are used to measure SES in the NHDR. Unless specified, poor = below the Federal poverty level (FPL), near poor = 100-199% of the FPL, middle income = 200-399% of the FPL, and high income = 400% or more of the FPL. The measure specifications and data source descriptions provide more information on income groups by data source.

Information about provider-patient communication is found in the section on patient centeredness in Chapter 2, Quality of Health Care. As in previous NHDRs, this chapter focuses on disparities in access to care related to race, ethnicity, and SES in the general U.S. population. This chapter also presents analyses of changes over time and stratified analyses. Disparities in access to care and provider-patient communication within specific priority populations are discussed in Chapter 4, Priority Populations.

Facilitators and Barriers to Health Care

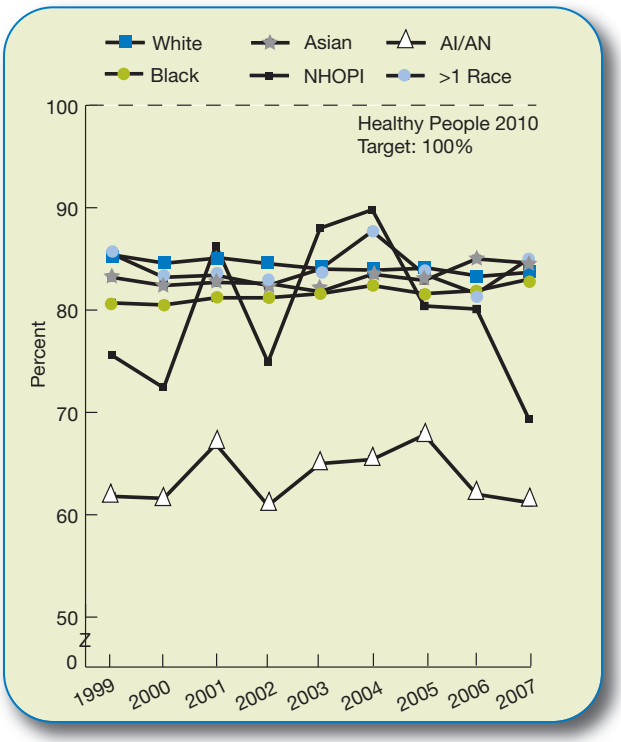
Facilitators and barriers to health care discussed in this section include health insurance, usual source of care (including having a usual source of ongoing care and a usual primary care provider), and patient perceptions of need. (Refer to Tables 3.1a and 3.1b for a summary of findings related to all core measures on facilitators and barriers to health care.)

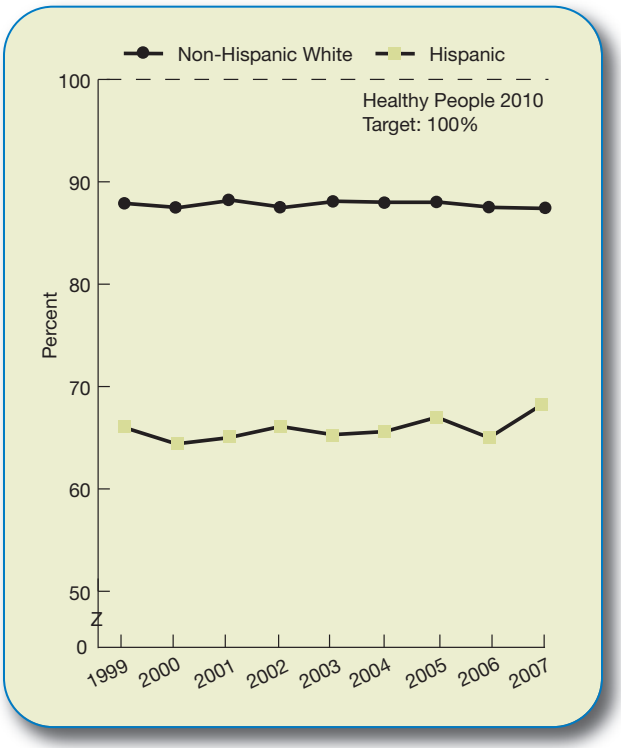
Health Insurance

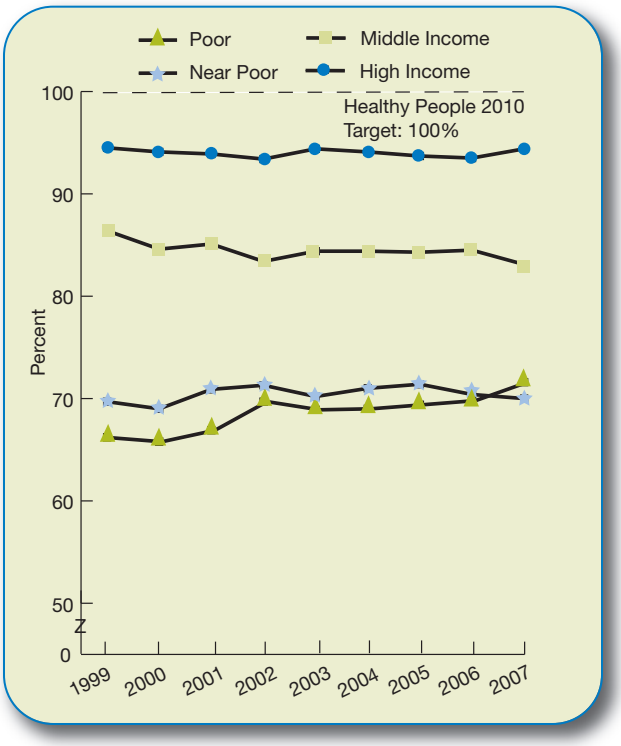
Health insurance facilitates entry into the health care system. Uninsured people are less likely to receive medical care[3] and are more likely to die early[4] and have poor health status.[5] The costs of early death and poor health among uninsured people total $65 billion to $130 billion annually.[4]

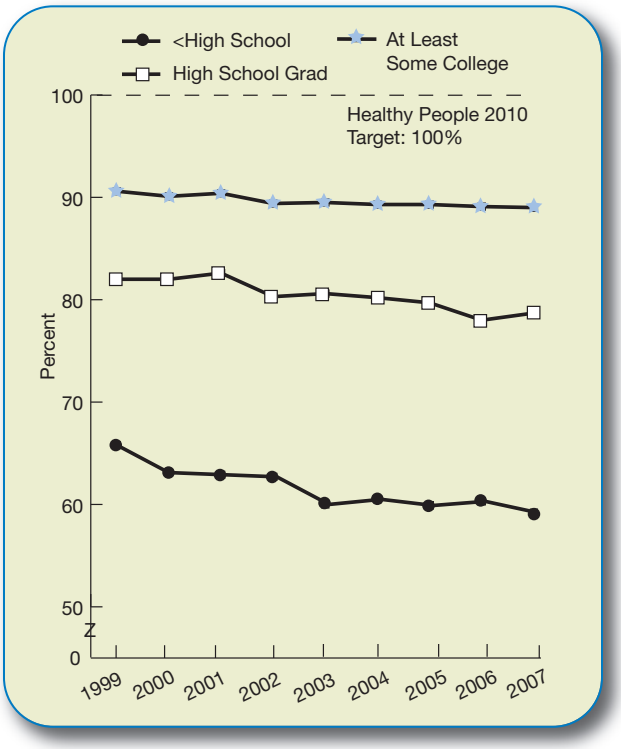
The financial burden of uninsurance is also great for uninsured individuals; almost 50% of personal bankruptcy filings are due to medical expenses.[6] Uninsured individuals report more problems getting care, are diagnosed at later disease stages, and get less therapeutic care.[6, 7] They are sicker when hospitalized and more likely to die during their stay.[7]

Figure 3.1. People under age 65 with health insurance, by race, ethnicity, income, and education, 1999-2007









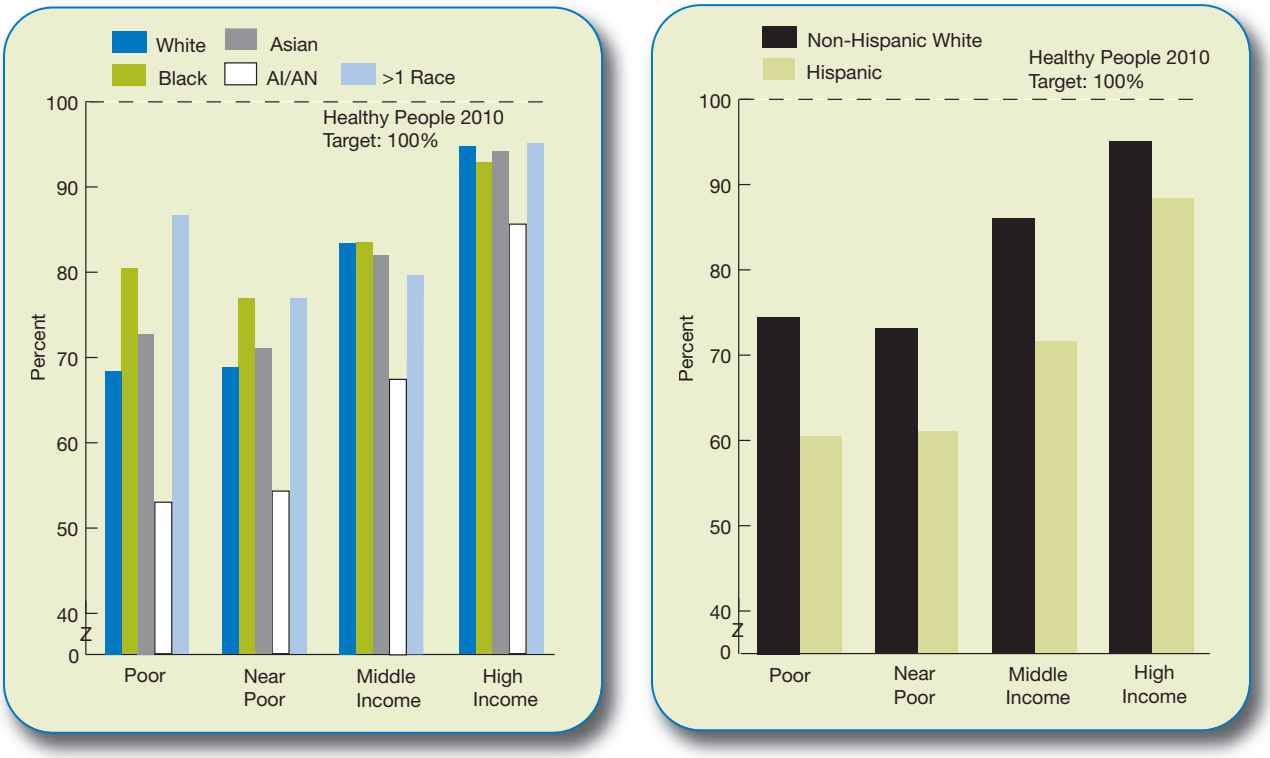
Key: AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey (NHIS), 1999-2007.
Denominator: Analyses by race, ethnicity, and income performed for civilian noninstitutionalized population under age 65. Analyses by education performed for civilian noninstitutionalized population ages 25-64.
Note: NHIS respondents are asked about health insurance coverage at the time of interview; respondents are considered uninsured if they lack private health insurance, Medicare, Medicaid, State Children's Health Insurance Program (SCHIP), a State-sponsored health plan, other government-sponsored health plan, or a military health plan, or if their only coverage is through the Indian Health Service. This measure reflects the percentage of survey respondents under age 65 who were covered by health insurance at the time of the interview.

- From 1999 to 2007, the gap between Blacks and Whites in insurance coverage decreased (Figure 3.1). In 2007, there was no statistically significant difference between Blacks and Whites in the percentage of people with insurance (83.0% compared with 83.7%).
- From 1999 to 2007, the gap between Hispanics and non-Hispanic Whites in insurance coverage remained the same. In 2007, the percentage of people with insurance was lower for Hispanics than for non-Hispanic Whites (68.2% compared with 87.4%).
- The gap between poor people and high-income people decreased during this period. Still, in 2007, the percentage of people with insurance was significantly lower for poor people than for high-income people (71.6% compared with 94.4%).
- The gap between people with less than a high school education and people with at least some college education increased. In 2007, the percentage of people with insurance was one-third lower for people with less than a high school education than for people with at least some college education (59.2% compared with 89.0%).

- From 1999 to 2007, the rates of insurance worsened for Whites and middle-income people. There were no statistically significant changes in the rate of insurance for Blacks, Asians, Native Hawaiians and Other Pacific Islanders (NHOPIs), American Indians and Alaska Natives (AI/ANs), non-Hispanic Whites, and Hispanics.
- During this period, the rates also worsened for adults ages 25-64 at every education level.

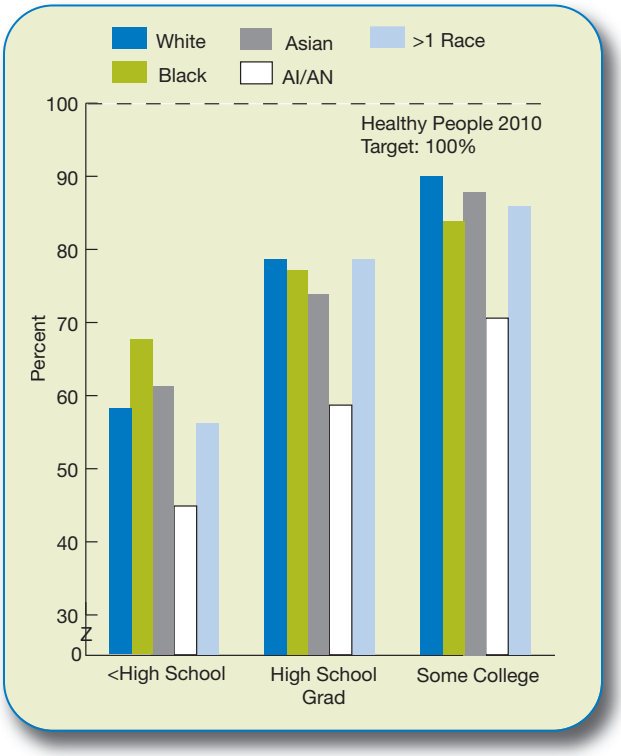
Racial and ethnic minorities are disproportionately of lower SES.[8] To distinguish the effects of race, ethnicity, income, and education on health insurance coverage, this measure is stratified by income and education level.

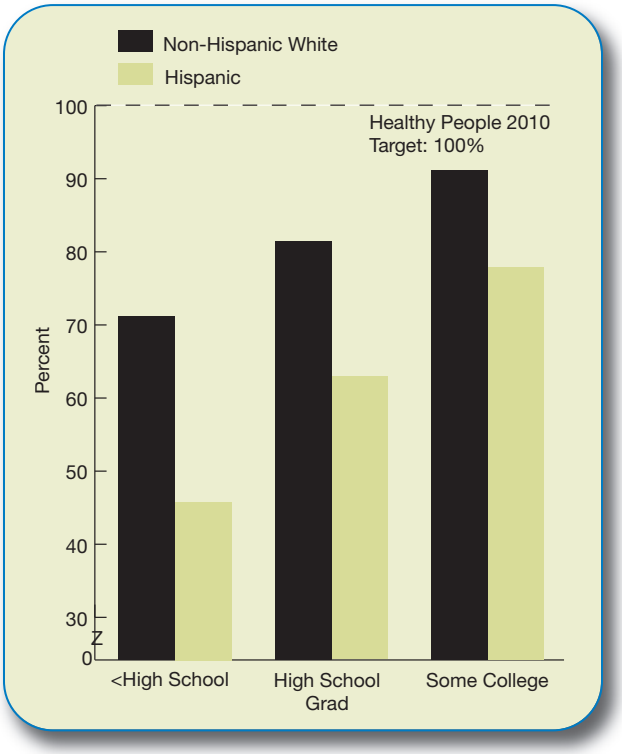
Figure 3.2. People under age 65 with health insurance, by race and ethnicity, stratified by income, 2007



Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey (NHIS), 2007.
Denominator: Civilian noninstitutionalized population under age 65.
Note: NHIS respondents are asked about health insurance coverage at the time of interview; respondents are considered uninsured if they lack private health insurance, public assistance, Medicare, Medicaid, State Children's Health Insurance Program (SCHIP), a State-sponsored health plan, other government-sponsored health plan, or a military health plan, or if their only coverage is through the Indian Health Service. This measure reflects the percentage of survey respondents under age 65 who were covered by health insurance at the time of the interview.

Figure 3.3. People under age 65 with health insurance, by race and ethnicity, stratified by education, 2007





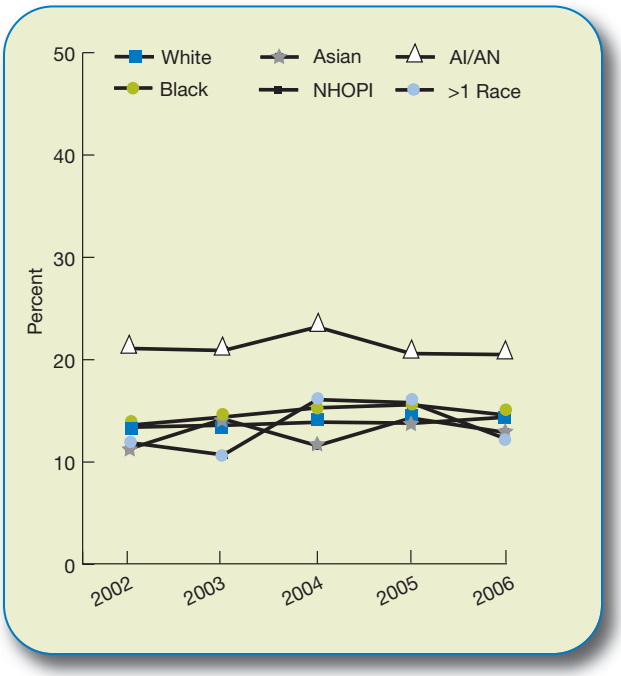
Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey (NHIS), 2007.
Denominator: Civilian noninstitutionalized population ages 25-64.
Note: NHIS respondents are asked about health insurance coverage at the time of interview; respondents are considered uninsured if they lack private health insurance, public assistance, Medicare, Medicaid, State Children's Health Insurance Program (SCHIP), a State-sponsored health plan, other government-sponsored health plan, or a military health plan, or if their only coverage is through the Indian Health Service. This measure reflects the percentage of survey respondents under age 65 who were covered by health insurance at the time of the interview.

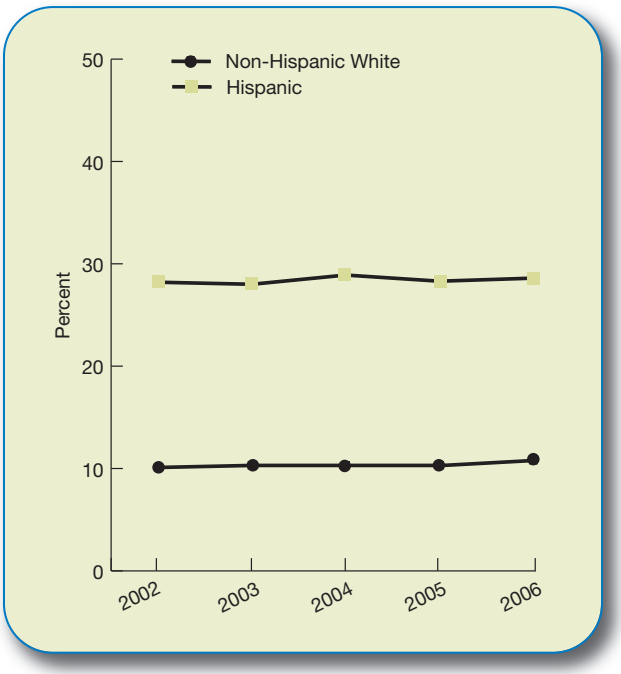
- SES explains some but not all of the differences in the health insurance coverage of racial and ethnic groups in people under age 65 (Figures 3.2 and 3.3).
- Hispanics of every income and education level were significantly less likely than their non-Hispanic peers to have health insurance.
- Blacks who were poor were significantly more likely than their White counterparts to have health insurance (80.3% compared with 68.3%), as were Blacks with less than a high school education (67.7% compared with 58.2%).
- AI/ANs at every income level except poor and every education level except less than high school were significantly less likely to have health insurance than Whites.
- Among people with a high school education, AI/ANs (58.7%) were significantly less likely than Whites (78.7%) to have health insurance. Hispanics (62.8%) also were significantly less likely than non-Hispanic Whites (81.5%) to have health insurance.

- No group has yet achieved the Healthy People 2010 target of 100% of people in the United States having health insurance.

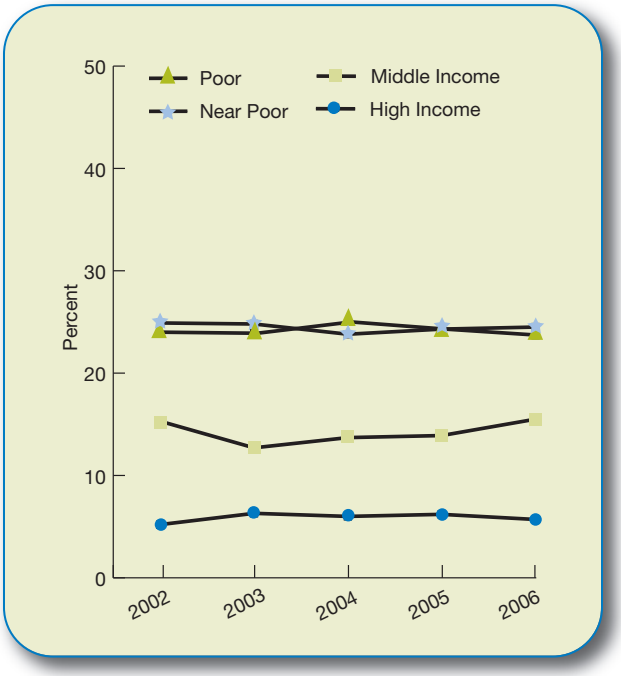
Prolonged periods of uninsurance can have a particularly serious impact on a person's health and stability. Uninsured people often postpone seeking care, have difficulty obtaining care when they ultimately seek it, and may have to bear the full brunt of health care costs. Over time, the cumulative consequences of being uninsured compound, resulting in a population at particular risk for suboptimal health care and health status.

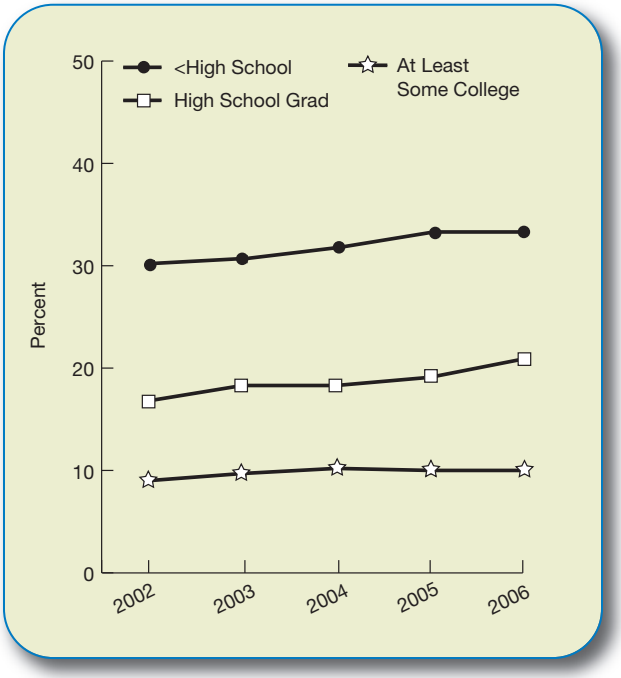
Figure 3.4. People under age 65 who were uninsured all year, by race, ethnicity, income, and education, 2002-2006





- From 2002 to 2006, the gap between Blacks and Whites in the percentage of uninsured people remained the same (Figure 3.4).
- In 2006, Asians were less likely than Whites to be uninsured (12.9% compared with 14.4%), and AI/ANs were more likely than Whites to be uninsured (20.5% compared with 14.4%).
- From 2002 to 2006, the gap between Hispanics and non-Hispanic Whites in the percentage of uninsured people remained the same. In 2006, the percentage of people uninsured all year was still almost three times as high for Hispanics as for non-Hispanic Whites (28.6% compared with 10.8%).
- From 2002 to 2006, the gap between poor people and high-income people in the percentage of uninsured people remained the same. In 2006, the percentage of people uninsured all year was still about four times as high for poor people as for high-income people (23.7% compared with 5.7%).



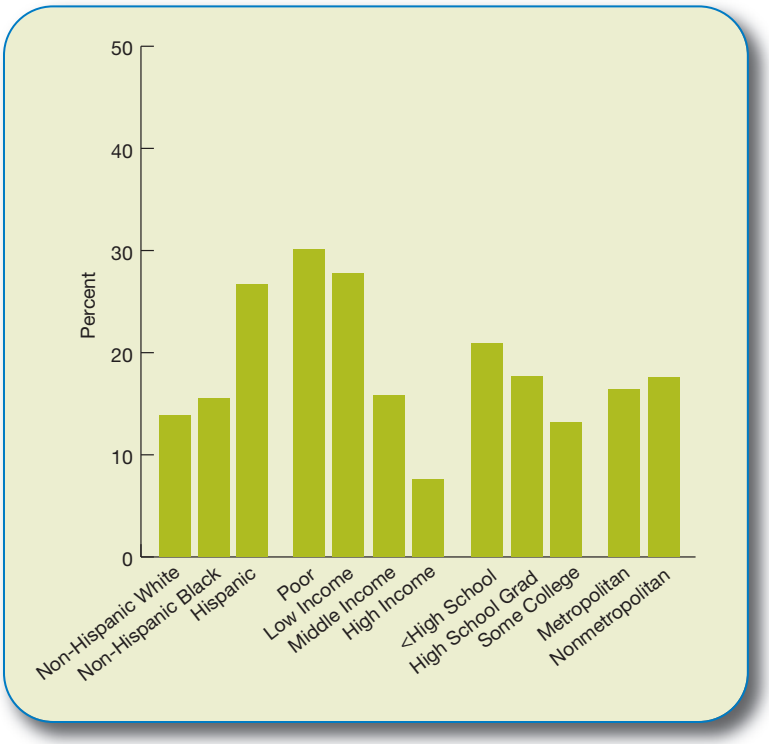


Key: AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2006.
Denominator: Analyses by race, ethnicity, and income performed for civilian noninstitutionalized population under age 65. Analyses by education performed for civilian noninstitutionalized population ages 18-64.
Note: Beginning in 2002, survey respondents could report more than one race. Estimates for racial groups other than Whites and Blacks are significantly affected by this change. Data for these groups are not directly comparable with earlier years and are not shown here. Racial categories shown here exclude multiple-race individuals, who are shown as a separate group.

- From 2002 to 2006, the gap between people with less than a high school education and people with at least some college education in the percentage of uninsured people increased. The percentage of people uninsured all year increased for people with less than a high school education (from 30.2% to 33.3%).

Each year, multivariate analyses are conducted in support of the NHDR to identify the independent effects of race, ethnicity, income, and education on quality of health care. Past reports have listed some of these findings as odds ratios. This year, the NHDR presents the results of a multivariate model as adjusted percentages for this measure: people under age 65 who were uninsured all year. Adjusted percentages show the expected percentage for a given subpopulation after controlling for a number of factors, which include race/ethnicity, family income, education, health insurance status, and geographic location.

Figure 3.5. Adjusted percentages of people under age 65 who were uninsured all year, by race/ethnicity, family income, education, and residence location, 2002-2006.



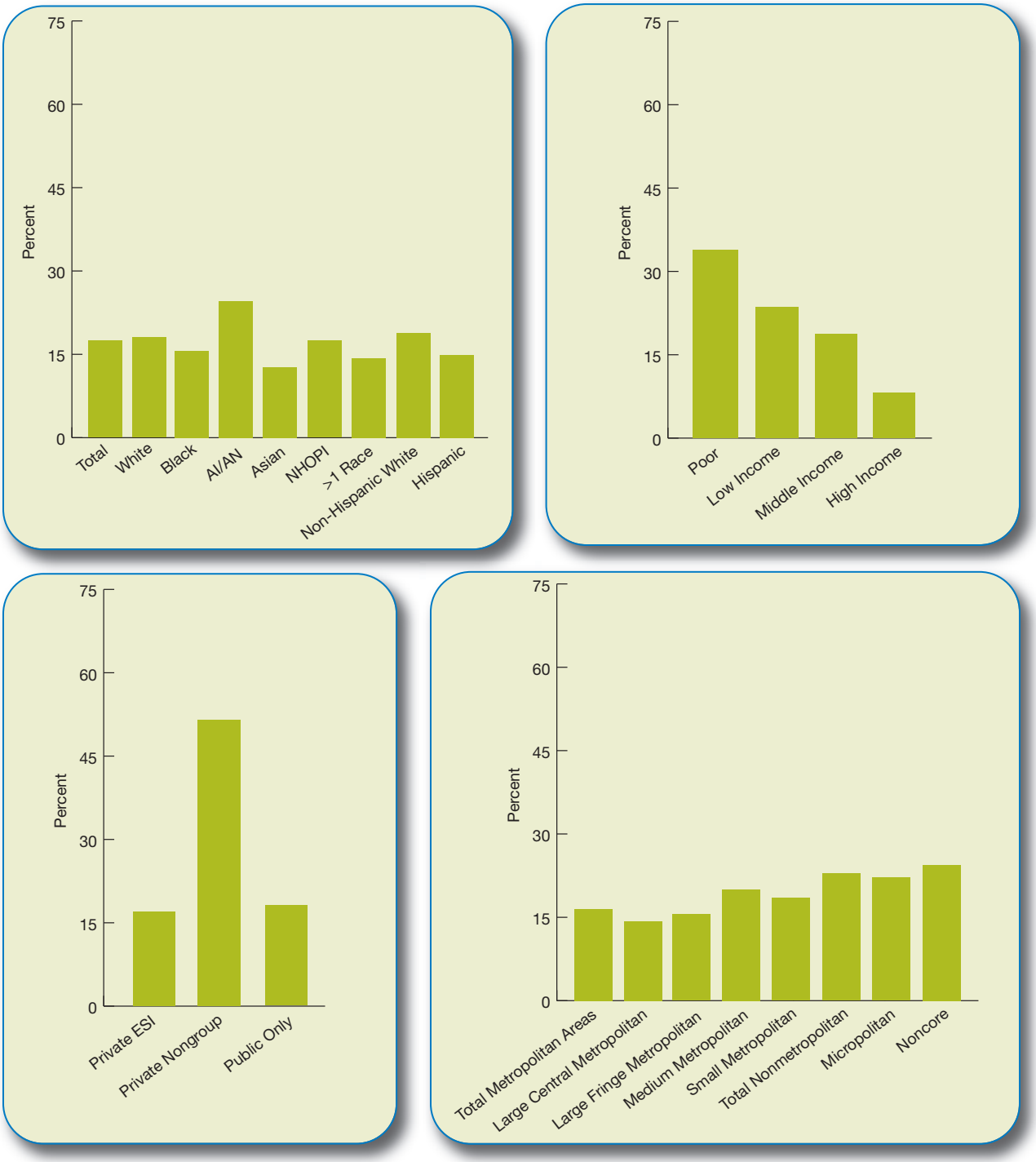
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, pooled 2002-2006 fiscal year files.
Note: Adjusted percentages are predicted marginals from a statistical model that includes the covariates race/ethnicity, family income, education, health insurance, and residence location. Refer to Chapter 1, Introduction and Methods, for more information.

- In the multivariate model used, after adjustment, 15% of non-Hispanic Blacks and 27% of Hispanics would have been uninsured all year compared with 14% of non-Hispanic Whites (Figure 3.5).
- After adjustment, 30% of poor, 28% of low-income, and 16% of middle-income individuals would have been uninsured all year compared with only 8% of those with high income.
- After adjustment, 21% of people with less than a high school education and 18% of high school graduates would have been uninsured all year compared with 13% of those with some college education.
- After adjustment, 18% of people living in nonmetropolitan areas would have been uninsured all year compared with 16% of those living in metropolitan areas.

Financial Burden of Health Care Costs

Health insurance is supposed to protect individuals from the burden of high health care costs. However, even with health insurance, the financial burden for health care can still be high and is increasing.[9] High premiums and out-of-pocket payments can be a significant barrier to accessing necessary medical treatment and preventive care.[10] One way to assess the extent of financial burden is by determining the percentage of family income spent on a family's health insurance premium and out-of-pocket medical expenses.

Figure 3.6. People under age 65 whose family's health insurance premium and out-of-pocket medical expenses were more than 10% of total family income, by race and ethnicity, family income, insurance status, and geographic region, 2006



Key: AI/AN = American Indian or Alaska Native; ESI = employer-sponsored insurance; NHOPI = Native Hawaiian or Other Pacific Islander.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Note: Total financial burden includes premiums and out-of-pocket costs for health care services.

- In 2006, the percentage of people under age 65 whose family's health insurance premium and out-of-pocket medical expenses were more than 10% of total family income was lower for Blacks and Asians than for Whites (15.7% and 12.7%, respectively, compared with 18.0%), and lower for Hispanics than for non-Hispanic Whites (14.9% compared with 18.9%; Figure 3.6).
- The percentage of people under age 65 whose family's health insurance premium and out-of-pocket medical expenses were more than 10% of total family income was about four times as high for poor individuals (33.9%), almost three times as high for low-income individuals (23.6%), and more than twice as high for middle-income individuals (18.8%) compared with high-income individuals (8.2%).
- The percentage of people under age 65 whose family's health insurance premium and out-of-pocket medical expenses were more than 10% of total family income was more than three times as high for individuals with private nongroup insurance as for individuals with private employer-sponsored insurance (51.5% compared with 16.9%). There was no significant difference between publicly insured individuals and individuals with employer-sponsored insurance.
- The percentage of people under age 65 whose family's health insurance premium and out-of-pocket medical expenses were more than 10% of total family income was higher for individuals living in nonmetropolitan areas than for those in metropolitan areas (22.9% compared with 16.5%).
- Among individuals living in metropolitan areas, individuals in medium metropolitan areas (20.0%) and individuals in small metropolitan areas (18.5%) were more likely than individuals living in large central metropolitan areas (14.3%) to have health insurance premium and out-of-pocket medical expenses of more than 10% of total family income.

Usual Source of Care

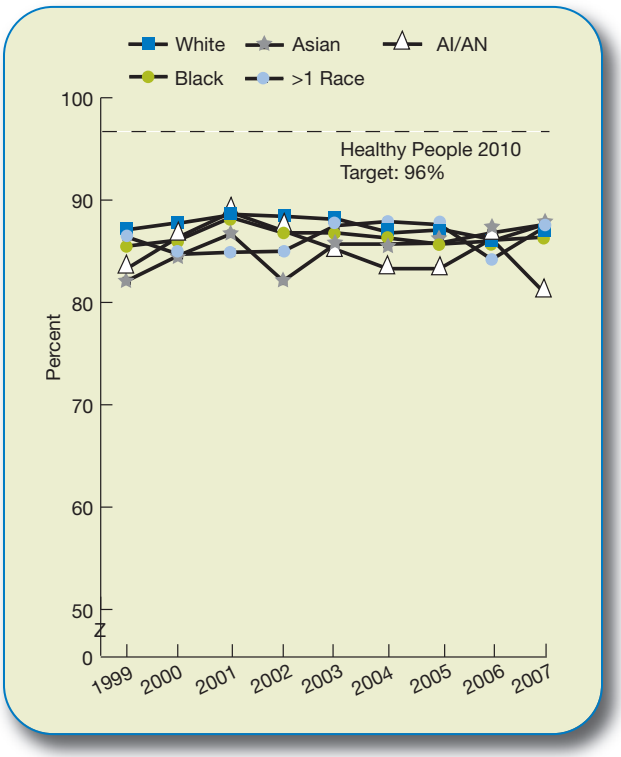
People with a usual source of care (a provider or facility where one regularly receives care) experience improved health outcomes and reduced disparities (smaller differences between groups)[11] and costs.[12] More than 40 million Americans do not have a specific source of ongoing care.[13]

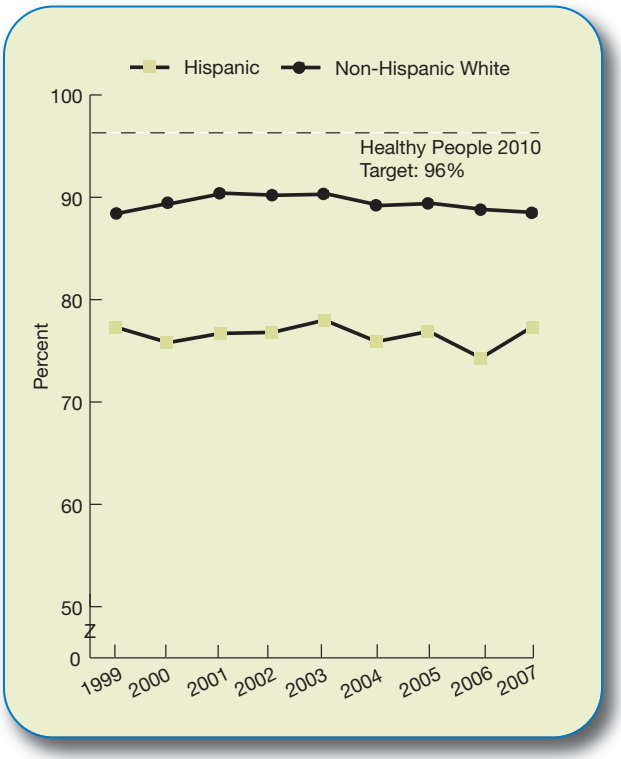
Specific Source of Ongoing Care

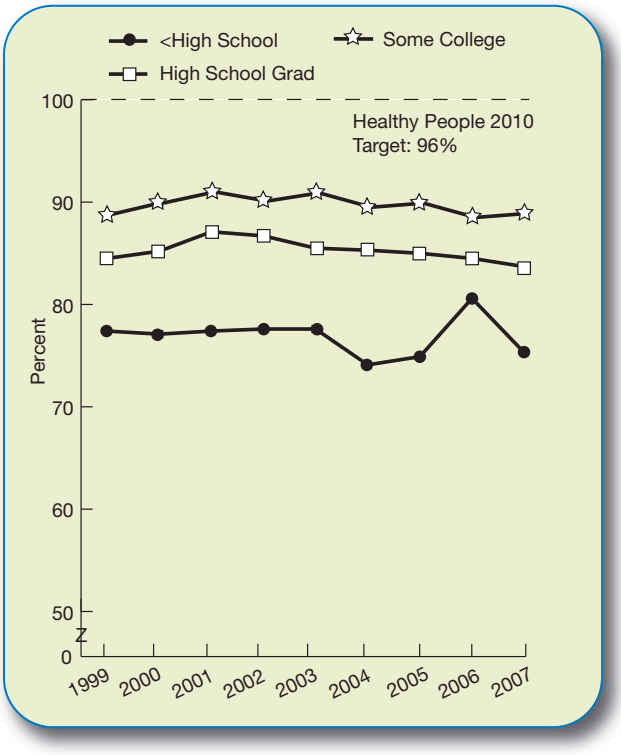
Evidence suggests that the effect on quality of the combination of health insurance and a usual source of care is additive.[14] In addition, people with a usual source of care are more likely to receive preventive health services.*

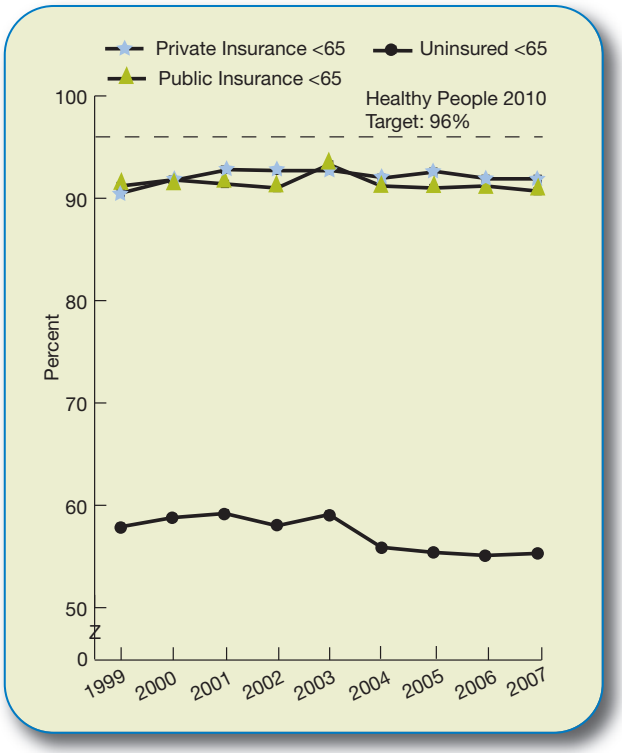
*Refer, for example, to Ettner SL. The timing of preventive services for women and children: the effect of having a usual source of care. Am J Pub Hlth 1996;86:1748-54.

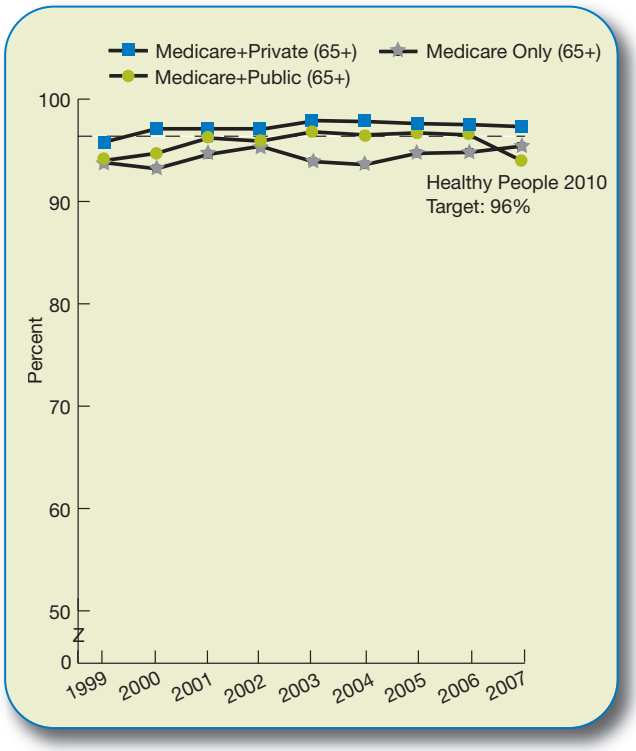
Figure 3.7. People with a specific source of ongoing care, by race, ethnicity, income, education, and insurance status, 1999-2007









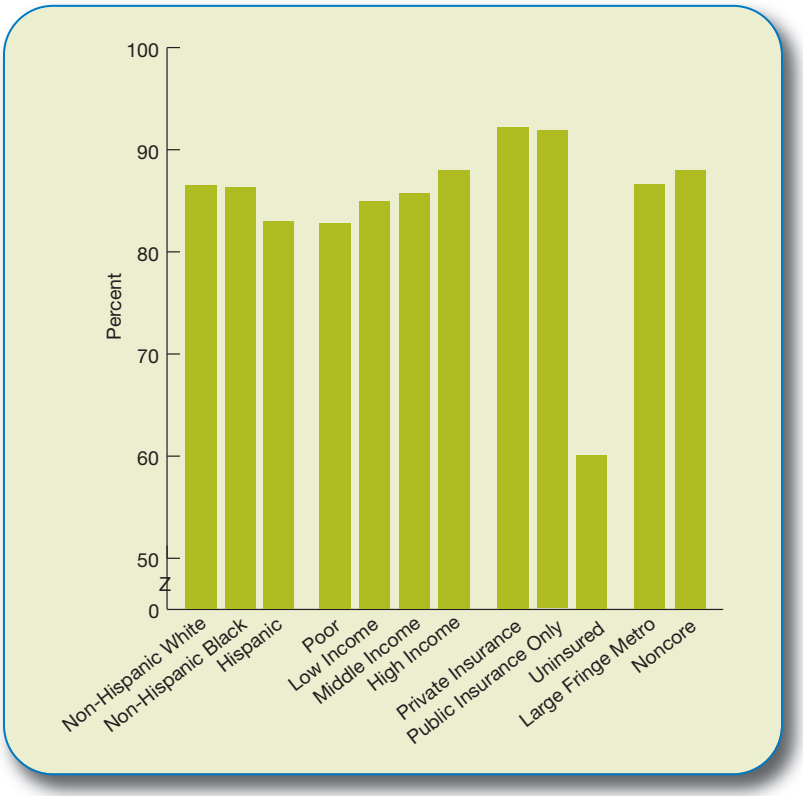


Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 1999-2007.
Denominator: Analyses by race, ethnicity, and income performed for civilian noninstitutionalized population of all ages. Analyses by education performed for civilian noninstitutionalized population ages 25-64.
Note: Measure is age adjusted. Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders.

- From 1999 to 2007, the gap in usual source of care between Hispanics and non-Hispanic Whites remained the same (Figure 3.7). In 2007, the percentage of people with a specific source of ongoing care was significantly lower for Hispanics than for non-Hispanic Whites (77.4% compared with 88.5%).
- During this period, the gap between poor people and high-income people remained the same. In 2007, the percentage of people with a specific source of ongoing care was significantly lower for poor people than for high-income people (79.5% compared with 92.3%).
- Also during this period, for people under age 65, the gap between uninsured people and people with private insurance increased. In 2007, the percentage of people with a specific source of ongoing care was much lower for uninsured people than for people with private insurance (55.3% compared with 91.9%).
- Other than people age 65 and over with Medicare and private insurance, no group has achieved the Healthy People 2010 target of 96% of people in the United States having a specific source of ongoing care.

Each year, multivariate analyses are conducted in support of the NHDR to identify the independent effects of race and SES on quality of health care. Past reports have listed some of these findings as odds ratios. This year, the NHDR presents the results of a multivariate model as adjusted percentages for this measure: people under age 65 with a specific source of ongoing care. Adjusted percentages show the expected percentage for a given subpopulation after controlling for a number of factors, which include race/ethnicity, family income, education, health insurance status, and geographic location.

Figure 3.8. Adjusted percentages of people under age 65 with a specific source of ongoing care, by race/ethnicity, family income, insurance status, and residence location, 2005



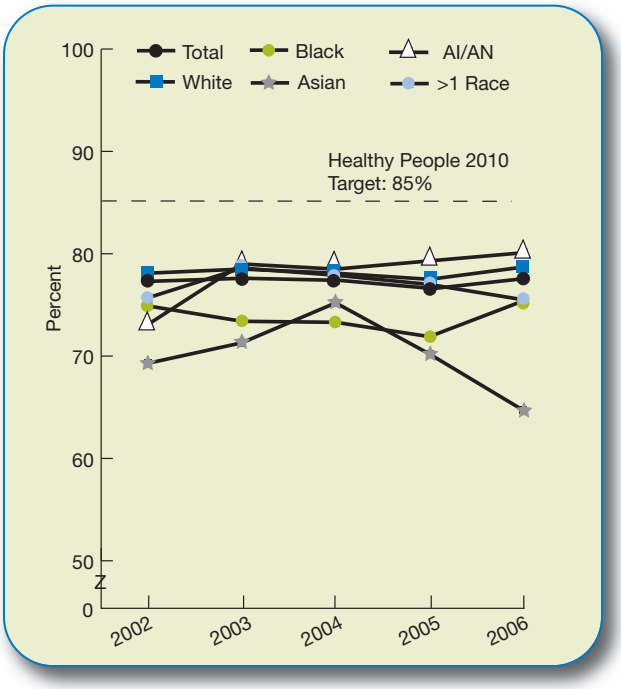
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2005.
Note: Adjusted percentages are predicted marginals from a statistical model that includes the covariates race/ethnicity, family income, education, health insurance, and residence location. Refer to Chapter 1, Introduction and Methods, for more information.

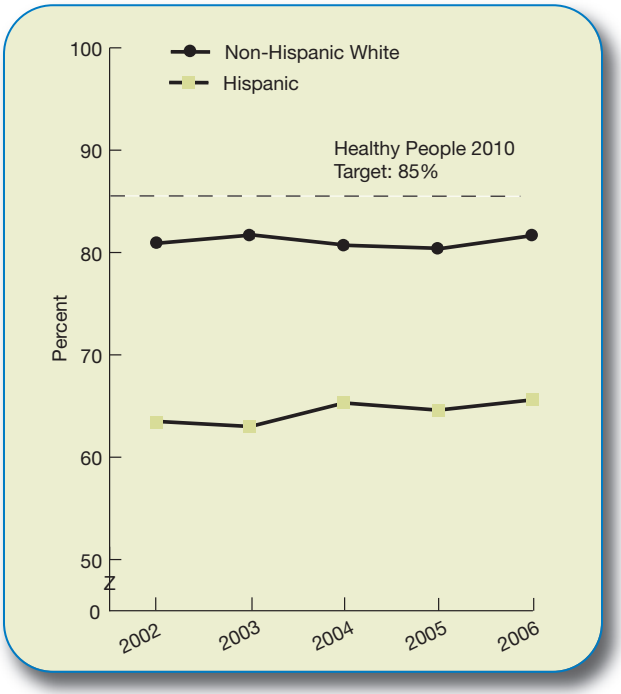
- In the multivariate model used, after adjustment, 83% of Hispanics would have had a specific source of ongoing care compared with 87% of non-Hispanic Whites (Figure 3.8).
- After adjustment, compared with the high-income group (88%), all other income groups would have had a lower percentage with a specific source of ongoing care (poor, 83%; low income, 85%; and middle income, 86%).
- After adjustment, only 60% of those who were uninsured all year would have had a specific source of ongoing care compared with 92% of those with private insurance.
- After adjustment, 88% of those living in noncore areas would have had a specific source of ongoing care compared with 87% of those living in large fringe metropolitan areas.

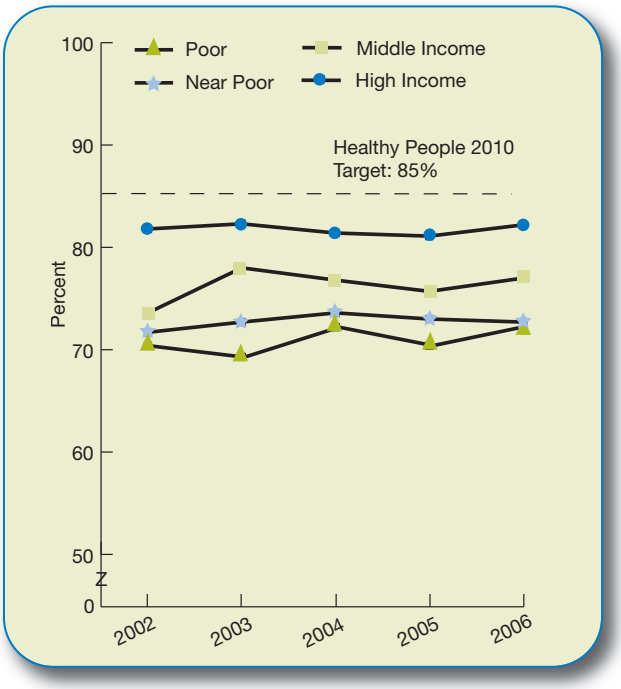
Usual Primary Care Provider

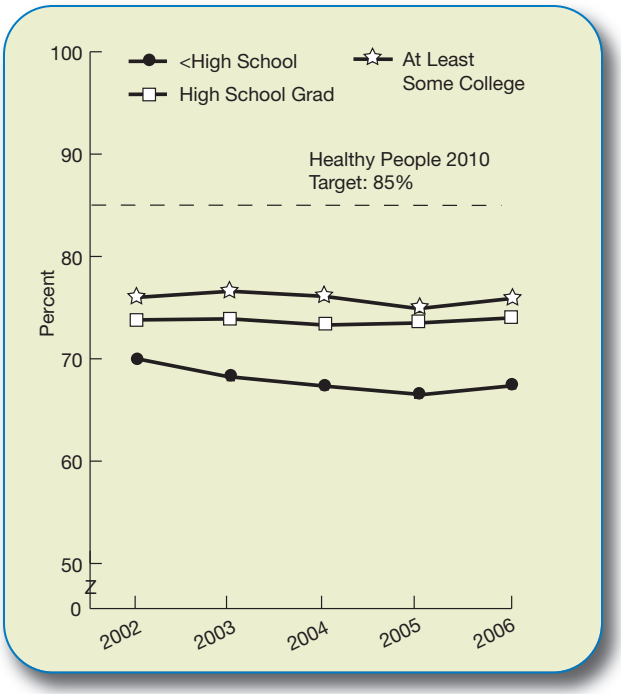
Having a usual primary care provider (a doctor or nurse from whom one regularly receives care) is associated with patients' greater trust in their provider[15] and with good provider-patient communication. These factors increase the likelihood that patients will receive appropriate care.[16] By learning about patients' diverse health care needs over time, a usual primary care provider can coordinate care (e.g., visits to specialists) to better meet patients' needs.[17] Having a usual primary care provider correlates with receipt of higher quality care.[18, 19]

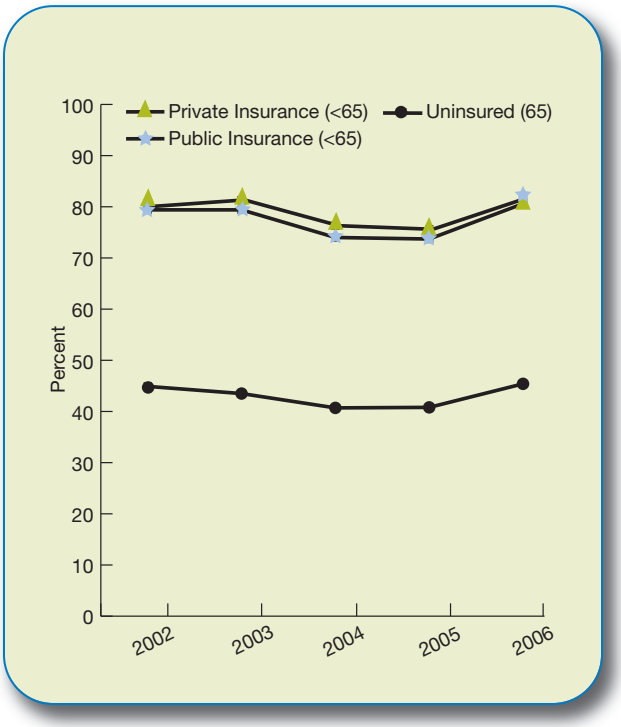
Figure 3.9. People with a usual primary care provider, by race, ethnicity, family income, education, and insurance status, 2002-2006

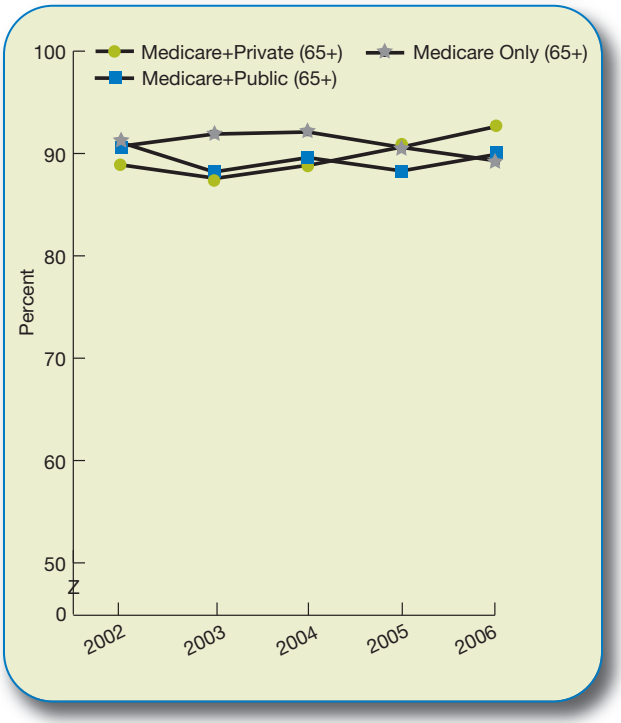












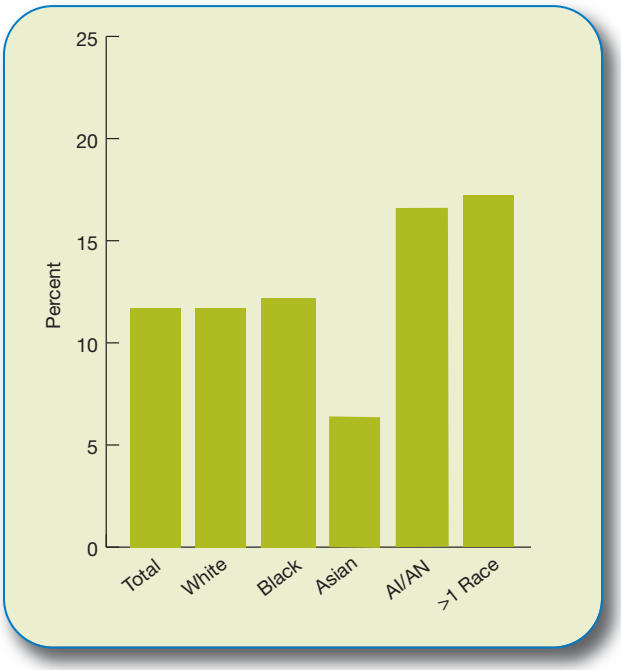
Key: AI/AN = American Indian or Alaska Native.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2006.
Denominator: Analyses by race, ethnicity, and income performed for civilian noninstitutionalized population of all ages. Analyses by education performed for civilian noninstitutionalized population age 18 and over.
Note: A usual primary care provider is defined as the source of care that a person usually goes to for new health problems, preventive health care, and referrals to other health professionals. Data are age adjusted. Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders.

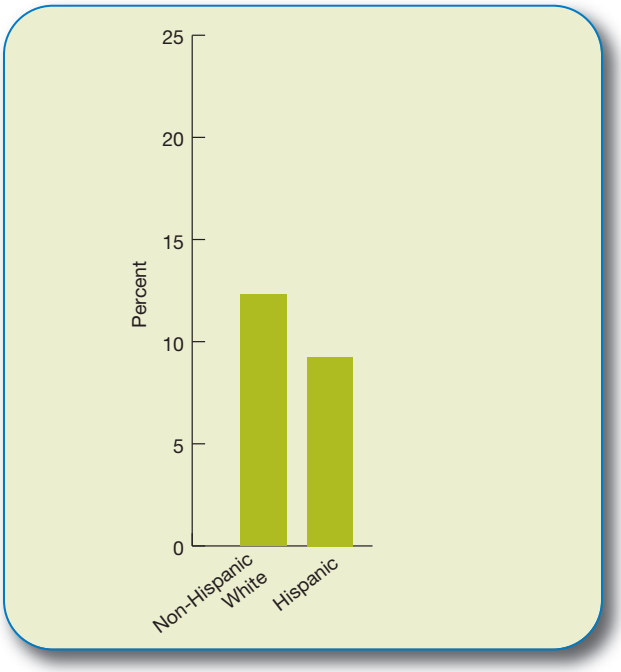
- From 2002 to 2006, the gap between Blacks and Whites remained the same. In 2006, Blacks were less likely than Whites to have a usual primary care provider (75.4% compared with 78.7%; Figure 3.9).
- In 2006, Asians were less likely than Whites to have a usual primary care provider (64.7% compared with 78.7%).
- The gap between Hispanics and non-Hispanic Whites remained the same. In 2006, the percentage of people with a usual primary care provider was significantly lower for Hispanics than for non-Hispanic Whites (65.6% compared with 81.7%).
- The gap between poor people and high-income people remained the same. In 2006, the percentage of people with a usual primary care provider was significantly lower for poor people than for high-income people (72.3% compared with 82.2%).
- The gap between people with less than a high school education and people with at least some college education remained the same. In 2006, the percentage of people with a usual primary care provider was significantly lower for people with less than a high school education than for people with some college education (67.4% compared with 75.9%).
- From 2002 to 2006, for people under age 65, the gap between uninsured people and people with private insurance remained the same. In 2006, uninsured people were almost half as likely as people with private insurance to have a usual primary care provider (45.4% compared with 80.6%).
- During this period, for people age 65 and over, the gap between people with Medicare only and people with Medicare and private insurance remained the same. In 2006, people with Medicare only were less likely than people with Medicare and private insurance to have a usual primary care provider (89.3% compared with 92.7%).
- With the exception of people age 65 and over with Medicare insurance coverage, no group has achieved the Healthy People 2010 target of 85% of Americans with a usual primary care provider.

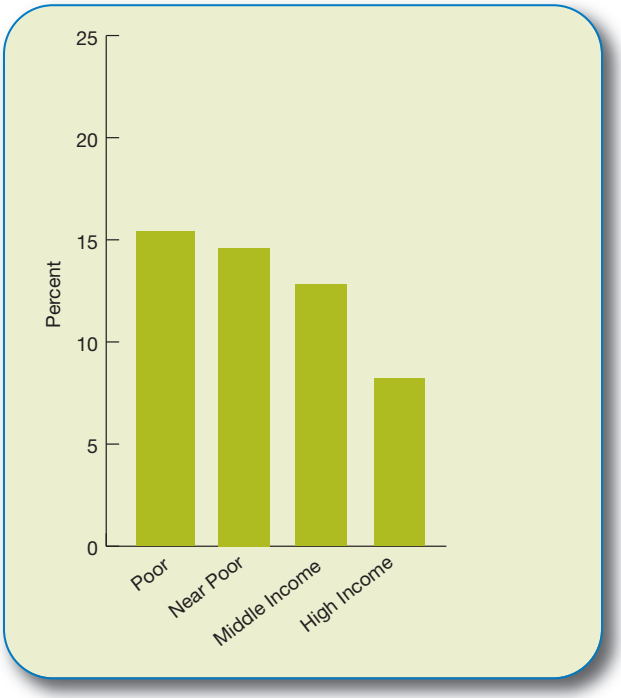
Patient Perceptions of Need

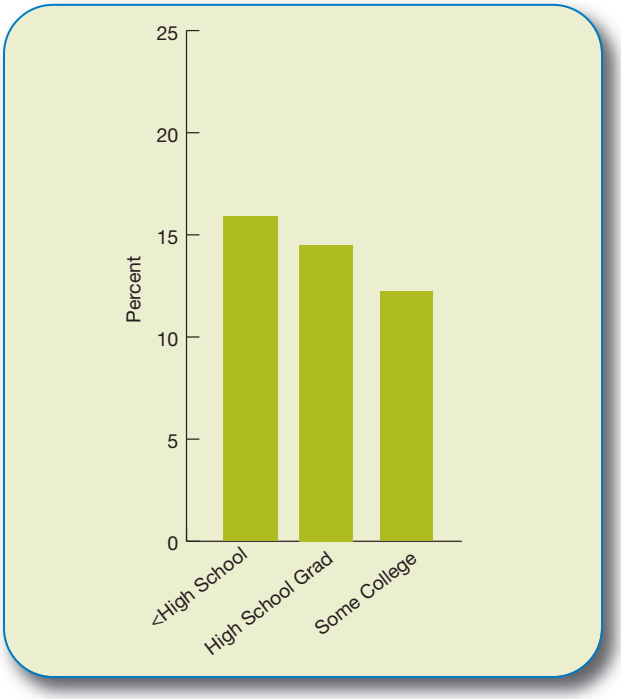
Patient perceptions of need include perceived difficulties or delays in obtaining care and problems getting care as soon as it is wanted. Although patients may not always be able to assess their need for care, problems getting care when patients perceive that they are ill or injured likely reflect significant barriers to care.

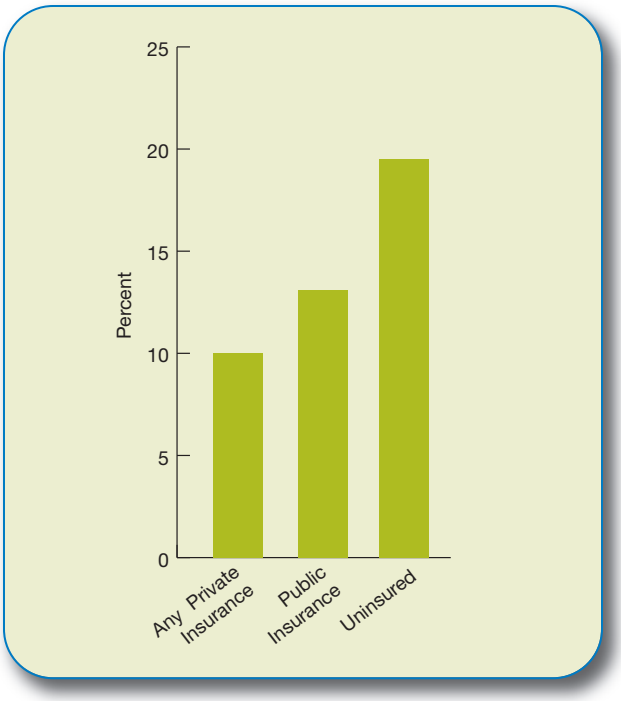
Figure 3.10. People who were unable to get or delayed in getting needed medical care, dental care, or prescription medicines in the last 12 months, by race, ethnicity, income, education, and insurance status, 2006











Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Analyses by race, ethnicity, income, and insurance performed for civilian noninstitutionalized population, all ages. Analyses by education performed for civilian noninstitutionalized population age 18 and over.

- The percentage of people who were unable to get or delayed in getting needed medical care, dental care, or prescription medicines was lower for Asians than for Whites (6.4% compared with 11.7%; Figure 3.10) and higher for people of multiple race than for Whites (17.2% compared with 11.7%).
- The percentage of people who were unable to get or delayed in getting needed medical care, dental care, or prescription medicines was lower for Hispanics than for non-Hispanic Whites (9.3% compared with 12.3%).
- The percentage of people who were unable to get or delayed in getting needed medical care, dental care, or prescription medicines was significantly higher for poor (15.4%), near-poor (14.6%), and middle-income (12.8%) people than for high-income people (8.2%).
- For people under age 65, the percentage of people who were unable to get or delayed in getting needed medical care, dental care, or prescription medicines was almost two times as high for people with no health insurance as for people with private insurance (19.5% compared with 10%). The percentage was about 1½ times that of people with public insurance (19.5% compared with 13.1%).
- For people age 65 and over, the percentage of people who were unable to get or delayed in getting needed medical care, dental care, or prescription medicines was higher for people with Medicare only (13.1%) and people with Medicare and public insurance (14.1%) than for people with Medicare and private insurance (8.9%; data not shown).

Health Care Utilization

Measures of health care utilization complement patient reports of barriers to care and permit a fuller understanding of access to care. Barriers to care that are associated with differences in health care utilization may have a more significant impact on health care quality than other factors. Landmark reports on

disparities have relied on measures of health care utilization,[1, 20] and these data demonstrate some of the largest differences in care among diverse groups. More recent efforts to inform health care delivery continue to include measures of health care utilization.[21]

Interpreting health care utilization data is more complex than analyzing data on patient perceptions of access to care. Along with access to care, health care utilization is strongly affected by health care need and patient preferences and values. In addition, greater use of services does not necessarily indicate better care. In fact, high use of some inpatient services may reflect impaired access to outpatient services.

Tables 3.1a and 3.1b summarize facilitators and barriers to care for various racial, ethnic, and socioeconomic groups. Tables 3.2a and 3.2b summarize findings on all core measures related to health care utilization. Because of the many factors that affect health care utilization, the key to symbols used in Tables 3.2a and 3.2b is different from that used for Tables 3.1a and 3.1b. Rather than indicating better or worse access compared with the comparison group, symbols on the utilization tables simply identify the amount of care received by racial or ethnic minority and socioeconomic groups relative to their comparison groups.

In 2006, the Nation's 14 million health services workers[22] provided care at about 960 million office visits[23] and 673 million hospital outpatient visits[24] and treated 37 million hospitalized patients[24] and 1.4 million nursing home residents.[25] Each year, about 70% of the civilian noninstitutionalized population visits a medical provider's office or outpatient department, about 60% receives a prescription medication, and about 40% visits a dental provider.[26]

National health expenditures totaled more than $2 trillion in fiscal year 2006, nearly double those of a decade earlier.[27] Health expenditures among the civilian noninstitutionalized population in America are extremely concentrated, with 5% of the population accounting for 55% of outlays.[28] In addition, a study using earlier data estimated that as much as $420 billion a year—almost one-fourth of all health care expenditures—are the result of low-quality care, including overuse, misuse, and waste.[29]

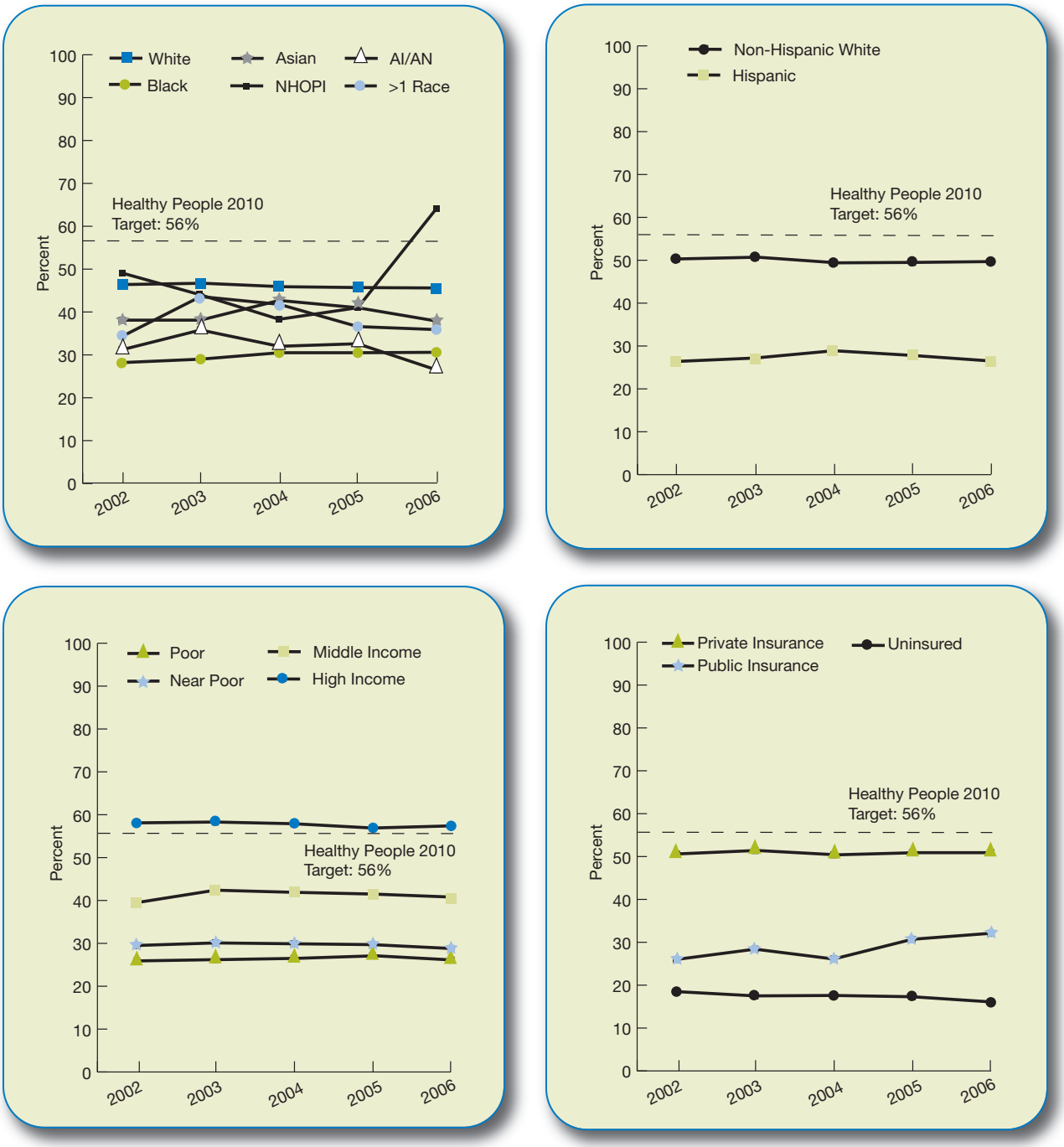
Previous NHDRs reported that different racial, ethnic, and socioeconomic groups had different patterns of health care utilization. Asians and Hispanics tended to have lower use of most health care services, including routine care, emergency department visits, avoidable admissions, and mental health care. Blacks tended to have lower use of routine care, outpatient mental health care, and outpatient HIV care. Blacks had higher use of emergency departments and hospitals, including higher rates of avoidable admissions, inpatient mental health care, and inpatient HIV care. Individuals with lower SES tended to have lower use of routine care and outpatient mental health care and higher use of emergency departments, hospitals, and home heath care.

This section highlights findings related to dental care, emergency department visits, potentially avoidable admissions, and mental health care and substance abuse treatment.

Dental Visits

Regular dental visits promote prevention, early diagnosis, and optimal treatment of oral diseases and conditions. Failure to visit the dentist can result in delayed diagnosis, overall compromised health, and, occasionally, even death.[14]

Figure 3.11. People who had a dental visit in the calendar year, by race, ethnicity, income, and insurance status, 2002-2006

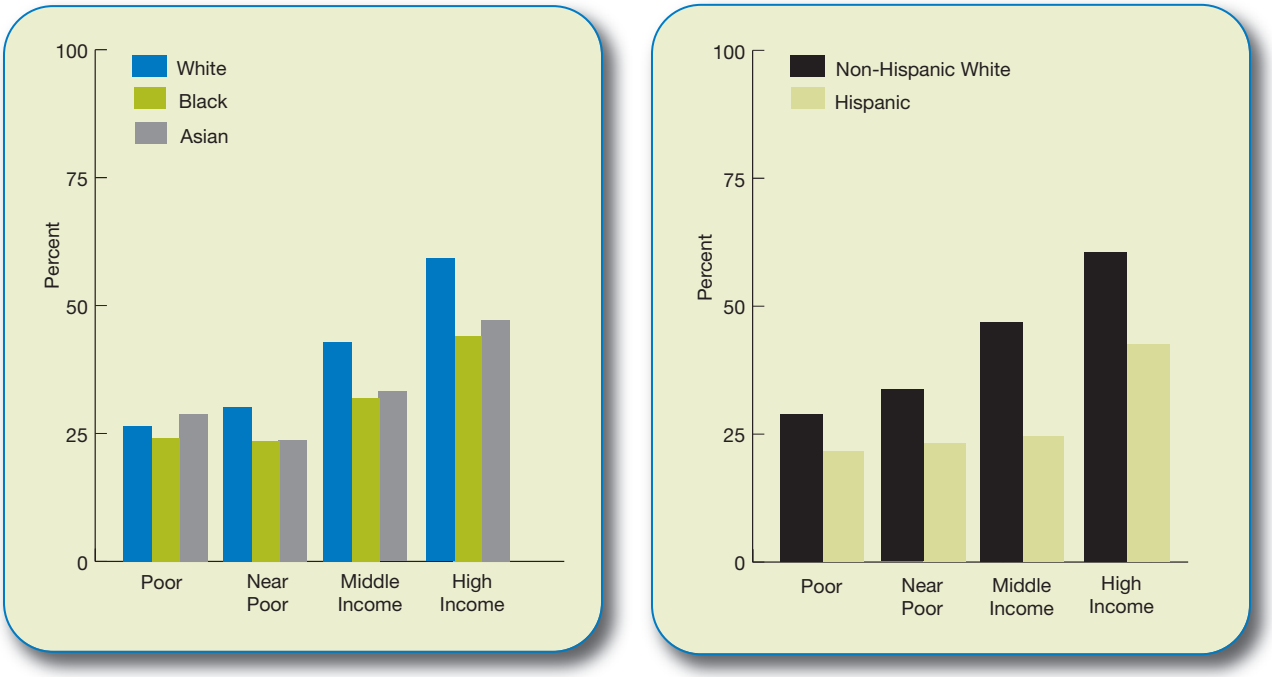


Key: AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2006.
Denominator: Analyses by race, ethnicity, and income performed for civilian noninstitutionalized population, all ages.

- There were no statistically significant changes in the percentage of people with a dental visit in the calendar year from 2002 to 2006 across racial, ethnic, or income categories (Figure 3.11).
- From 2002 to 2006, the gap between Blacks and Whites in the percentage of people with a dental visit in the calendar year remained the same. In 2006, the percentage was significantly lower for Blacks than for Whites (30.6% compared with 45.6%). The gap between NHOPIs and Whites was not statistically significant.
- During the same period, the gap between Hispanics and non-Hispanic Whites remained the same. In 2006, the percentage was significantly lower for Hispanics than for non-Hispanic Whites (26.5% compared with 49.7%).
- In 2006, the gap between poor people and high-income people remained the same. The percentage was significantly lower for poor (26.1%), near-poor (28.8%), and middle-income people (40.8%) than for high-income people (57.4%).
- Only NHOPIs and high-income people met the Healthy People 2010 target of 56% of people with a dental visit in the past year.
- From 2002 to 2006, the gap between people with public insurance and people with private insurance decreased. However, people with public insurance were still less likely than people with private insurance to have had a dental visit in the calendar year (32.1% compared with 50.9%).
- During this period, the gap between uninsured people and people with private insurance remained the same. People who were uninsured were about two-thirds less likely than people with private insurance to have had a dental visit in the calendar year (16.1% compared with 50.9%).

To distinguish the effects of race, ethnicity, and SES on health care utilization and to identify populations at greatest risk for barriers to health care utilization, this measure is stratified by income.

Figure 3.12. People who had a dental visit in the calendar year, by race and ethnicity, stratified by income, 2006



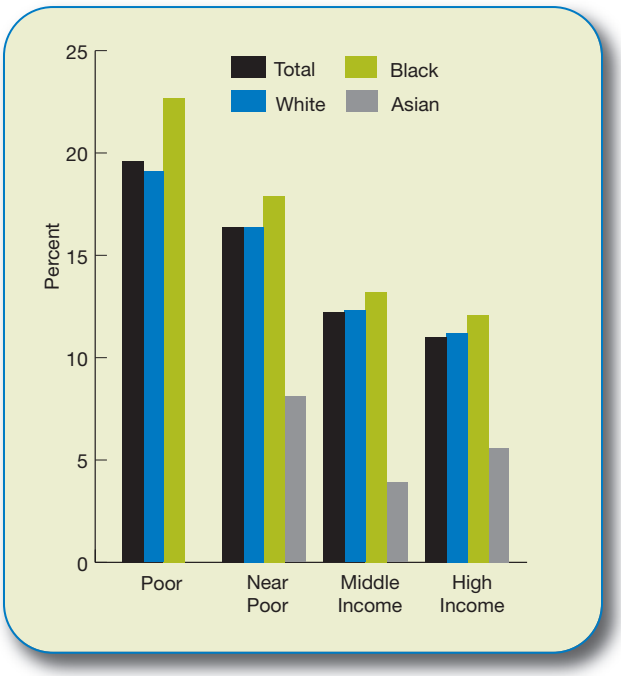
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population, all ages.
Note: Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders and for American Indians and Alaska Natives.

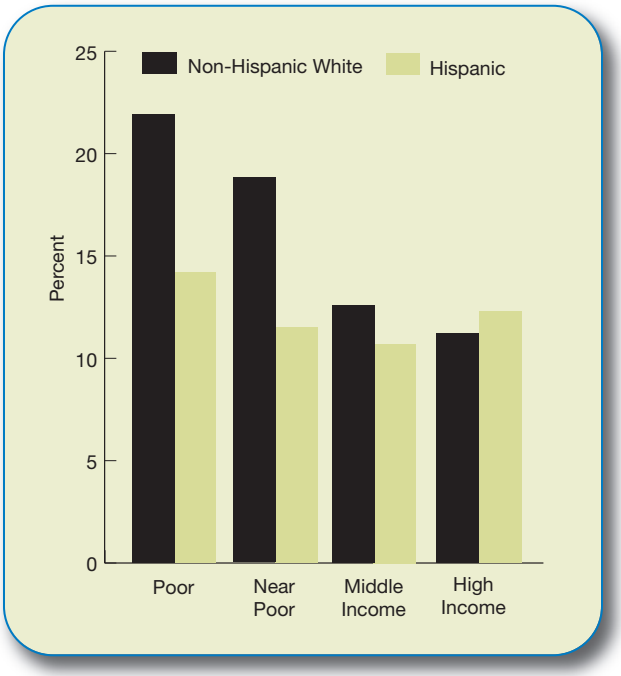
- SES explains some, but not all, of the racial and ethnic differences in rates of dental visits (Figure 3.12).
- In all income categories except for poor, Blacks were significantly less likely than Whites to have had a dental visit in the calendar year (near poor, 23.5% for Blacks versus 30.1% for Whites; middle income, 32.0% for Blacks versus 42.9% for Whites; and high income, 44.1% for Blacks versus 59.2% for Whites).
- Hispanics at every income level were significantly less likely than non-Hispanic Whites to have had a dental visit (poor, 21.6% of Hispanics versus 28.9% of non-Hispanic Whites; near poor, 23.1% of Hispanics versus 33.6% of non-Hispanic Whites; middle income, 24.6% of Hispanics versus 46.8% of non-Hispanic Whites; and high income, 42.6% of Hispanics versus 60.5% of non-Hispanic Whites).

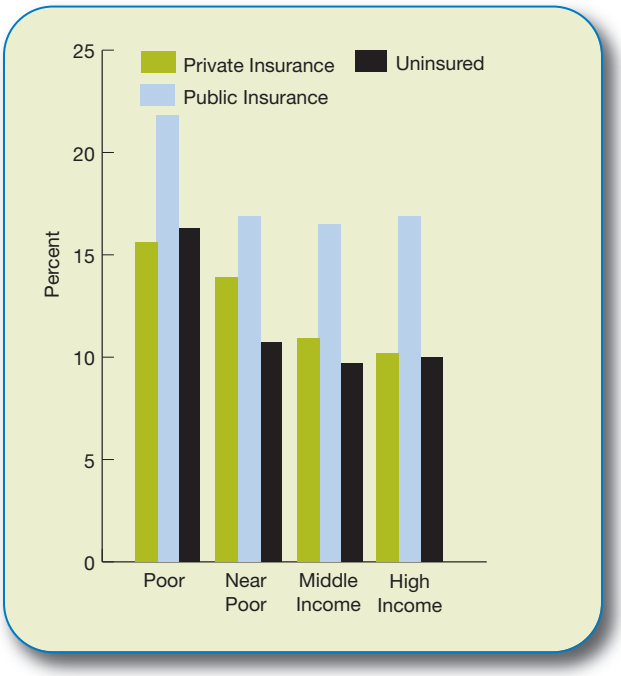
Emergency Department Visits

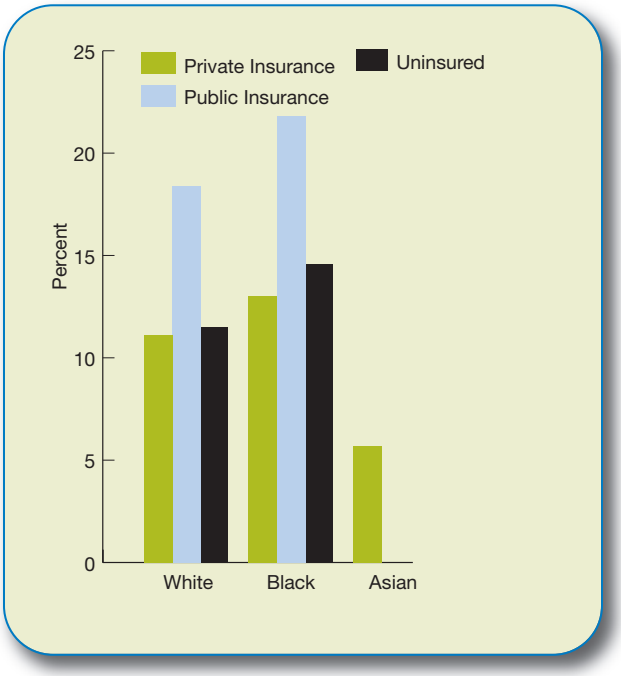
Without good access to health care, people sometimes resort to using the emergency department (ED) when care is needed. A high rate of ED visits may suggest that a population lacks access to preventive and routine care and other avenues of treatment. Delaying care until the need is urgent often results in poorer health outcomes and increased health care costs. It should be noted that high rates of ED visits, however, may also be the result of varying levels of patient need or preferences.

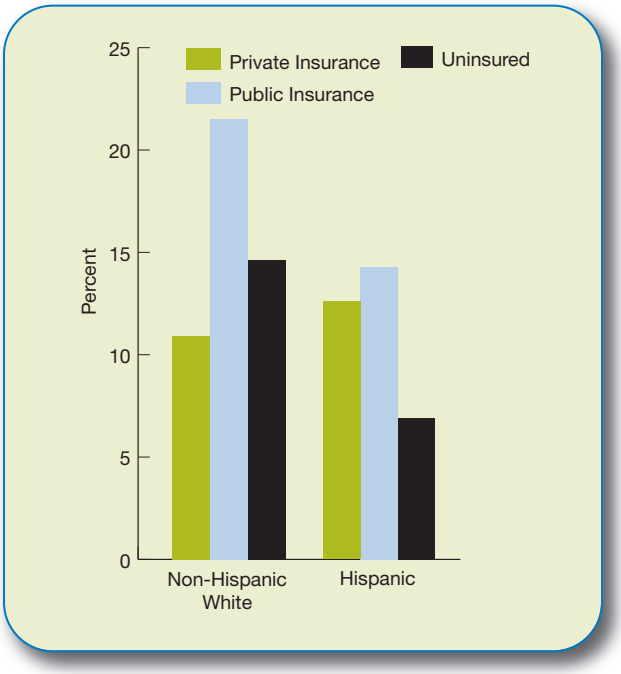
Figure 3.13. People who had a hospital emergency room visit in the calendar year, by race and income, ethnicity and income, insurance and income, insurance and race, and insurance and ethnicity, 2006











Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population, all ages.
Note: Estimates are based on self-report of emergency room visits. Data did not meet criteria for statistical reliability for Native Hawaiians and Other Pacific Islanders, poor Asians, Asians with public insurance or no insurance, or American Indians and Alaska Natives.

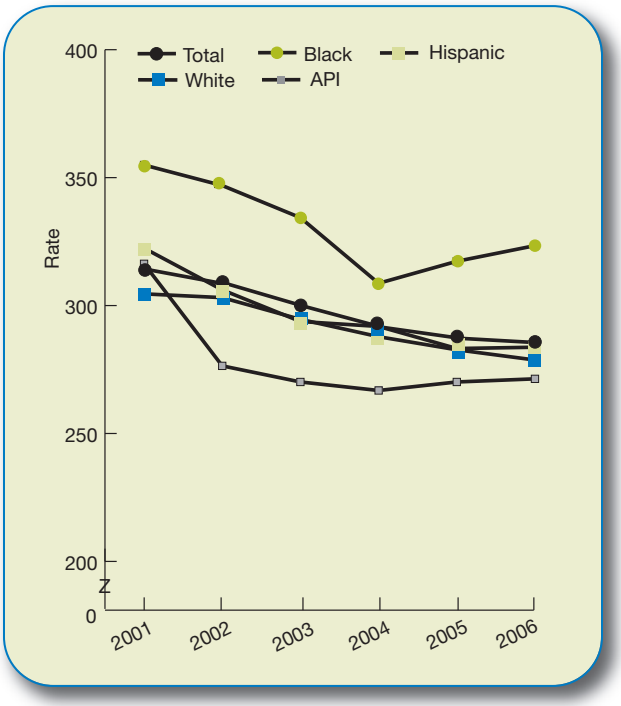
- From 1997-1998 to 2005-2006, the percentage of ED visits remained the same except for Blacks (data not shown).
- In 2006, Blacks were more likely to report that they had a hospital emergency room visit than Whites (16.4% compared with 13.3%; data not shown). Poor Blacks were also more likely than poor Whites to report that they had a hospital emergency room visit (22.7% compared with 19.1%; Figure 3.13).
- Asians were less likely to report that they had a hospital emergency room visit than Whites (5.5% compared with 13.3%; data not shown). Asians at every income level except poor were also less likely than their White counterparts to report that they had a hospital emergency room visit (near poor, 8.1% compared with 16.4%; middle income, 3.9% compared with 12.3%; high income, 5.6% compared with 11.2%).
- Hispanics were less likely to report that they had a hospital emergency room visit than Whites (12% compared with 13.6%; data not shown). Poor and near-poor Hispanics were also less likely than their White counterparts to report that they had a hospital emergency room visit (poor, 14.2% compared with 21.9%; near poor, 11.5% compared with 18.8%).
- Poor people were almost twice as likely as people with high income to report that they had a hospital emergency room visit (19.6% compared with 11%). Near-poor people were also more likely to report that they had a hospital emergency room visit than high-income people (16.4% compared with 11%).
- People with public insurance were almost twice as likely as people with private insurance to report that they had a hospital emergency room visit (19.1% compared with 11.1%; data not shown).
- Among people with private insurance, Asians were less likely than Whites to report that they had a hospital emergency room visit (5.7% compared with 11.1%).

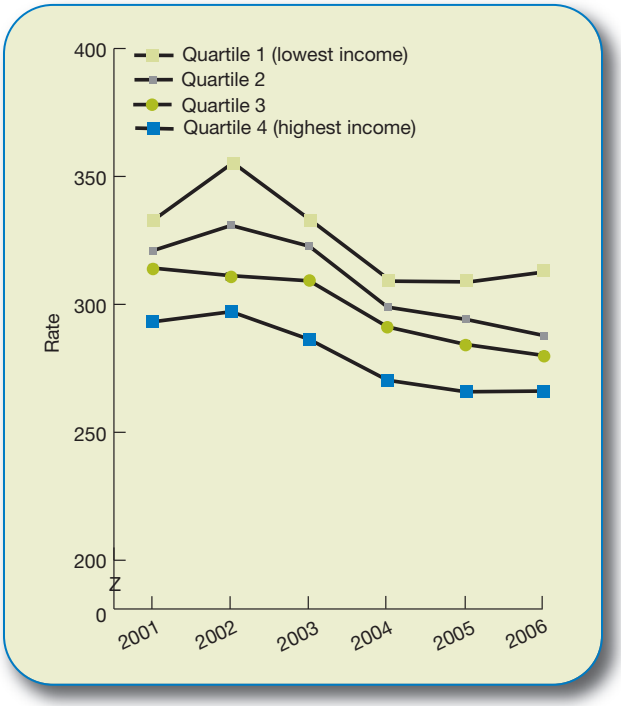
- Among people with public insurance, Blacks were more likely than Whites to report that they had a hospital emergency room visit (21.8% compared with 18.4%) and Hispanics were less likely than non-Hispanic Whites to report a hospital emergency room visit (14.3% compared with 21.5%).
- Among people with no insurance, Hispanics were less likely than non-Hispanic Whites to report that they had a hospital emergency room visit (6.9% compared with 14.6%).

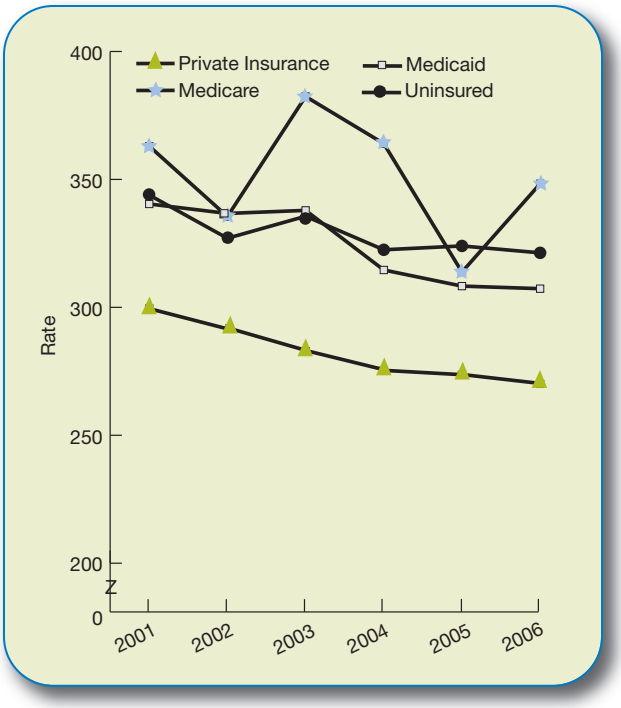
Potentially Avoidable Admissions

Potentially avoidable admissions are hospitalizations that might have been averted by good outpatient care. They relate to conditions for which good outpatient care can prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease. Although all admissions for these conditions cannot be avoided, rates in populations tend to vary with access to primary care.[30] For example, better access to care should reduce the percentage of appendicitis admissions in which rupture has occurred.

Figure 3.14. Perforated appendixes per 1,000 admissions with appendicitis, by race/ethnicity, area income (median income of ZIP Code of residence), and insurance status, 2001-2006







Key: API = Asian or Pacific Islander.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2001-2006.
Denominator: Patients hospitalized with appendicitis, age 18 and over.
Note: White, Black, and API are non-Hispanic groups. Quartile income categories are used instead of the NHDR's usual descriptive categories because that is how data are collected for this measure. Quartile 1 corresponds to the lowest income quartile, and Quartile 4 corresponds to the highest income quartile. Income categories are based on the median household income of the ZIP Code of the patient's residence. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 25 States that have 66% of the U.S. resident population. Data for American Indians and Alaska Natives from the National Patient Information Reporting System can be found in Chapter 4 but are not collected by this data source.

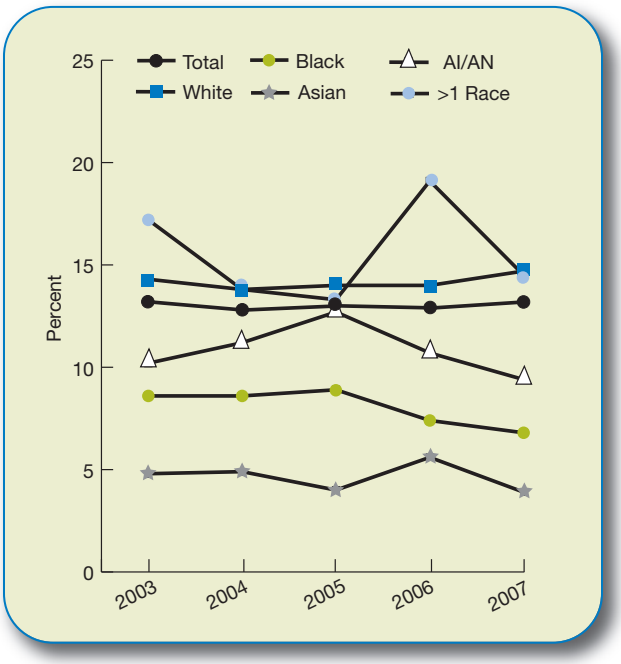
- From 2001 to 2006, the gap between Blacks and Whites in the rate of hospital admissions for perforated appendix did not change significantly (Figure 3.14). In 2006, Blacks had a higher rate than Whites (323.4 per 1,000 compared with 278.7 per 1,000).
- In 2006, APIs and Whites were not significantly different in the rate of hospital admissions for perforated appendix.
- In 2006, there was no statistically significant difference between Hispanics and Whites (283.7 per 1,000 compared with 278.7 per 1,000).
- From 2001 to 2006, the gap between people living in poor communities (Quartile 1) and those living in high-income communities (Quartile 4) in the rate of hospital admissions for perforated appendix increased. In 2006, people living in poor communities (Quartile 1) had a higher rate than those living in high-income communities (312.8 per 1,000 compared with 266.1 per 1,000).
- In 2006, Medicare beneficiaries (348.3 per 1,000), Medicaid beneficiaries (307.3 per 1,000), and people without insurance (321.3 per 1,000) had higher rates of hospital admissions for perforated appendix than people with private insurance (270.1 per 1,000).

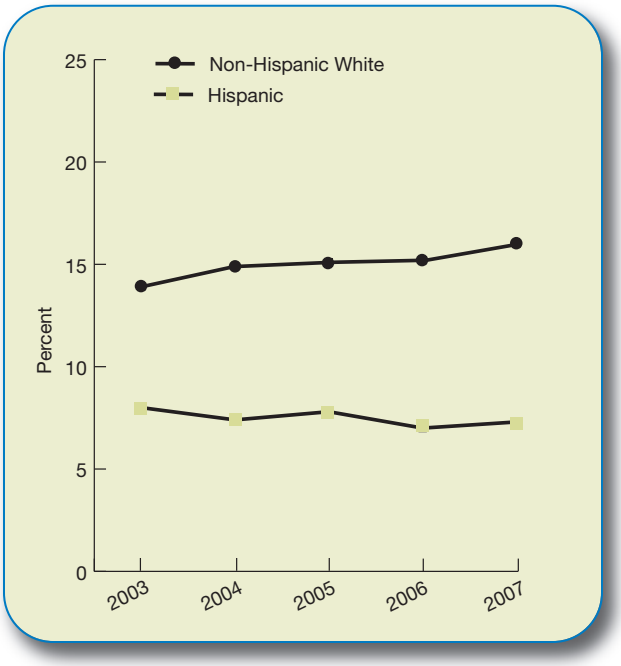
Mental Health Care and Substance Abuse Treatment

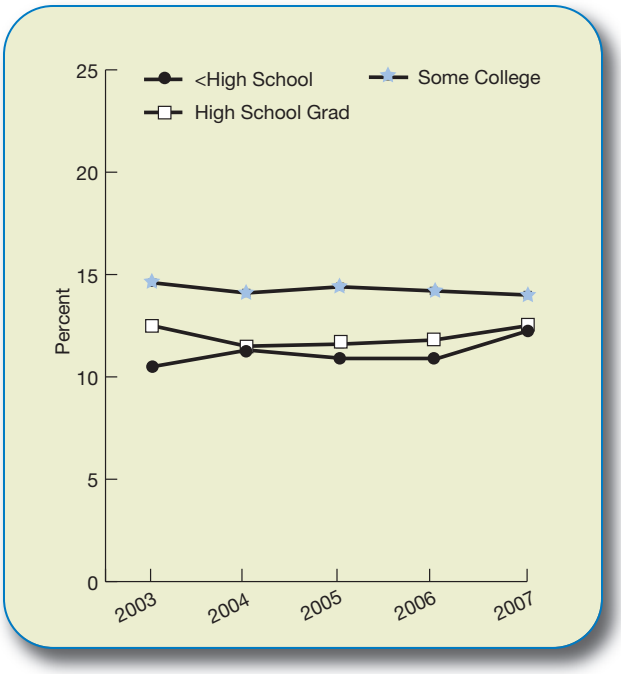
Mental Health Care

Although the prevalence of mental disorders for racial and ethnic minorities in the United States is similar to that for Whites,[31] minorities have less access to mental health care and are less likely to receive needed services.[32] Differences in receipt of services also may reflect, in part, variation in preferences and cultural attitudes toward mental health.[32]

Figure 3.15. Adults who received mental health treatment or counseling in the last 12 months, by race, ethnicity, and education, 2003-2007







Key: AI/AN = American Indian or Alaska Native.
Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2003-2007.
Denominator: U.S. population age 18 and over.
Note: Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders.

- From 2003 to 2007, the gap between Blacks and Whites increased (Figure 3.15). In 2007, Blacks were significantly less likely than Whites to receive mental health treatment or counseling (6.8% compared with 14.7%).
- During this period, the gap between AI/ANs and Whites remained the same. In 2007, AI/ANs were less likely than Whites to receive mental health treatment or counseling (9.4% compared with 14.7%).
- The gap between Asians and Whites in the percentage of people who received mental health treatment or counseling remained the same. In 2007, the percentage of Asians was less than one-third of the percentage of Whites (3.9% compared with 14.7%).
- The gap between Hispanics and non-Hispanic Whites increased. In 2007, the percentage of Hispanics was less than half that of non-Hispanic Whites (7.3% compared with 16.0%).
- The gap in mental health service use between people with less than a high school education and people with some college education remained the same. In 2007, the percentage was lower for people with less than a high school education (12.3%) and for high school graduates (12.5%) than for people with some college education (14.0%).

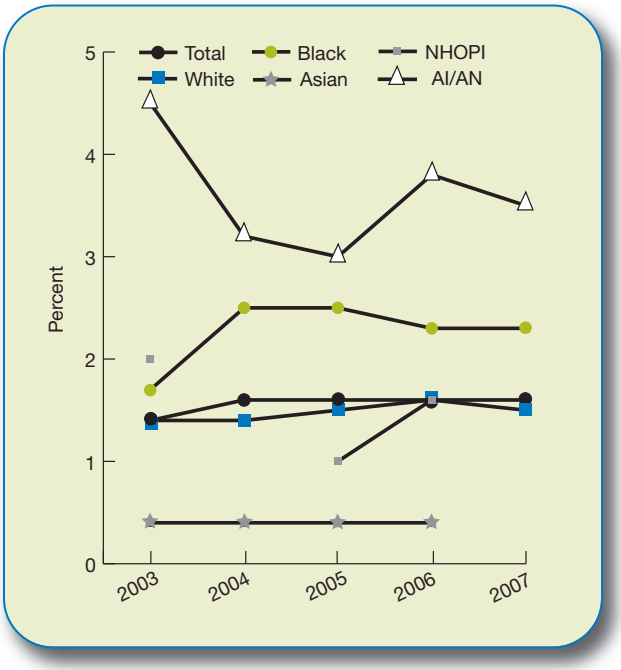
Substance Abuse Treatment

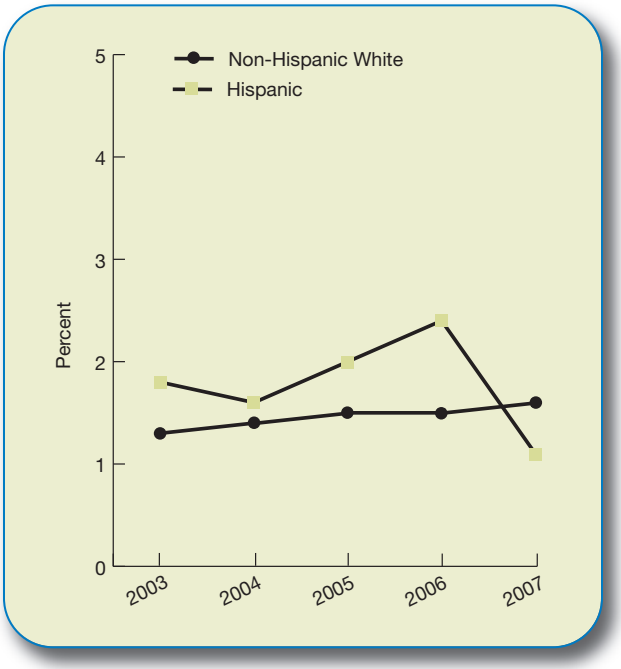
In 2006, about 17 million Americans age 12 and over acknowledged being heavy alcohol drinkers, and about 57 million acknowledged having had a recent binge drinking episode.[33] About 20.4 million people age 12 and over were illicit drug users, and about 72.9 million reported recent use of a tobacco product.[33] In 2001, an estimated $18 billion was devoted to treatment of substance use disorders. This amount constituted 1.3% of all health care spending.[34]

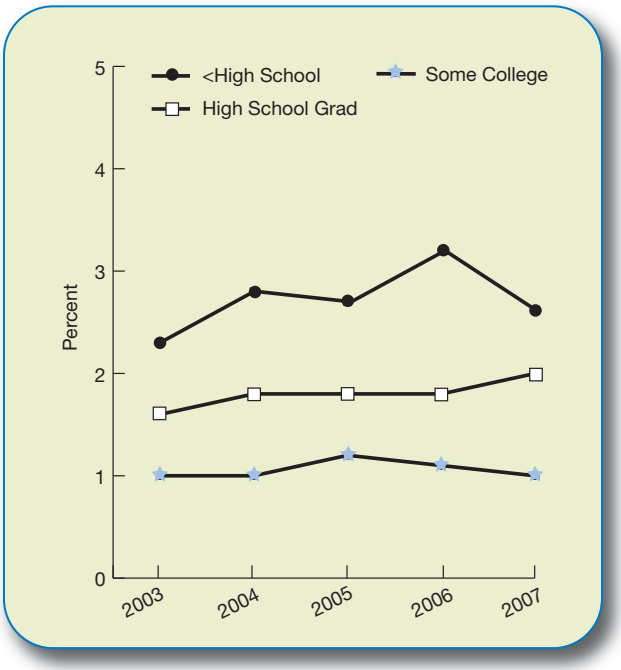
Racial, ethnic, and socioeconomic differences in substance abuse treatment[31] may, in part, reflect variation in preferences and cultural attitudes toward substance abuse.

Below is a measure of receipt of illicit drug or alcohol treatment services; it should be noted that differences in the rates could be influenced not only by differing treatment rates but also by varying levels of prevalence.

Figure 3.16. People age 12 and over who received any treatment for illicit drug or alcohol abuse in the last 12 months, by race, ethnicity, and education, 2003-2007







Key: AI/AN = American Indian or Alaska Native; NHOPI = Native Hawaiian or Other Pacific Islander.
Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2003-2007.
Denominator: U.S. population age 12 and over.
Note: Data were insufficient for this analysis for Asians and NHOPIs in 2007 and NHOPIs in 2004.

- From 2003 to 2007, the gap between Blacks and Whites in the percentage of people age 12 and over who received any treatment for illicit drug or alcohol abuse remained the same (Figure 3.16). In 2007, the percentage was higher for Blacks than for Whites (2.3% compared with 1.5%).
- From 2003 to 2007, the gap between AI/ANs and Whites in the percentage of people age 12 and over who received any treatment for illicit drug or alcohol abuse remained the same. In 2007, the percentage was more than two times as high for AI/ANs as for Whites (3.5% compared with 1.5%).
- In 2007, the percentage was lower for Hispanics than for non-Hispanic Whites (1.1% compared with 1.6%).
- In 2007, the percentage was more than two times as high for people with less than a high school education compared with people with some college education (2.6% compared with 1.0%).

Table 3.1a. Racial and Ethnic Differences in Facilitators and Barriers to Health Care

Core Report Measure	Racial Difference[i]					Ethnic Difference[ii]
	Black	Asian	NHOPI	AI/AN	>1 Race	Hispanic
Health Insurance Coverage						
People under age 65 with health insurance[iii]	=	=	=	↓	=	↓
People under age 65 who were uninsured all year[iv]	=	=	=	=	=	↓
Usual Source of Care						
People with a specific source of ongoing care[iii]	=	=		=	=	↓
People with a usual primary care provider[iv]	↓	↓	=	=	=	↓
People without a usual source of care who indicated a financial or insurance reason for not having a source of care[iv]	↑	=			=	↓
Patient Perceptions of Need						
People who were unable to get or delayed in getting needed care[iv]	=	↑		↓	↓	↑

[i] Compared with Whites.
[ii] Compared with non-Hispanic Whites.
[iii] Source: National Health Interview Survey, 2007.
[iv] Source: Medical Expenditure Panel Survey, 2006.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian or Alaska Native.

Key to Symbols Used in Access to Health Care Tables:

= Group and comparison group have about same access to health care.
↑ Group has better access to health care than the comparison group.
↓ Group has worse access to health care than the comparison group.
Blank cell: Reliable estimate for group could not be made.

Table 3.1b. Socioeconomic Differences in Facilitators and Barriers to Health Care

Core Report Measure	Income Difference[i]			Educational Difference[ii]		Insurance Difference[iii]
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
Health Insurance Coverage						
People under age 65 with health insurance[iv]	↓	↓	↑	↓	↓	
People under age 65 who were uninsured all year[v]	↓	↓	↑	↓	↓	
Usual Source of Care						
People with a specific source of ongoing care[iv]	↓	↓	↑	↓	↓	↓
People with a usual primary care provider[v]	↓	↓	↓	↓	=	↓
People without a usual source of care who indicated a financial or insurance reason for not having a source of care[iv]	↓	↓	↑	↓	↓	↓
Patient Perceptions of Need						
People who were unable to get or delayed in getting needed care[v]	↓	↓	↓	↓	↓	↓

[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, 2007.
[v] Source: Medical Expenditure Panel Survey, 2006.
Key: HS=High school.

Key to Symbols Used in Access to Health Care Tables:

= Group and comparison group have about same access to health care.
↑ Group has better access to health care than the comparison group.
↓ Group has worse access to health care than the comparison group.
Blank cell: Reliable estimate for group could not be made.

Table 3.2a. Racial and Ethnic Differences in Health Care Utilization

Core Report Measure	Racial Difference[i]					Ethnic Difference[ii]
	Black	Asian	NHOPI	AI/AN	>1 Race	Hispanic
General Medical Care						
People who had a dental visit in the calendar year[iii]	↓	↓	↑	↓	↓	↓
Avoidable Admissions						
Perforated appendixes per 1,000 admissions with appendicitis[iv]	↓	=				=
Mental Health Care and Substance Abuse Treatment						
Adults who received mental health treatment or counseling in the last 12 months[v]	=	↓		=	=	=
People age 12 and over who received any treatment for illicit drug or alcohol abuse in the last 12 months[v]	=			=	=	=

[i] Compared with Whites.

[ii] Compared with non-Hispanic Whites.

[iii] Source: Medical Expenditure Panel Survey, 2006.

[iv] Source: HCUP SID disparities analysis file, 2006. This source categorizes race/ethnicity very differently from other sources. Race/ethnicity information is categorized as a single item: Non-Hispanic White, Non-Hispanic Black, Hispanic, Asian or Pacific Islander. These contrasts compare each group with non-Hispanic Whites.

[v] Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2007.

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

Key to Symbols Used in Health Care Utilization Tables:

= Group and comparison group receive about same amount of health care.

↑ Group receives more health care than the comparison group.

↓ Group receives less health care than the comparison group.

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

Table 3.2b. Socioeconomic Differences in Health Care Utilization

Core Report Measure	Income Difference[i]			Educational Difference[ii]		Insurance Difference[iii]
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
General Medical Care						
People who had a dental visit in the calendar year[v]	↓	↓	↑	↓	↓	↓
Avoidable Admissions						
Perforated appendixes per 1,000 admissions with appendicitis[v]	↓	=	↑			↓
Mental Health Care and Substance Abuse Treatment						
Adults who received mental health treatment or counseling in the last 12 months[v]				=	=	
People age 12 and over who received any treatment for illicit drug or alcohol abuse in the last 12 months[v]				=	=	

[i] Compared with persons with family incomes 400% of Federal poverty threshold 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, 2006.

[v] Source: HCUP SID disparities analysis file, 2006. This source categorizes race/ethnicity very differently from other sources. Race/ethnicity informationis categorized as a single item: Non-Hispanic White, Non-Hispanic Black, Hispanic, Asian or Pacific Islander. These contrasts compare each group with non-Hispanic Whites.

[vi] Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2007. Insurance disparities were not analyzed.

Key: HS=high school.

Key to Symbols Used in Health Care Utilization Tables:

= Group and comparison group receive about same amount of health care.

↑ Group receives more health care than the comparison group.

↓ Group receives less health care than the comparison group.

Blank cell: Reliable estimate for group could not be made

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Chapter 4. Priority Populations

To examine the issue of disparities in health care, Congress directed the Agency for Healthcare Research and Quality (AHRQ) to produce an annual report to track "prevailing disparities in health care delivery as it relates to racial factors and socioeconomic factors in priority populations." Although the emphasis is on disparities related to race, ethnicity, and socioeconomic status, this directive includes a charge to examine disparities in "priority populations," which are groups with unique health care needs or issues that require special attention.

This chapter of the National Healthcare Disparities Report (NHDR) addresses the congressional directive on priority populations.[i] Chapters 2 and 3 of this report examine racial, ethnic, and socioeconomic differences in quality of health care and access to health care in the general U.S. population. This chapter focuses on differences within and across priority populations. For example, comparisons are made between Black and White women and between children from low- and high-income families.

The approach taken in this chapter may help policymakers understand the impact of racial, ethnic, and socioeconomic differences on specific populations and target quality improvement programs toward groups in greatest need. Appendix D includes detailed tables that allow examination of racial, ethnic, and socioeconomic disparities both in the general population and across priority populations for most measures.

AHRQ's Priority Populations

AHRQ's priority populations, specified by Congress in the Healthcare Research and Quality Act of 1999 (Public Law 106-129), are:

- Racial and ethnic minority groups.[ii]
- Low-income groups.[iii]
- Women.
- Children (under age 18).
- Older adults (age 65 and over).
- Residents of rural areas.[iv]

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[i] The congressional mandate for the NHDR also identifies populations living in inner-city areas as a priority population. However, no data are available to support findings for this population.

[ii] Racial categories include White, Black, Asian, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, and more than one race. Ethnic categories are Hispanic or Latino, non-Hispanic White, and non-Hispanic Black.

[iii] In the NHDR, "low income" refers to poor people. Thresholds for income categories—poor, near poor, middle income, and high income—vary by family size and composition and are updated annually by the U.S. Bureau of the Census. For example, in 2008 the Federal poverty threshold for a family of two adults and two children was $21,834.

[iv] Rural areas can be defined differently depending on the data source. The NHDR uses Office of Management and Budget revised definitions of metropolitan and micropolitan statistical areas. Noncore areas are rural areas. Data for metropolitan and micropolitan areas are used for comparisons with noncore areas.

- Individuals with special health care needs,[v] including individuals with disabilities and individuals who need chronic care or end-of-life care.

How This Chapter Is Organized

This chapter provides the most recent information available on racial, ethnic, and income differences in quality and access for priority populations. It is presented in the following order:

- Racial and ethnic minorities.
- Low-income groups.
- Women.
- Children.
- Older adults.
- Residents of rural areas.
- Individuals with disabilities or special health care needs.

To avoid repeating the previous chapters' findings on race, ethnicity, and socioeconomic status, the first two sections summarize quality of and access to health care for racial and ethnic minorities and low-income groups. Subsequent sections focus on the remaining priority populations and examine disparities in care within each population group and changes in disparities over time. To present this greater detail, some sections highlight a small number of measures that supplement the core measures presented in Chapters 2 and 3. While these measures may not necessarily be the core measures presented each year, they add detail to the picture of disparities that each population may face. Interagency Work Group members and AHRQ experts on particular populations assisted in selecting measures for these priority populations.

For smaller priority populations, measure selection was often driven by available sample sizes. When possible, measures were selected to encompass multiple components of health care need, such as preventive services, treatment of acute illness, management of chronic disease, and access to health care. Results for all measures are found in the detailed appendix tables.

[v] Individuals with special health care needs include children who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally.

The measures discussed in this chapter are as follows:

Section	Measure
Blacks or African Americans	
Asians	
Native Hawaiians and Other Pacific Islanders	Cholesterol screening Colorectal cancer screening Pneumonia admissions Medical costs
American Indians and Alaska Natives	
Hispanics or Latinos	
Recent Immigrants and Limited-English-Proficient Populations	Tuberculosis therapy Poor communication with health providers Uninsurance Language assistance
Low-Income Groups	
Women	Adults with obesity given advice about healthy eating Heart attack mortality New AIDS cases Usual source of care Birth trauma
Children	Early childhood vaccinations Counseling to parents about healthy eating Dental visits in the past year Accidental puncture or laceration during procedure Hospital admissions with perforated appendix Health insurance
Older Adults	Influenza vaccination Vision screening Delayed care due to cost
Residents of Rural Areas	Heart attack mortality Recommended services for diabetes Care for illness or injury as soon as wanted Uninsurance
Individuals With Disabilities or Special Health Care Needs	Adults with disabilities Delayed dental care, dental visits Underinsurance, financial burden of health care costs

It should be noted that this chapter does not provide a comprehensive assessment of health care differences in each priority population. Most of the measures tracked in the NHDR were selected to be applicable across many population groups. Only a few, such as immunizations among children, were specific to particular groups.

These general measures overlook some important health care problems specific to particular populations. For example, people with disabilities may face barriers in getting access to care and experience differences in quality of care that are not captured by data because of the limitations in the survey instruments. In addition, national data may not address key health issues for specific population groups. It is not always possible to generate reliable estimates for many smaller groups, such as Native Hawaiians and Other Pacific Islanders (NHOPIs) and American Indians and Alaska Natives (AI/ANs). Instead, this chapter should be seen as a starting point, identifying some problem areas and indicating gaps in current data and understanding.

Racial and Ethnic Minorities

In 2000, about 33% of the U.S. population identified themselves as members of racial or ethnic minority groups.[1] By 2050, it is projected that these groups will account for almost half of the U.S. population. For 2007, the U.S. Census Bureau estimated that the United States had almost 38.8 million Blacks or African Americans[2] (12.9% of the U.S. population)[3]; more than 45.5 million Hispanics or Latinos (15.1%)[2]; almost 13.4 million Asians (4.4%); more than 0.5 million NHOPIs (0.2%); and more than 2.9 million AI/ANs (1.0%), of whom 57% reside on Federal trust lands.[4] Racial and ethnic minorities are more likely than non-Hispanic Whites to be poor or near poor.[5] In addition, Hispanics, Blacks, and some Asian subgroups are less likely than non-Hispanic Whites to have a high school education.[6]

Previous chapters of the NHDR described health care differences by racial[vi] and ethnic[vii] categories as defined by the Office of Management and Budget and used by the U.S. Census Bureau.[7] In this section, quality of and access to health care for each minority group are summarized to the extent that statistically reliable data are available for each group.[viii] Criteria for importance are that the difference is statistically significant at the alpha = 0.05 level (two-tailed test) and that the relative difference from the reference group is at least 10% when framed positively as a favorable outcome or negatively as an adverse outcome. Access measures focus on facilitators and barriers to health care and exclude health care utilization measures.

[vi] Races include Black or African American, Asian, Native Hawaiian or Other Pacific Islander, American Indian or Alaska Native, White, and people of multiple races.

[vii] Ethnicity differentiates Hispanics and non-Hispanics. Among non-Hispanics, this report identifies non-Hispanic Whites and non-Hispanic Blacks.

[viii] Data are presented for each minority group except for people of multiple races due to unreliable estimates for this group.

Changes Over Time

This section also examines changes in differences related to race and ethnicity over time. For each core report measure, racial, ethnic, and socioeconomic groups are compared with a designated comparison group. The time periods range from 2000-2002 to 2005-2007, depending on data source. Consistent with Healthy People 2010, disparities are measured in relative terms as the percentage difference between each group and a comparison group. Changes in disparity are measured by subtracting the percentage difference from the comparison group at the baseline year from the percentage difference from the comparison group at the most recent year. The change in each disparity is then divided by the number of years between the baseline and most recent estimate to calculate change in disparity per year.

Core report measures (refer to Table 1.2) for which the relative differences are changing less than 1% per year are identified as staying the same. Core report measures for which the relative differences are becoming smaller at a rate of 1% or more per year are identified as improving. Core report measures for which the relative differences are becoming larger at a rate of 1% or more per year are identified as worsening. Changes of greater than 5% per year are also differentiated from changes of between 1% and 5% per year in some figures.

Gaps in Information

As in previous NHDRs, this section includes information on programs and issues that may affect racial and ethnic disparities. The assessment of disparities AI/ANs face includes information on the approximately 1.5 million individuals who obtain care from Indian Health Service (IHS) facilities and Tribal facilities that receive IHS funding.

In interpreting findings for racial and ethnic minorities, readers should note that considerable gaps exist in information for some racial and ethnic minorities and limit the NHDR's ability to identify the current state of disparities for some groups. Gaps can relate to insufficient data to produce reliable estimates or, when estimates are possible, to inadequate power to detect large differences. For example, of core report measures of quality, it is rarely possible to provide estimates for NHOPIs and people of more than one race. For Asians, only about two-thirds of core report measures of quality support analyses. For AI/ANs, only about half of these same measures support analyses.

In addition, many data sources changed racial classifications for Asians and NHOPIs in 2003 to adhere to new Federal standards. This change has further constrained the ability to perform trend analyses for these groups. Chapter 1, Introduction and Methods, and the summary section at the end of this report present more detailed descriptions of current data limitations and ways data are gradually improving.

For all groups, opportunities exist to improve health care quality and access. A summary of the measures that identify opportunities for improvement is presented below.

Table 4.1. Percentage of core quality and access measures that are not improving for various racial and ethnic groups

Group	Reference group	Percentage of core measures not improving (n = number of measures that could be tracked)	
		Quality of care	Access to care
Black	White	71 (n = 38)	50 (n = 10)
Asian	White	85 (n = 27)	60 (n = 10)
AI/AN	White	57 (n = 19)	71 (n = 7)
Hispanic	Non-Hispanic White	68 (n = 37)	50 (n = 10)

Key: AI/AN = American Indian or Alaska Native.
Note: "Not improving" is defined for quality measures as a population that received about the same or worse quality of care as Whites or non-Hispanic Whites and for access measures, as a population that had about the same or worse access to care as Whites or non-Hispanic Whites. Percentages are based on a subset of core measures that have data for these groups. Some data sources do not collect data for these groups or do not have statistically reliable data to report for these groups. Some measures include data for all ages and some are age-group specific. Refer to the Measure Specifications and Data Tables appendixes for more information. Baseline year and most recent year are not the same for all measures, depending on the data source.

For each racial or ethnic group, Table 4.2 highlights the core measures with gaps that are increasing (i.e., getting worse) for the group compared with its reference group.

Table 4.2. Core measures that are getting worse for group compared with reference group

Topic	Measure Name	Blacks	Asians	American Indians/ Alaska Natives	Hispanics	Poor People
Preventive services	Adults age 50 and over who received a colorectal cancer screening	*	*	*	*	*
	Adults age 65 and over who ever received pneumococcal vaccination		*		*	
	Adults with obesity who received advice about exercise				*	*
	Children ages 2-17 who received advice about exercise				*	
	Children ages 2-17 who received advice about healthy eating	*	*			
	Children ages 19-35 months who received all recommended vaccines		*			*

Table 4.2. Core measures that are getting worse for group compared with reference group

Topic	Measure Name	Blacks	Asians	American Indians/ Alaska Natives	Hispanics	Poor People
Acute illness treatment	Hospital patients with heart failure who received recommended care		*	*	*	
	Hospital patients with heart attack who received recommended care			*		
	Hospital patients with pneumonia who received recommended care		*	*	*	
Chronic disease management	Adults with diabetes who had three major exams in the past year	*			*	*
	Adults with past year major depressive episode who received treatment for the depression in the past year	*				
	People age 12 and over who needed treatment for any illicit drug use or alcohol problem who received such treatment	*			*	*
	Tuberculosis patients who complete a curative course of treatment			*		
	Long-stay nursing home residents who were physically restrained			*		
	Home health care patients who get better at walking or moving around	*				
	Home health care patients who were admitted to the hospital			*		
	Adults age 65 and over who received potentially inappropriate prescription medications	*				

Table 4.2. Core measures that are getting worse for group compared with reference group

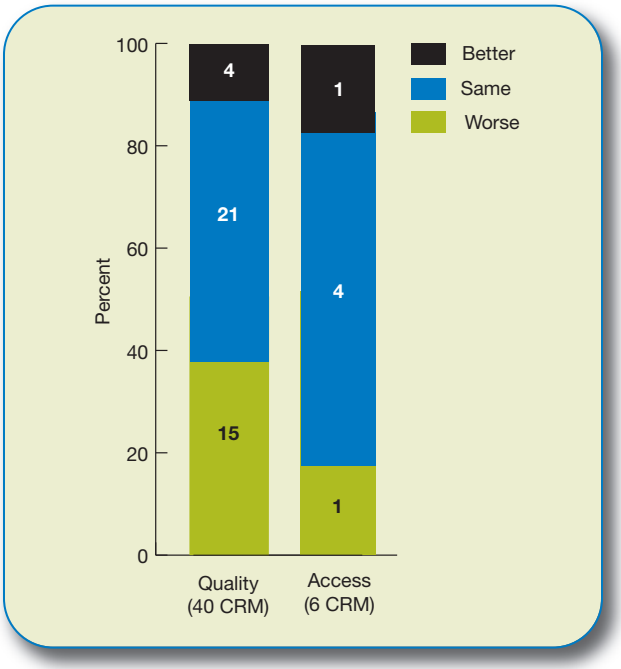
Topic	Measure Name	Blacks	Asians	American Indians/ Alaska Natives	Hispanics	Poor
Outcome	Breast cancer diagnosed at advanced stage	*				
	Colorectal cancer diagnosed at advanced stage		*			
	Colorectal cancer mortality	*			*	
	Breast cancer mortality	*				
	Adult hemodialysis patients with adequate dialysis		*	*	*	
	Deaths per 1,000 adults hospitalized with heart attack	*	*			
Patient safety	Appropriate timing of antibiotics received by adult Medicare patients having surgery	*				
	Adults age 65 and over who received potentially inappropriate prescription medications				*	
Timeliness	Adults who can sometimes or never get care for illness or injury as soon as wanted					*
Patient centeredness	Patient-provider communication—adults					*
	Patient-provider communication—children					*
Access	People who were unable to get or delayed in getting needed medical care, dental care, or prescription medications			*	*	*
	People who have a specific source of ongoing care			*		
	People under age 65 with health insurance			*		
	People who have a usual primary care provider		*			
	People without a usual source of care due to a financial or insurance reason	*	*			

Note: "Asian" includes "Asian or Pacific Islander" when information is not collected separately for each group. The time period for this table is the most recent and oldest years of data used in the NHDR. Measures with the highest annual percentage change in the direction of "getting worse" are shown here. Measures with no change are not included here. A blank cell indicates that no disparity in quality of care was getting worse for the group, which could reflect lack of data or small sample sizes for some populations.

Blacks or African Americans

Previous NHDRs showed that Blacks had poorer quality of care and worse access to care than Whites for many measures tracked in the reports. Findings based on core report measures (Table 1.2) of quality and access to health care are shown below.

Figure 4.1. Blacks compared with Whites on core measures of quality and access



Better = Blacks receive better quality of care or have better access to care than Whites.
Same = Blacks and Whites receive about the same quality of care or access to care.
Worse = Blacks receive poorer quality of care or have worse access to care than Whites.
Key: CRM = core report measures (Table 1.2).
Note: Data presented are the most recent available.

Table 4.3. Blacks compared with Whites on measures of quality and access for most current data year: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
Cancer		Colorectal cancer diagnosed at advanced stage	Women age 40 and over who reported they had a mammogram within the past 2 years
		Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test	
		Colorectal cancer deaths per 100,000 population	
		Breast cancer diagnosed at advanced stage	
		Cancer deaths per 100,000 female population due to breast cancer	

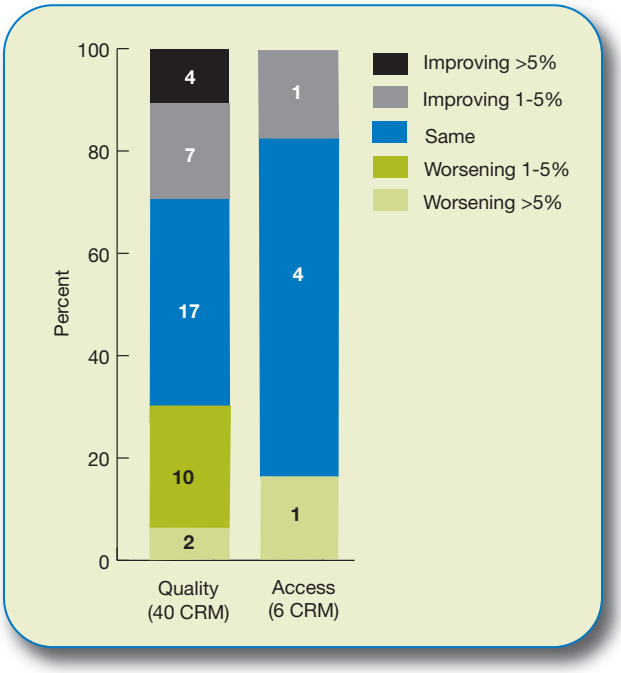
Table 4.3. Blacks compared with Whites on measures of quality and access for most current data year: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
Diabetes			Adults with diabetes who had three major exams in the past year
End stage renal disease			Hemodialysis patients with urea reduction ratio 65% or higher
			Dialysis patients registered on the waiting list for transplantation
Heart disease	Deaths per 1,000 admissions with acute myocardial infarction as principal diagnosis, age 18 and over		
	Hospital patients who received recommended care for heart failure		Hospital patients who received recommended care for heart attack
HIV and AIDS		New AIDS cases per 100,000 population age 13 and over	
Maternal and child health			Children ages 2-17 given advice about exercise
		Children ages 2-17 who had a dental visit	Children ages 2-17 given advice about healthy eating
		Children ages 19-35 months who received all recommended vaccines	Children ages 3-6 with a vision check
Mental health and substance abuse	Suicide deaths per 100,000 population	Adults age 18 and over with past year major depressive episode who received treatment for the depression in the past year	People age 12 and over who needed treatment for any illicit drug use or alcohol problem and who received such treatment in the past year
Respiratory diseases		Adults age 65 and over who ever received pneumococcal vaccination	Tuberculosis patients who completed a curative course of treatment within 1 year of initiation of treatment
		Hospital patients with pneumonia who received recommended care	
Lifestyle modification			Current smokers age 18 and over given advice to quit smoking Adults with obesity given advice about exercise

Table 4.3. Blacks compared with Whites on measures of quality and access for most current data year: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
Functional status preservation and rehabilitation		Female Medicare beneficiaries age 65 and over who reported ever being screened for osteoporosis	Home health care patients whose ability to walk or move around improved
Supportive and palliative care	Long-stay nursing home residents who were physically restrained	High-risk long-stay nursing home residents with pressure sores	
		Short-stay nursing home residents with pressure sores	
		Home health care patients who were admitted to the hospital	
Patient safety			Appropriate timing of antibiotics received by adult Medicare patients having surgery
			Postoperative complications
			Failure to rescue
			Central venous catheter-associated adverse events
			Adults age 65 and over who received potentially inappropriate prescription medications
Timeliness		Emergency department visits in which patients left without being seen	Adults who can sometimes or never get care for illness or injury as soon as wanted
Patient centeredness			Poor provider-patient communication—children
			Poor provider-patient communication—adults
Access	People without a usual source of care due to a financial or insurance reason	People who have a usual primary care provider	People under age 65 with health insurance
			People under age 65 uninsured all year
			People who have a specific source of ongoing care
			People who were unable to get or delayed in getting needed medical care, dental care, or prescription medications

Figure 4.2. Change in Black-White disparities over time



Improving >5% = Black-White difference becoming smaller at an average annual rate greater than 5%.
Improving 1-5% = Black-White difference becoming smaller at an average annual rate between 1% and 5%.
Same = Black-White difference not changing.
Worsening 1-5% = Black-White difference becoming larger at an average annual rate between 1% and 5% per year.
Worsening >5% = Black-White difference becoming larger at an average annual rate greater than 5%.
Key: CRM = core report measures (Table 1.2).
Note: The time period for this figure is the most recent and oldest years of data used in the NHDR. Only 46 core report measures could be tracked over time for Blacks.

Table 4.4. Change in Black-White disparities over time: Specific measures

Topic	Improving	Worsening	Same
Cancer		Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test	Women age 40 and over who reported they had a mammogram within the past 2 years
		Colorectal cancer deaths per 100,000 population per year	Colorectal cancer diagnosed at advanced stage
		Breast cancer diagnosed at advanced stage	
		Breast cancer deaths per 100,000 female population	
Diabetes		Adults with diabetes who had three major exams in the past year	
End stage renal disease	Hemodialysis patients with urea reduction ratio 65% or higher		Dialysis patients registered on the waiting list for transplantation
Heart disease	**Hospital patients who received recommended care for heart attack**	Deaths per 1,000 admissions with acute myocardial infarction as principal diagnosis, age 18 and over	Hospital patients who received recommended care for heart failure

Table 4.4. Change in Black-White disparities over time: Specific measures

Topic	Improving	Worsening	Same
HIV and AIDS	**New AIDS cases per 100,000 population age 13 and over**		
Maternal and child health	Children ages 19-35 months who received all recommended vaccines		Children ages 2-17 given advice about exercise
	Children ages 3-6 with a vision check		Children ages 2-17 given advice about healthy eating
			Children ages 2-17 who had a dental visit
Mental health and substance abuse		Adults age 18 and over with past-year major depressive episode who received treatment for the depression in the past year	Suicide deaths per 100,000 population
		People age 12 and over who needed treatment for any illicit drug use or alcohol problem who received such treatment in the past year	
Respiratory diseases	Adults age 65 and over who ever received pneumococcal vaccination	**Hospital patients with pneumonia who received recommended care**	Tuberculosis patients who completed a curative course of treatment within 1 year of initiation of treatment
Lifestyle modification			Current smokers age 18 and over given advice to quit smoking
			Adults with obesity given advice about exercise
Functional status preservation and rehabilitation		Home health care patients whose ability to walk or move around improved	
Supportive and palliative care	Short-stay nursing home residents with pressure sores		Long-stay nursing home residents who were physically restrained
			High-risk long-stay nursing home residents with pressure sores
			Home health care patients who were admitted to the hospital

Table 4.4. Change in Black-White disparities over time: Specific measures

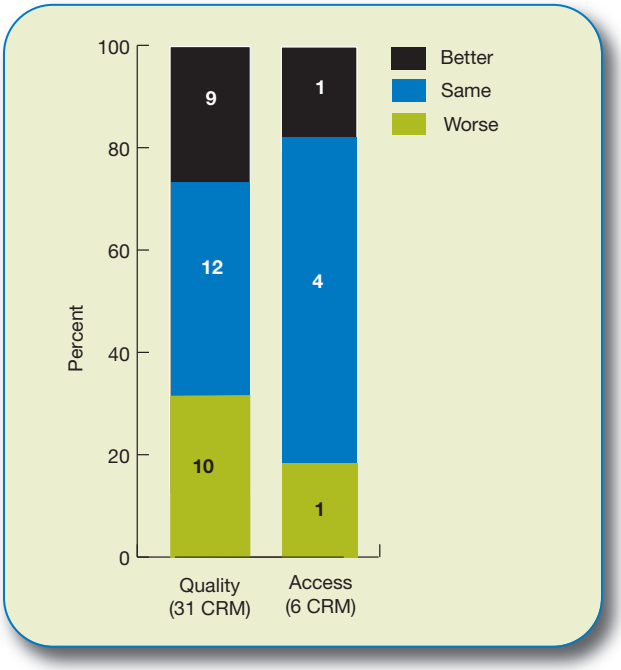
Topic	Improving	Worsening	Same
Patient safety	**Postoperative complications**	Adults age 65 and over who received potentially inappropriate prescription medications	Failure to rescue
	Central venous catheter-associated adverse events	**Appropriate timing of antibiotics received by adult Medicare patients having surgery**	
Timeliness	Emergency department visits in which patients left without being seen		
	Adults who can sometimes or never get care for illness or injury as soon as wanted		
Patient centeredness			Poor provider-patient communication—children
			Poor provider-patient communication—adults
Access	People under age 65 with health insurance	**People without a usual source of care due to a financial or insurance reason**	People under age 65 uninsured all year
			People who have a specific source of ongoing care
			People who have a usual primary care provider
			People who were unable to get or delayed in getting needed medical care, dental care, or prescription medications

Note: Measures in bold indicate improvement or worsening at a rate of greater than 5% per year.

Asians

Previous NHDRs showed that Asians had similar or better quality of care than Whites but worse access to care than Whites for many measures that the report tracks. Findings based on core report measures of quality and access to health care that support estimates for either Asians or Asians and Pacific Islanders (APIs) in aggregate are shown below.

Figure 4.3. Asians compared with Whites on measures of quality and access



Better = Asians receive better quality of care or have better access to care than Whites.
Same = Asians and Whites receive about the same quality of care or access to care.
Worse = Asians receive poorer quality of care or have worse access to care than Whites.
Key: CRM = core report measures (Table 1.2).
Note: Data presented are the most recent available.

Table 4.5. Asians compared with Whites on measures of quality and access for most current data year: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
Cancer	Colorectal cancer diagnosed at advanced stage	Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test	
	Breast cancer diagnosed at advanced stage		
	Colorectal cancer deaths per 100,000 population per year	Women age 40 and over who reported they had a mammogram within the past 2 years	
	Breast cancer deaths per 100,000 female population per year		

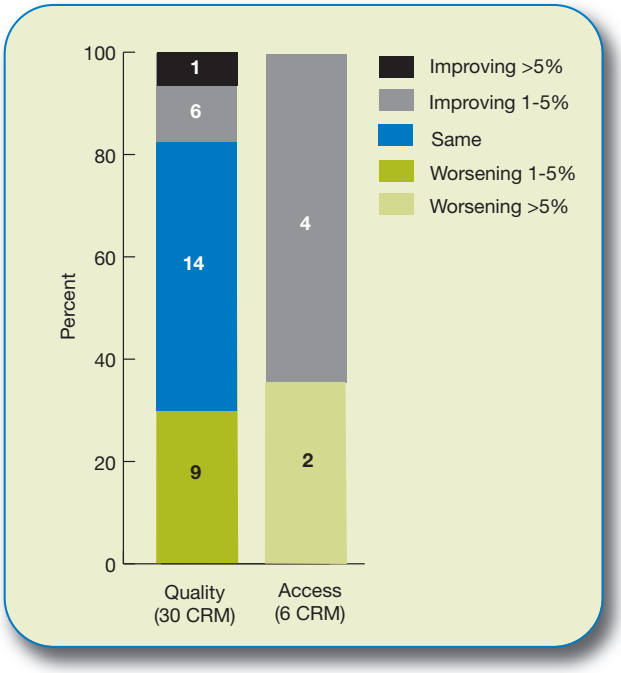
Table 4.5. Asians compared with Whites on measures of quality and access for most current data year: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
End stage renal disease	Hemodialysis patients with urea reduction ratio 65% or higher		
	Dialysis patients registered on a waiting list for transplantation		
Heart disease		Deaths per 1,000 admissions with acute myocardial infarction as principal diagnosis, age 18 and over	Hospital patients who received recommended care for heart failure
		Hospital patients who received recommended care for heart attack	
HIV and AIDS	New AIDS cases per 100,000 population age 13 and over		
Maternal and child health			Children ages 2-17 given advice about exercise
			Children ages 2-17 given advice about healthy eating
			Children ages 19-35 months who received all recommended vaccines
			Children ages 2-17 who had a dental visit
Mental health and substance abuse	Suicide deaths per 100,000 population		
Respiratory diseases		Adults age 65 and over who ever received pneumococcal vaccination	Tuberculosis patients who completed a curative course of treatment within 1 year of initiation of treatment
		Hospital patients with pneumonia who received recommended care	
Functional status preservation and rehabilitation			Home health care patients whose ability to walk or move around improved
			Female Medicare beneficiaries age 65 and over who reported ever being screened for osteoporosis

Table 4.5. Asians compared with Whites on measures of quality and access for most current data year: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
Supportive and palliative care	Home health care patients who were admitted to the hospital	Long-stay nursing home residents who were physically restrained	High-risk long-stay nursing home residents with pressure sores Short-stay nursing home residents with pressure sores
Patient safety		Appropriate timing of antibiotics received by adult Medicare patients having surgery Failure to rescue	
Timeliness			Emergency department visits in which patients left without being seen Adults who can sometimes or never get care for illness or injury as soon as wanted
Patient centeredness		Poor provider-patient communication—adults	Poor provider-patient communication—children
Access	People who were unable to get or delayed in getting needed medical care, dental care, or prescription medications	People who have a usual primary care provider	People under age 65 with health insurance People under age 65 uninsured all year People who have a specific source of ongoing care People without a usual source of care due to a financial or insurance reason

Figure 4.4. Change in Asian-White disparities over time



Improving >5% = Asian-White difference becoming smaller at an average annual rate greater than 5%.
Improving 1-5% = Asian-White difference becoming smaller at an average annual rate between 1% and 5%.
Same = Asian-White difference not changing.
Worsening 1-5% = Asian-White difference becoming larger at an average annual rate between 1% and 5%.
Worsening >5% = Asian-White difference becoming larger at an average annual rate greater than 5%.
Key: CRM = core report measures (Table 1.2).
Note: The time period for this figure is the most recent and oldest years of data used in the NHDR. Only 36 core report measures could be tracked over time for Asians and Whites.

Table 4.6. Change in Asian-White disparities over time: Specific measures

Topic	Improving	Worsening	Same
Cancer	Women age 40 and over who reported they had a mammogram within the past 2 years	Colorectal cancer diagnosed at advanced stage	Colorectal cancer deaths per 100,000 population per year
	Breast cancer diagnosed at advanced stage	Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test	
End stage renal disease	Breast cancer deaths per 100,000 female population per year	Hemodialysis patients with urea reduction ratio 65% or greater	Dialysis patients registered on a waiting list for transplantation
Heart disease		Deaths per 1,000 admissions with acute myocardial infarction as principal diagnosis, age 18 and over	Hospital patients with heart attack who received recommended hospital care
		Hospital patients with heart failure who received recommended hospital care	

Table 4.6. Change in Asian-White disparities over time: Specific measures

Topic	Improving	Worsening	Same
HIV and AIDS	New AIDS cases per 100,000 population age 13 and over		
Maternal and child health		Children ages 19-35 months who received all recommended vaccines	Children ages 2-17 who had a dental visit
		Children ages 2-17 given advice about healthy eating	Children ages 2-17 given advice about exercise
Mental health and substance abuse			Suicide deaths per 100,000 population
Respiratory diseases		Adults age 65 and over who ever received pneumococcal vaccination	Tuberculosis patients who completed a curative course of treatment within 1 year of initiation of treatment
		Hospital patients with pneumonia who received recommended care	Home health care patients whose ability to walk or move around improved
Supportive and palliative care	Long-stay nursing home residents who were physically restrained		Short-stay nursing home residents who have pressure sores
			High-risk long-stay nursing home residents who have pressure sores
			Home health care patients who were admitted to the hospital
Patient safety			Failure to rescue
Timeliness	Adults who can sometimes or never get care for illness or injury as soon as wanted		Appropriate timing of antibiotics received by adult Medicare patients having surgery
Patient centeredness	**Poor provider-patient communication—children**		Poor provider-patient communication—adults
Access	People under age 65 uninsured all year People under age 65 with health insurance	**People who have a usual primary care provider** **People without a usual source of care due to a financial or insurance reason**	
	People who have a specific source of ongoing care		
	People who were unable to get or delayed in getting needed medical care, dental care, or prescription medications		

Note: Measures in bold indicate improvement or worsening at a rate of greater than 5% per year.

Focus on Asian Subpopulations

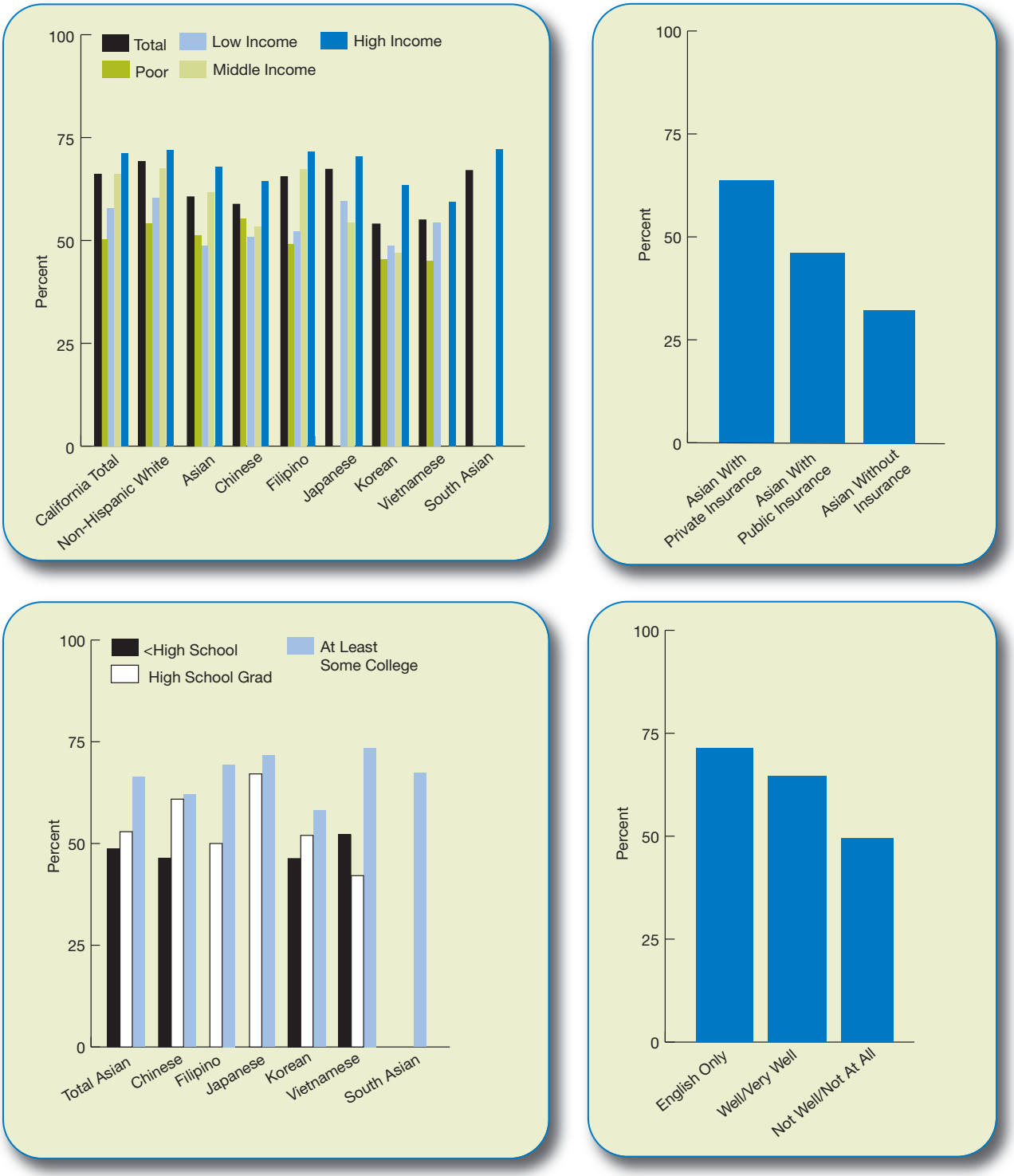
The Asian population in the United States is highly heterogeneous. The term "Asian" refers to people who identify their country of origin as being located in East Asia, Southeast Asia, or the Indian subcontinent. These include people from Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.[8] In 2008, Asians represented an estimated 4.5% of the U.S. population, or 13.5 million people.[9] According to 2000 census data, approximately 23% of Asians identified themselves as Chinese, 20% Filipino, 16% Asian Indian, 10% Korean, and 9.7% Japanese.[8]

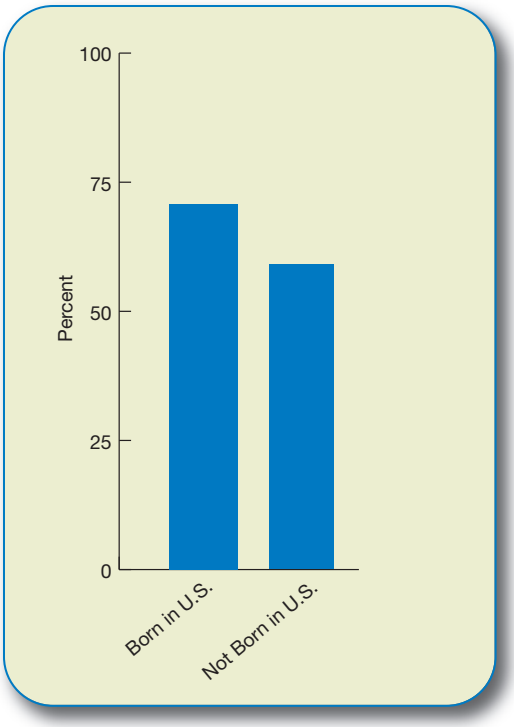
Research has shown that within-category variation (that is, variation between Asian subpopulations) is sometimes as large as the differences between Asians and Whites.[10, 11] To show differences within racial groups, this year's NHDR includes information from the California Health Interview Survey (CHIS) on Asian subpopulations in California. The geographic distribution of Asian subpopulations allows for such comparisons in California using CHIS data.

In 2008, an estimated 4.6 million people, or about 34% of the Asian population in the United States, lived in California.[9] The proportion of many Asian subpopulations residing in California is also greater than the proportion in the overall U.S. population. For example, the Vietnamese population is 1.3% of California's population compared with only 0.4% of the U.S. population, and the Filipino population is 2.7% of California's population compared with only 0.7% of the U.S. population. This finding is especially important when examining data for these relatively smaller groups, as most national data sources do not have sufficient data to report estimates for these groups. Selected CHIS measures are presented here, including colorectal cancer screening, influenza vaccinations, uninsurance, and provider-patient communication.

The data show that disparities for Asians exist, not only in comparison with Whites but also between Asian subgroups (Chinese, Filipino, Japanese, Korean, Vietnamese, and South Asian) and across Asian subgroups by income and insurance status. Differences in English proficiency and place of birth are also significant. The following section shows only some of the significant disparities for these groups in California from CHIS data. The selected measures in this section are limited to a subset of measures available to supplement the existing national measures used in the report.

Figure 4.5. Adults age 50 and over who received a sigmoidoscopy, colonoscopy, or fecal occult blood test in the past 5 years, by race, Asian subgroup, and income; by insurance status; by Asian subgroup, stratified by education; by English proficiency; and by place of birth, California only, 2007

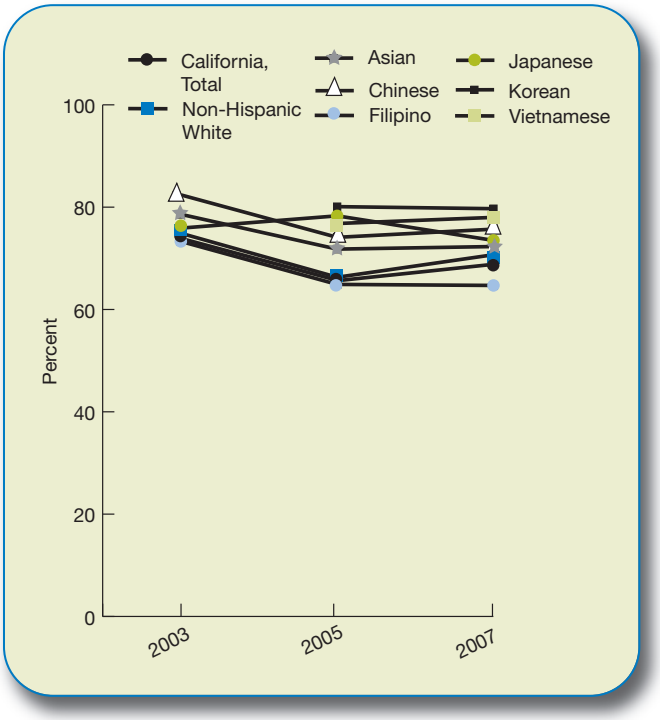


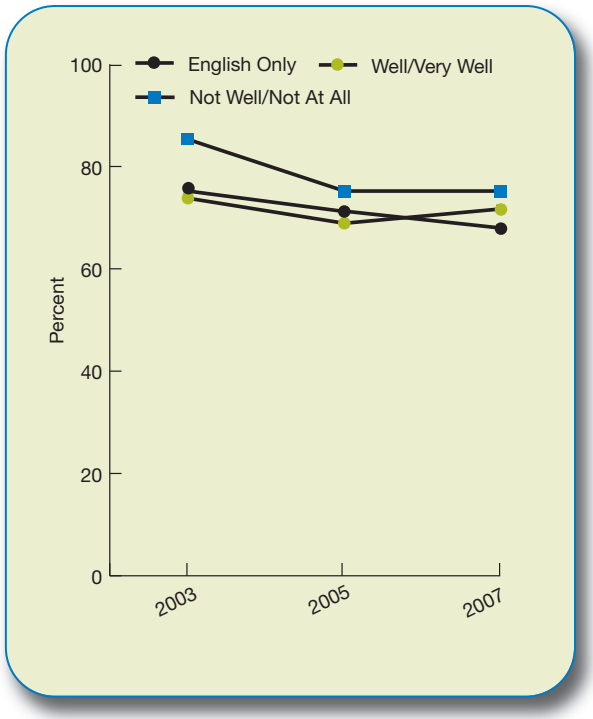


Source: University of California, Los Angeles, Center for Health Policy Research, California Health Interview Survey, 2007.
Denominator: Civilian noninstitutionalized adults age 50 and over in California.
Note: Data were statistically unreliable for poor Japanese, middle-income Vietnamese, poor, low-income, and middle-income South Asians, Filipino and Japanese with less than a high school education, and South Asians with less than a high school education and high school graduates.

- The percentage of adults age 50 and over who had colorectal cancer screening within the past 5 years was lower overall for Asians compared with non-Hispanic Whites in California (60.6% compared with 69.2%; Figure 4.5). This percentage was also lower for Chinese people (58.8%), Koreans (54.0%), and Vietnamese people (55.0%) compared with non-Hispanic Whites (69.2%).
- Among Asians, the percentage was lower for people with public insurance and people without insurance compared with people with private insurance (46.1% and 32.4%, respectively, compared with 63.7%).
- Among Asians, the percentage was lower for poor people and low-income people compared with high-income people (51.3% and 48.7%, respectively, compared with 68.0%). There were no statistically significant differences by racial subgroups within each income group.
- Among Asians, the percentage was lower for people with less than a high school education and high school graduates compared with people with at least some college education (48.7% and 52.9%, respectively, compared with 66.3%). There were no statistically significant differences by racial subgroups within each education group.
- Among Asians, the percentage of adults age 50 and over who had colorectal cancer screening within the past 5 years was lower for people who did not speak English well or did not speak English at all than for native English speakers (49.6% compared with 71.3%).
- Among Asians, the percentage of adults age 50 and over who had colorectal cancer screening within the past 5 years was lower for people who were not born in the United States than for people who were born in the United States (58.9% compared with 70.7%).

Figure 4.6. Adults age 65 and over who received influenza vaccination in the past year, by race, Asian subgroup, and English proficiency, California only, 2003, 2005, and 2007

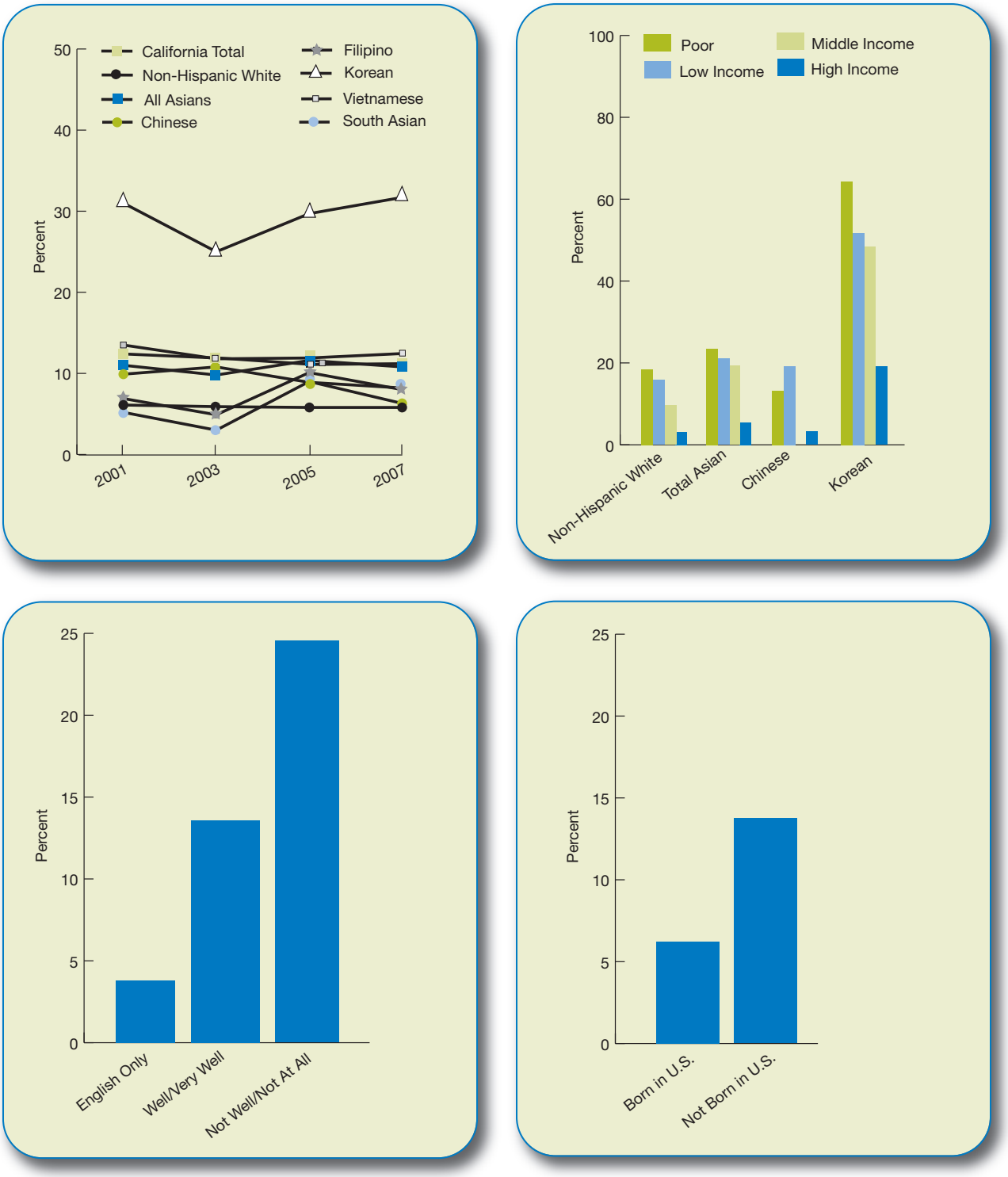




Source: University of California, Los Angeles, Center for Health Policy Research, California Health Interview Survey, 2003, 2005, and 2007.
Denominator: Civilian noninstitutionalized adults in California age 65 and over.
Note: Data were statistically unreliable for Korean and Vietnamese groups in 2003 and for South Asians.

- In California, the percentage of adults age 65 and over who received an influenza vaccination decreased overall (from 73.9% to 68.9%; Figure 4.6). The percentage was not significantly different from 2003 to 2007 for all groups except for adults who did not speak English well or did not speak English at all. This group experienced a decrease (from 85.3% to 75.2%).
- There were no statistically significant differences within Asian ethnic subgroups.

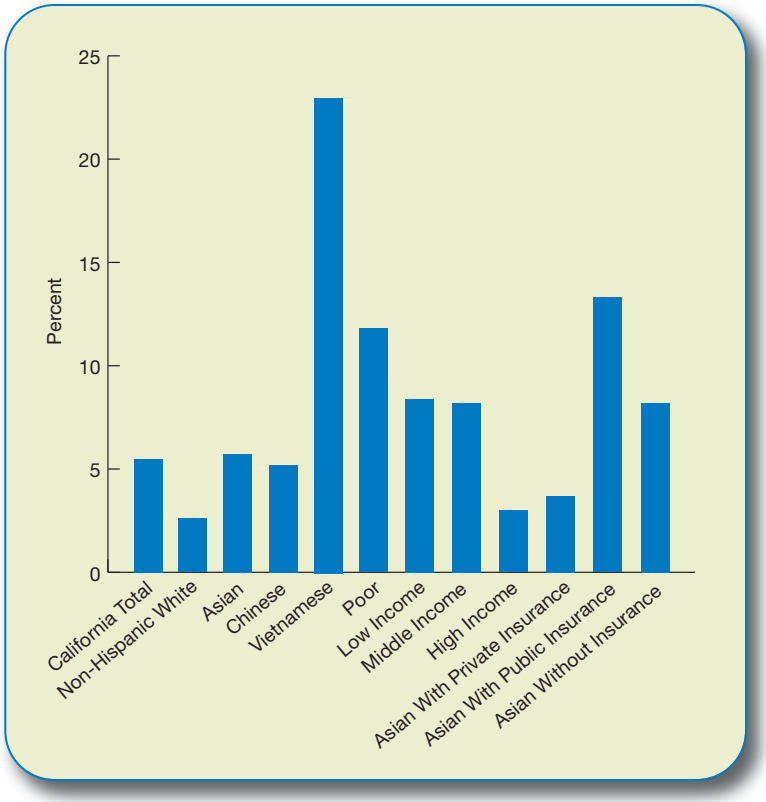
Figure 4.7. People under age 65 uninsured all year, by race and Asian subgroup, California only, 2001, 2003, 2005, and 2007; by Asian subgroup, stratified by income; by English proficiency; and by place of birth, 2007



Source: University of California, Los Angeles, Center for Health Policy Research, California Health Interview Survey, 2001, 2003, 2005, and 2007.
Denominator: Civilian noninstitutionalized population under age 65 in California.
Note: Income data did not meet criteria for statistical reliability for middle-income Chinese people, Filipinos, and Japanese, Vietnamese, and South Asian groups. No data for Japanese people met criteria for statistical reliability.

- While the overall percentage of Californians uninsured all year decreased from 2001 to 2007 (from 12.4% to 11.2%), there were no significant changes for any Asian ethnic subgroup (Figure 4.7).
- In 2007, nearly twice as many Asian as Non-Hispanic White Californians were uninsured all year (10.8% of Asians compared with 5.8% of Whites). Among Asian ethnic subgroups, Koreans had the highest percentage of people uninsured all year: about five times as high as Whites (31.7% compared with 5.8%). Vietnamese people were uninsured at a rate about twice as high as Whites (12.3% compared with 5.8%).
- Among Asians, people with middle income experienced an increase in the percentage who were uninsured all year (from 12.2% to 19.0%), as did people who were born in the United States (from 3.3% to 6.2%) (data not shown).
- In 2007, among Asians, the percentage of people uninsured all year was higher for poor people (22.3%), low-income people (20.2%), and middle-income people (19.0%) than for high-income people (5.0%).
- Among Asians, the percentage uninsured all year was higher for people who spoke English well or very well (13.6%) and for people who did not speak English well or did not speak English at all (24.5%) than for native English speakers (3.8%).
- Among Asians, the percentage of people who were uninsured all year was higher for people who were not born in the United States than for people who were born in the United States (13.7% compared with 6.2%).

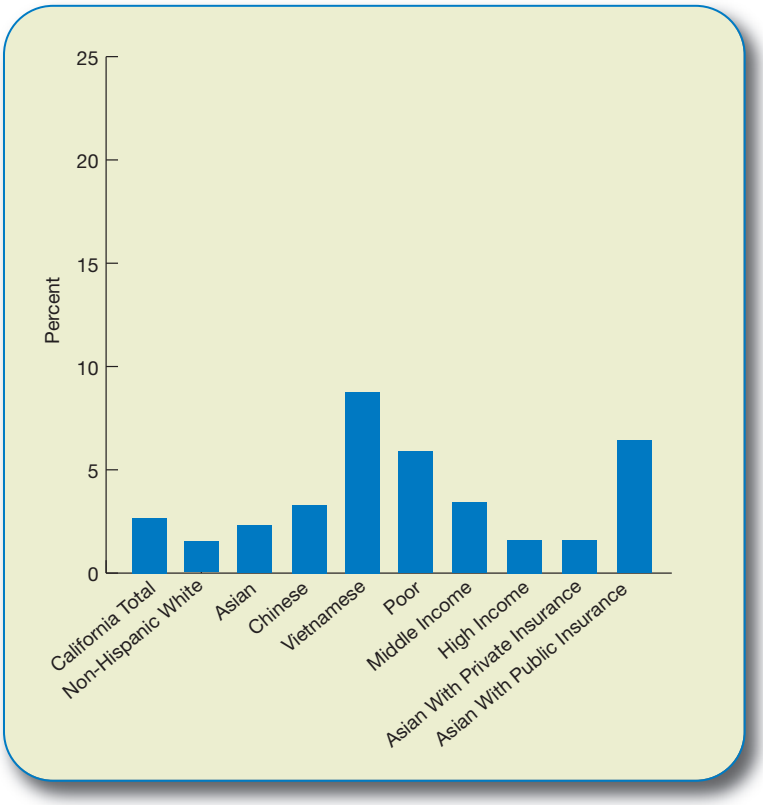
Figure 4.8. Adults age 18 and over who reported difficulty understanding their doctor during their last visit within the past 2 years, California only, by race, Asian subgroup, income, and insurance status, 2007



Source: University of California, Los Angeles, Center for Health Policy Research, California Health Interview Survey, 2007.
Denominator: Civilian noninstitutionalized adults in California age 18 and over.
Note: Income groups are all Asian. Data did not meet criteria for statistical reliability for Filipino, Japanese, and Korean groups.

- Overall, Asians were more likely than Whites to have difficulty understanding their doctor (5.5% compared with 2.6%; Figure 4.8).
- Among Asian subgroups, Vietnamese people had a higher percentage of patients who had difficulty understanding their doctor than Whites (23% compared with 2.6%).
- Among Asians, poor people (11.8%), low-income people (8.4%), and middle-income people (8.2%) were more likely than high-income people (3.0%) to have difficulty understanding their doctor.
- Among Asians, those with public insurance were more likely to have difficulty understanding their doctor than those with private insurance (13.3% compared with 3.7%).

Figure 4.9. Adults age 18 and over who reported language as the reason they had difficulty understanding their doctor during their last visit within the past 2 years, California only, by race, Asian subgroup, income, and insurance status, 2007



Source: University of California, Los Angeles, Center for Health Policy Research, California Health Interview Survey, 2007.
Denominator: Civilian noninstitutionalized adults in California age 18 and over.
Note: Income groups are all Asian. Data did not meet criteria for statistical reliability for Filipino, Japanese, Korean, low-income groups, and uninsured Asians.

- Asians had a higher percentage than non-Hispanic Whites of adults who reported language as the reason they had difficulty understanding their doctor during the last visit (2.7% compared with 1.5%; Figure 4.9).
- Among Asian subgroups, Vietnamese people had a higher percentage than Whites of adults who reported language as the reason they had difficulty understanding their doctor during the last visit (8.8% compared with 1.5%).
- Among Asians, poor people had a higher percentage than high-income people of adults who reported language as the reason they had difficulty understanding their doctor during the last visit (5.9% compared with 1.6%).
- Among Asians, people with public insurance had a higher percentage than people with private insurance of adults who reported language as the reason they had difficulty understanding their doctor during the last visit (6.4% compared with 1.6%).

Native Hawaiians and Other Pacific Islanders

The ability to assess disparities among NHOPIs for the NHDR has been a challenge for two main reasons. First, the NHOPI racial category is relatively new to Federal data collection. Before 1997, NHOPIs were classified as part of the Asian and Pacific Islander racial category and could not be identified separately in most Federal data. In 1997, the Office of Management and Budget promulgated new standards for Federal data on race and ethnicity and mandated that information about NHOPIs be collected separately from information about Asians.[7] However, these standards have not yet been incorporated into all databases. Second, when information about this population was collected, databases often included insufficient numbers of NHOPIs to allow reliable estimates to be made.

Due to these challenges, in previous NHDRs estimates for the NHOPI population could be generated for only a handful of measures. A lack of quality data on this population prevents the NHDR from detailing disparities for this group. This year, the NHDR features data from the Behavioral Risk Factor Surveillance System (BRFSS) to supplement the NHDR information for the NHOPI population. Preventive care and access to care measures were selected to highlight quality of care for people who identified themselves as NHOPI (including people of mixed race who identified primarily as NHOPI). This year, the measures include cholesterol screening, colorectal cancer screening, pneumonia admissions, and cost as a barrier to medical care.

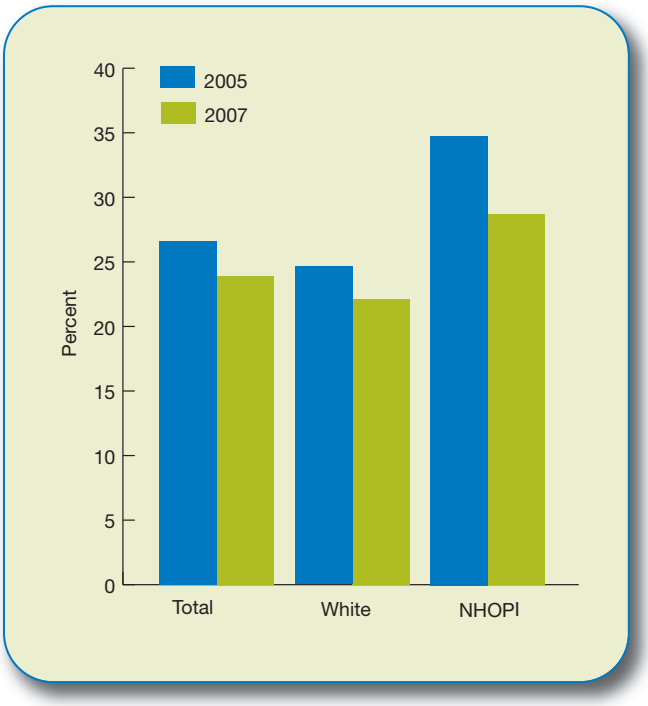
Data from BRFSS do not replace the need for continued efforts to improve data collection and statistical methods to provide more information on health and health care of the NHOPI population. BRFSS may have larger samples of NHOPIs due to State efforts to improve sample sizes, but it is not necessarily a comprehensive survey of health and health care. Other surveys and data collection efforts, such as vital statistics and hospital administrative data, include more topics but do not identify NHOPIs or have large enough sample sizes to provide data for these populations.

For all national data sources, the relatively small population sizes of many Pacific Islander groups can cause these populations to be overlooked when categorized as NHOPIs. In addition, identifying individuals with chronic conditions or other health conditions within such small populations further reduces the sample sizes that exist. However, as data become available, this information will be included in future reports.

Preventive Care: Cholesterol Screening

In the State of Hawaii, where 54% of Native Hawaiians reside, cardiovascular disease is the leading cause of death.[12] Screening for risk factors for cardiovascular disease, such as high blood pressure and high cholesterol, is important in preventing disease. Cholesterol screening is shown below to highlight one aspect of cardiovascular disease prevention for Native Hawaiians.

Figure 4.10. Adults who did NOT receive a cholesterol check in the last 5 years, Hawaii only, 2005 and 2007



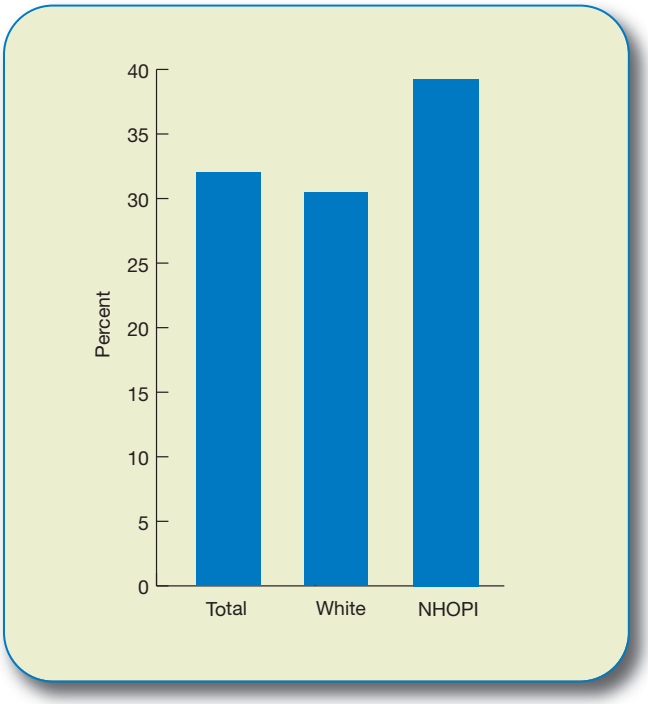
Key: NHOPI = Native Hawaiian or Other Pacific Islander.
Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2005 and 2007.
Note: These data are self-reported from a survey of adults in a household.

- In 2005 and 2007, the percentage of adults who did not receive a cholesterol check in the last 5 years was significantly higher for NHOPIs than for Whites (34.8% compared with 24.6% in 2005 and 28.7% compared with 22.1% in 2007) (Figure 4.10).

Preventive Care: Colorectal Cancer Screening

Ensuring that all populations have access to appropriate cancer screening services is a core element of reducing cancer health disparities.[13] Screening for colorectal cancer—including fecal occult blood test, sigmoidoscopy, and colonoscopy—is an effective way to reduce new cases of late-stage disease and mortality caused by this cancer. Although colorectal screening for Native Hawaiians has increased in the past 6 years, rates have remained lower than the State average in Hawaii.[14] Below are supplemental national BRFSS data for the NHOPI population.

Figure 4.11. Adults age 50 and over who did NOT receive a blood stool test in the past 2 years or sigmoidoscopy or colonoscopy ever, Hawaii only, 2008



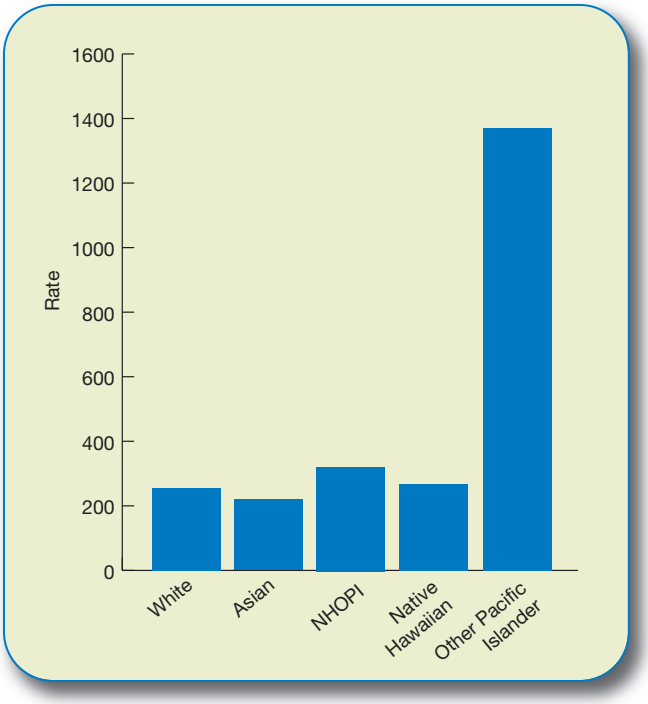
Key: NHOPI = Native Hawaiian or Other Pacific Islander.
Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2008.
Note: These data are self-reported from a survey of adults in a household.

- The percentage of adults age 50 and over who did not receive colorectal cancer screening was higher for NHOPIs than for Whites (39.3% compared with 30.4%; Figure 4.11).

Treatment: Pneumonia

High rates of hospitalizations for pneumonia may indicate poor outpatient care and low vaccination rates. NHOPIs have more hospital admissions for bacterial pneumonia than Whites. The problem appears to be worse for Pacific Islanders other than Native Hawaiians.

Figure 4.12. Bacterial pneumonia admissions per 100,000 population, age 18 and over, Hawaii only, by race and racial subgroups, 2006



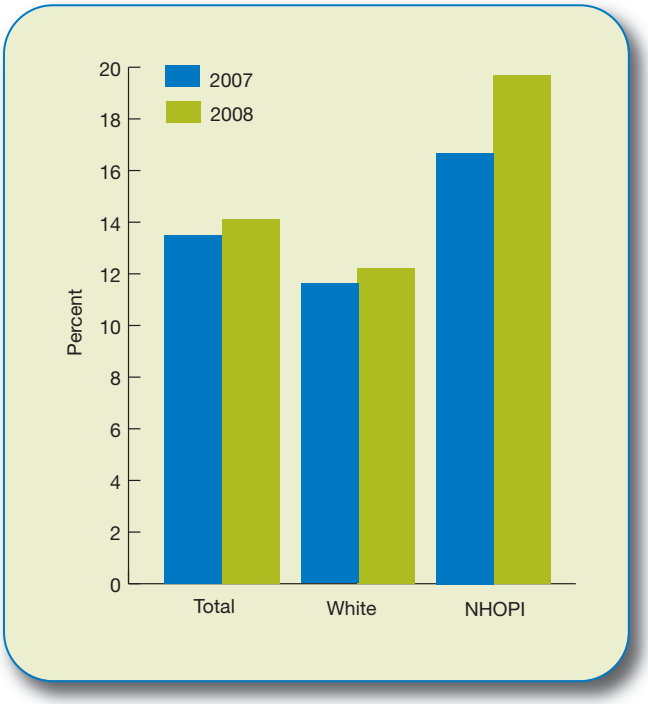
Key: NHOPI = Native Hawaiian or Other Pacific Islander.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, State Inpatient Databases, 2006, and AHRQ Quality Indicators, version 3.1.
Note: Excludes sickle cell or hemoglobin-S conditions, transfers from other institutions, and obstetric admissions. Rates are adjusted by age and gender using the total U.S. population for 2000 as the standard population. Data for Blacks did not meet the criteria for statistical reliability, data quality, or confidentiality.

- In 2006, NHOPIs had a higher rate of hospital admission with bacterial pneumonia than Whites (323.4 per 100,000 population compared with 254.4 per 100,000 population; Figure 4.12).
- Other Pacific Islanders had a significantly higher rate of hospital admission with bacterial pneumonia than Whites (1,371.4 per 100,000 population compared with 254.4 per 100,000 population).
- There were no statistically significant differences between Native Hawaiians and Whites.

Access to Care: Medical Costs

High premiums and out-of-pocket payments can be significant barriers to accessing needed medical treatment and preventive care. Studies show that racial and ethnic minorities are more likely to face barriers due to cost of care than other groups.[15, 16]

Figure 4.13. Adults who needed to see a doctor in the past year but could not because of cost, Hawaii only, 2007 and 2008



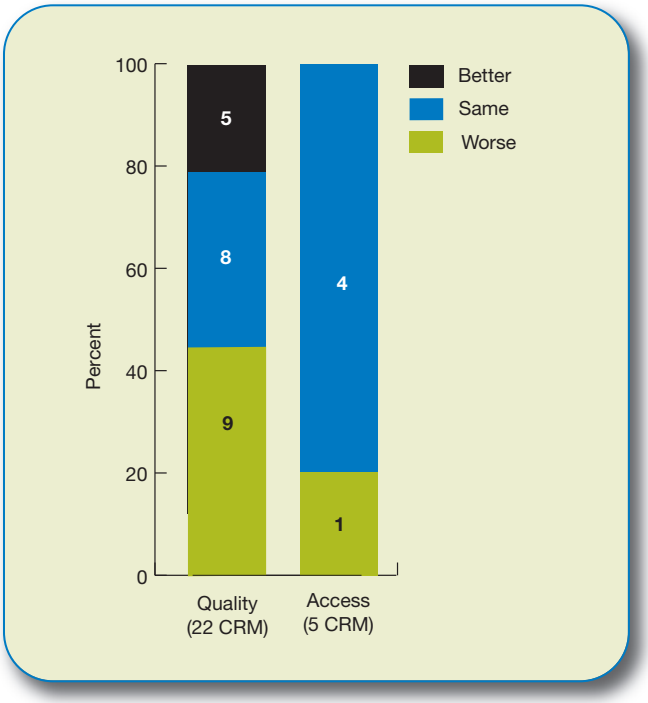
Key: NHOPI = Native Hawaiian or Other Pacific Islander.
Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2007-2008.
Note: These data are self-reported from a survey of adults in a household.

- The percentage of adults who needed to see a doctor in the past year but could not because of cost was higher for NHOPIs than for Whites in both 2007 and 2008 (Figure 4.13).

American Indians and Alaska Natives

Previous NHDRs showed that AI/ANs had poorer quality of care and worse access to care than Whites for many measures tracked in the reports. Findings based on core report measures of quality and access that support estimates for AI/ANs are shown below.

Figure 4.14. AI/ANs compared with Whites on measures of quality and access



Better = AI/ANs receive better quality of care or have better access to care than Whites.
Same = AI/ANs and Whites receive about the same quality of care or access to care.
Worse = AI/ANs receive poorer quality of care or have worse access to care than Whites.
Key: AI/AN = American Indian or Alaska Native; CRM = core report measures (Table 1.2).
Note: Data presented are the most recent available.

Table 4.7. AI/ANs compared with Whites on measures of quality and access for most current data year: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
Cancer	Colorectal cancer diagnosed at advanced stage	Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test	Women age 40 and over who reported they had a mammogram within the past 2 years
	Breast cancer diagnosed at advanced stage		
	Colorectal cancer deaths per 100,000 population per year		
	Breast cancer deaths per 100,000 female population per year		

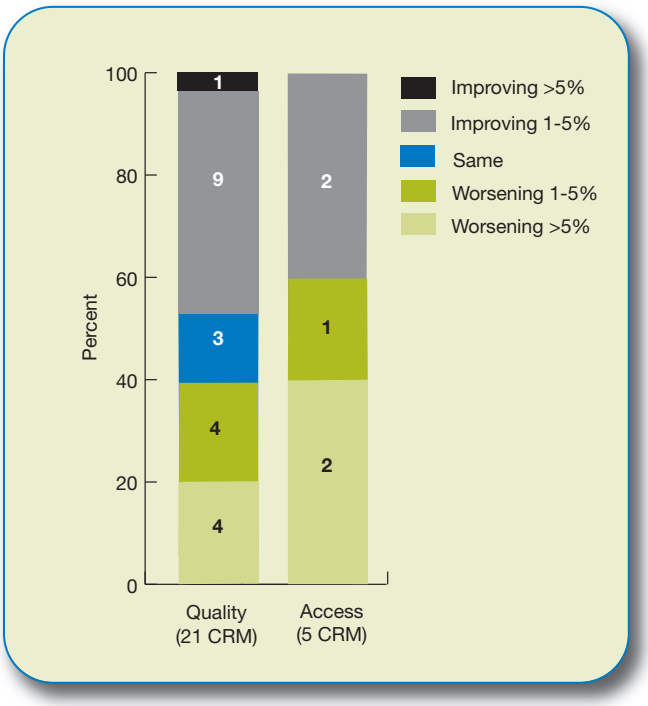
Table 4.7. AI/ANs compared with Whites on measures of quality and access for most current data year: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
End stage renal disease	Hemodialysis patients with urea reduction ratio 65% or higher		Dialysis patients registered on a waiting list for transplantation
Heart disease		Hospital patients who received recommended care for heart failure	Hospital patients who received recommended care for heart attack
HIV and AIDS			New AIDS cases per 100,000 population age 13 and over
Maternal and child health			Children ages 19-35 months who received all recommended vaccines
Mental health and substance abuse			Suicide deaths per 100,000 population
Respiratory diseases		Hospital patients with pneumonia who received recommended care	
		Tuberculosis patients who completed a curative course of treatment within 1 year of initiation of treatment	
Functional status preservation and rehabilitation		Female Medicare beneficiaries age 65 and over who reported ever being screened for osteoporosis	Home health care patients whose ability to walk or move around improved
Supportive and palliative care		Long-stay nursing home residents who were physically restrained	Short-stay nursing home residents with pressure sores
		High-risk long-stay nursing home residents with pressure sores	
		Home health care patients who were admitted to the hospital	
Patient safety		Appropriate timing of antibiotics received by adult Medicare patients having surgery	

Table 4.7. AI/ANs compared with Whites on measures of quality and access for most current data year: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
Access to care		People under age 65 with health insurance	People who have a usual primary care provider
			People who have a specific source of ongoing care
			People who were unable to get or delayed in getting needed medical care, dental care, or prescription medications
			People under age 65 uninsured all year

Figure 4.15. Change in AI/AN-White disparities over time



Improving >5% = AI/AN-White difference becoming smaller at an average annual rate greater than 5%.
Improving 1-5% = AI/AN-White difference becoming smaller at an average annual rate between 1% and 5%.
Same = AI/AN-White difference not changing.
Worsening 1-5% = AI/AN-White difference becoming larger at an average annual rate between 1% and 5%.
Worsening >5% = AI/AN-White difference becoming larger at an average annual rate greater than 5%.
Key: AI/AN = American Indian or Alaska Native; CRM = core report measures (Table 1.2).
Note: The time period for this figure is the most recent and oldest years of data used in the NHDR. Only 26 core report measures could be tracked over time for AI/ANs and Whites.

Table 4.8. Change in AI/AN-White disparities over time: Specific measures

Topic	Improving	Worsening	Same
Cancer	**Women age 40 and over who reported they had a mammogram within the past 2 years**	**Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test**	Colorectal cancer deaths per 100,000 population per year
	Breast cancer diagnosed at advanced stage		Breast cancer deaths per 100,000 female population per year
	Colorectal cancer diagnosed at advanced stage		
End stage renal disease		**Hemodialysis patients with urea reduction ratio 65% or higher**	Dialysis patients registered on a waiting list for transplantation
Heart disease		Hospital patients who received recommended care for heart attack	
		Hospital patients who received recommended care for heart failure	
HIV and AIDS	New AIDS cases per 100,000 population age 13 and over		
Maternal and child health	Children ages 19-35 months who received all recommended vaccines		
	Children ages 2-17 who had a dental visit		
Mental health and substance abuse	Suicide deaths per 100,000 population		
Respiratory diseases		**Hospital patients with pneumonia who received recommended care**	
		Tuberculosis patients who completed a curative course of treatment within 1 year of initiation of treatment	
Functional status preservation and rehabilitation			Home health care patients whose ability to walk or move around improved

Table 4.8. Change in AI/AN-White disparities over time: Specific measures

Topic	Improving	Worsening	Same
Supportive and palliative care	Short-stay nursing home residents with pressure sores	Long-stay nursing home residents who were physically restrained	
	High-risk long-stay nursing home residents with pressure sores	Home health care patients who were admitted to the hospital	
Patient safety	Appropriate timing of antibiotics received by adult Medicare patients having surgery		
Access	People under age 65 uninsured all year	People under age 65 with health insurance	
	People who have a usual primary care provider	**People who have a specific source of ongoing care**	
		People who were unable to get or delayed in getting needed medical care, dental care, or prescription medications	

Note: Measures in bold indicate improvement or worsening at a rate of greater than 5% per year.

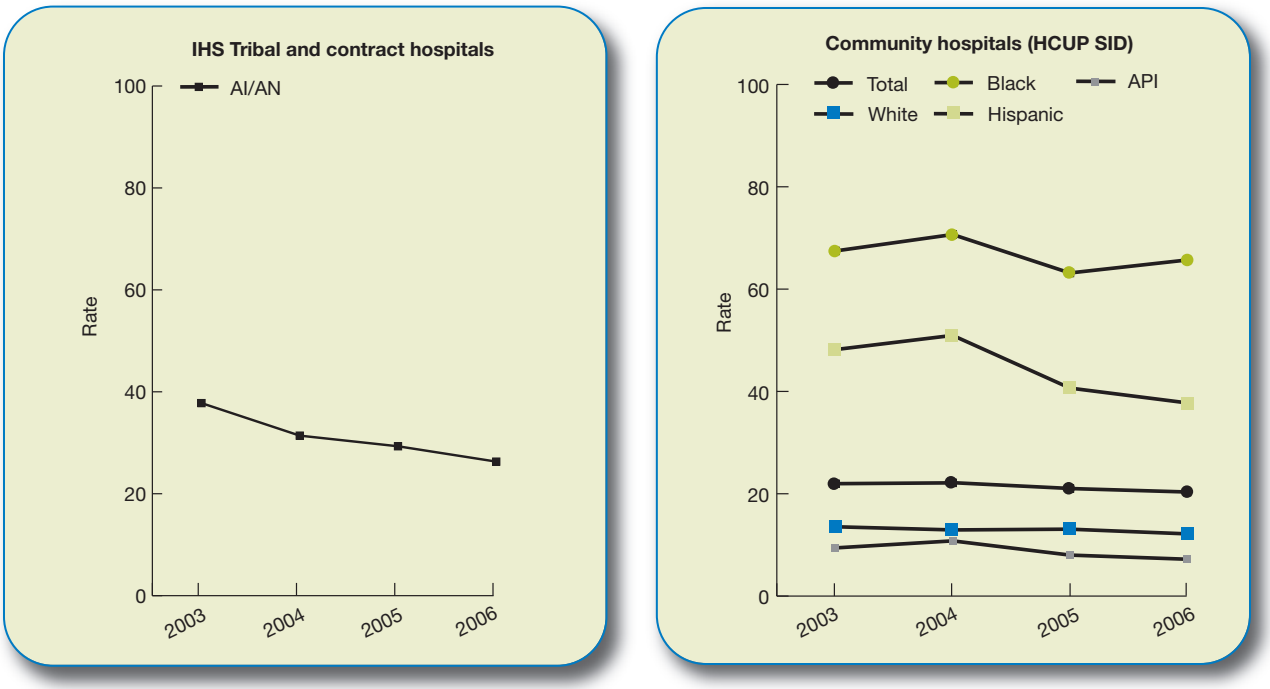
Focus on Indian Health Service Facilities

Nationwide, many AI/ANs who are members of a federally recognized Tribe rely on the IHS to provide access to health care in the counties on or near reservations.[17, 18, ix] Due to low numbers and lack of data, information about AI/AN hospitalizations is difficult to obtain in most Federal and State hospital utilization data sources. The NHDR addresses this gap by examining utilization data from IHS Tribal and contract hospitals.

Diabetes is one of the leading causes of morbidity and mortality among AI/AN populations. Its prevention and control are a major focus of the IHS Director's Chronic Disease Initiative and the IHS Health Promotion/Disease Prevention Initiative. Addressing barriers to health care is a large part of the overall IHS goal of ensuring that comprehensive, culturally acceptable personal and public health services are available and accessible to AI/ANs.

[ix] Of potentially eligible AI/ANs, 74% sought health care in 2004 at an IHS or tribally contracted facility, according to the most recent published IHS estimates developed by the Office of Public Health Support, Division of Program Statistics.

Figure 4.16. Hospital admissions for uncontrolled diabetes per 100,000 population age 18 and over in IHS Tribal and contract hospitals, 2003-2006, and community hospitals, by race and ethnicity, 2003-2006

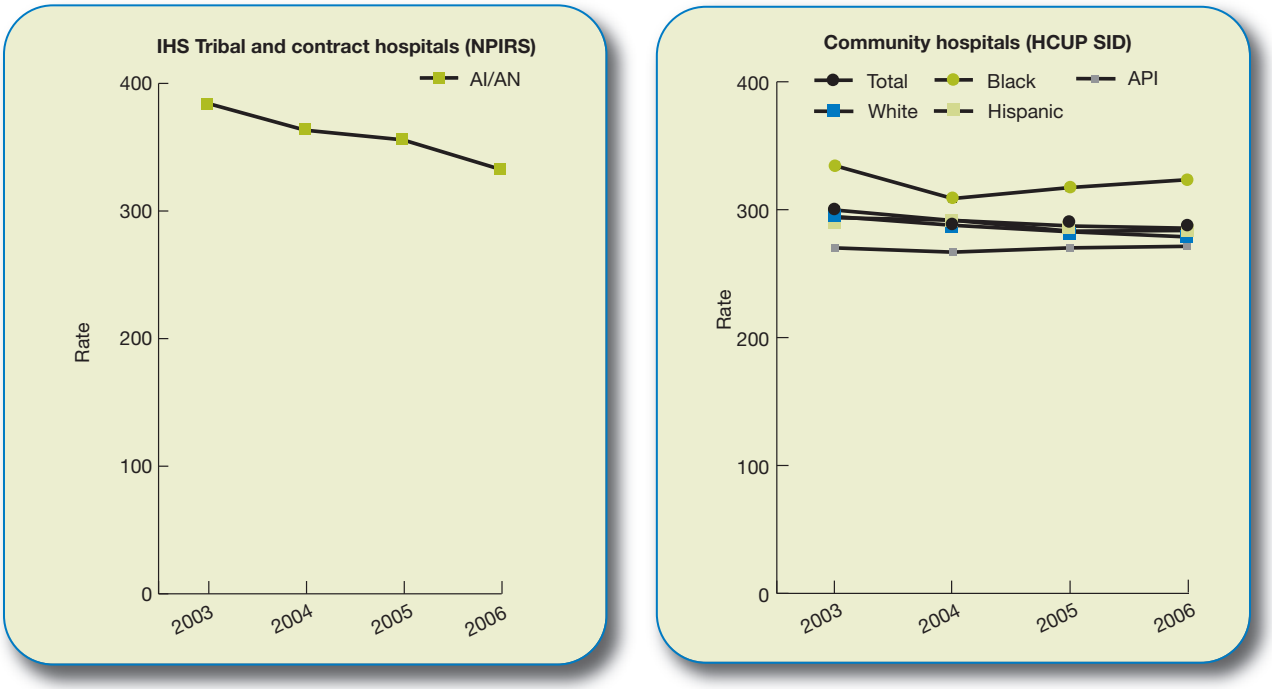


Key: AI/AN = American Indian or Alaska Native; API = Asian or Pacific Islander; HCUP SID = Healthcare Cost and Utilization Project State Inpatient Databases; NPIRS = National Patient Information Reporting System.
Source: IHS Tribal and contract hospitals: IHS, Office of Information Technology/NPIRS, National Data Warehouse, Workload and Population Data Mart; community hospitals: Agency for Healthcare Research and Quality, HCUP SID disparities analysis file, 2003-2006.
Note: White, Black, and API are non-Hispanic populations. Data are adjusted for age and gender. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 25 States that have 66% of the U.S. resident population. Years of IHS data prior to 2003 use a denominator based on the 1990 census. This source is not comparable with estimates following those years, which are based on 2000 bridged census data. Therefore, for comparing IHS with national estimates, only 2003, 2004, 2005, and 2006 data from both data sources are presented.

- From 2003 to 2006, the age-adjusted rate of hospitalizations for uncontrolled diabetes decreased for AI/ANs in IHS Tribal and contract hospitals (from 37.8 per 100,000 to 26.3 per 100,000; Figure 4.16).
- There were no statistically significant changes for other racial and ethnic groups in community hospitals during this period.

For the nearly 2 million AI/ANs estimated to be living on reservations or other trust lands in 2009 where the climate is inhospitable, roads are often impassable, and transportation is scarce, health care facilities are far from accessible.[19] These conditions contribute to high rates of perforated appendix, a problem that is receiving particular attention by IHS. Perforated appendix hospitalization rates, which decreased from 2003 to 2006, are illustrative of the efforts underway, as well as the work that needs to continue to achieve high-quality, comprehensive care that is accessible to AI/ANs.[20]

Figure 4.17. Perforated appendixes per 1,000 admissions with appendicitis, age 18 years and over in IHS Tribal and contract hospitals, and community hospitals, by race and ethnicity, 2003-2006



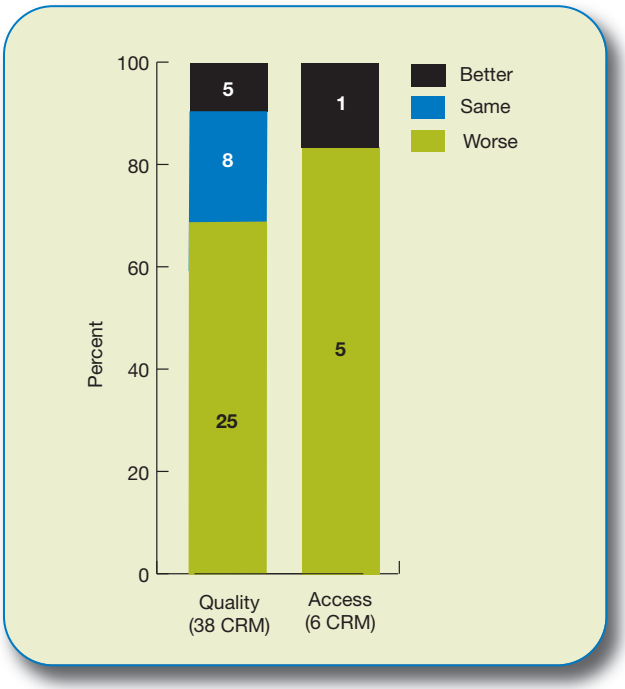
Key: AI/AN = American Indian or Alaska Native; API = Asian or Pacific Islander; HCUP SID = Healthcare Cost and Utilization Project State Inpatient Databases; NPIRS = National Patient Information Reporting System.
Source: IHS Tribal and contract hospitals: IHS, Office of Information Technology/NPIRS, National Data Warehouse, Workload and Population Data Mart, 2003-2006; community hospitals: Agency for Healthcare Research and Quality, HCUP SID disparities analysis file, 2003-2006.
Note: White, Black, and API are non-Hispanic populations. Data are adjusted for age and gender. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 25 States that have 66% of the U.S. resident population. Years of IHS data prior to 2003 use a denominator based on the 1990 census. This source is not comparable with estimates following those years, which are based on 2000 bridged census data. Therefore, for comparing IHS with national estimates, only 2003, 2004, 2005, and 2006 data from both data sources are presented.

- From 2003 to 2006, the age-adjusted rate of appendicitis hospitalizations with perforated appendix decreased for AI/ANs in IHS Tribal and contract hospitals (from 384.4 per 1,000 to 332.6 per 1,000; Figure 4.17).
- The rate in community hospitals during this period remained the same overall as well as for Whites and Blacks.

Hispanics or Latinos

Previous NHDRs showed that Hispanics had poorer quality of care and worse access to care than non-Hispanic Whites for many measures the reports track. Findings based on core report measures of quality and access to health care that support estimates for Hispanics are shown below.

Figure 4.18. Hispanics compared with non-Hispanic Whites on measures of quality and access



Better = Hispanics receive better quality of care or have better access to care than non-Hispanic Whites.
Same = Hispanics and non-Hispanic Whites receive about the same quality of care or access to care.
Worse = Hispanics receive poorer quality of care or have worse access to care than non-Hispanic Whites.
Key: CRM = core report measures (Table 1.2).
Note: Data presented are the most recent available.

Table 4.9. Hispanics compared with non-Hispanic Whites on measures of quality and access for most current data year: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
Cancer	Breast cancer diagnosed at advanced stage	Women age 40 and over who reported they had a mammogram within the past 2 years	
	Colorectal cancer diagnosed at advanced stage	Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test	
	Breast cancer deaths per 100,000 female population per year	Colorectal cancer deaths per 100,000 population per year	
Diabetes		Adults with diabetes who had three major exams in the past year	

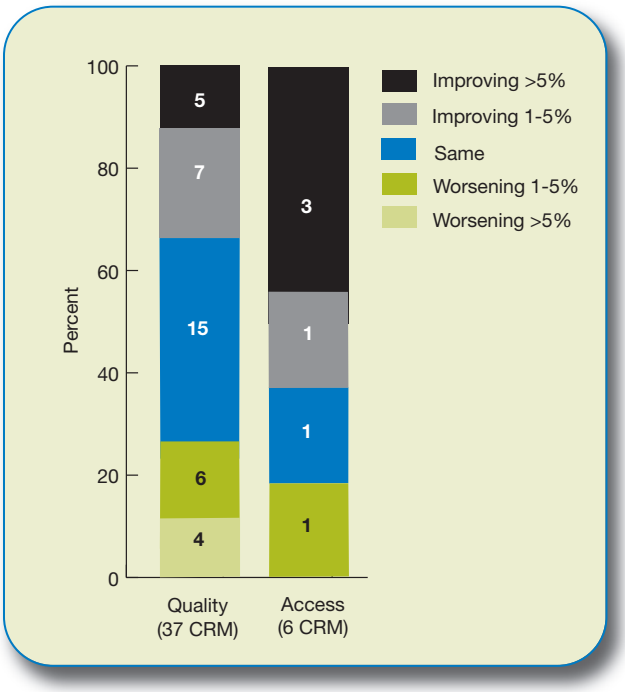
Table 4.9. Hispanics compared with non-Hispanic Whites on measures of quality and access for most current data year: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
End stage renal disease	Hemodialysis patients with urea reduction ratio 65% or higher	Dialysis patients registered on the waiting list for transplantation	
Heart disease		Hospital patients who received recommended care for heart attack	Deaths per 1,000 admissions with acute myocardial infarction as principal diagnosis, age 18 and over
		Hospital patients who received recommended care for heart failure	
HIV and AIDS		New AIDS cases per 100,000 population age 13 and over	
Maternal and child health		Children ages 3-6 with a vision check	Children ages 2-17 given advice about physical activity
		Children ages 2-17 who had a dental visit	Children ages 2-17 given advice about healthy eating
			Children ages 19-35 months who received all recommended vaccines
Mental health and substance abuse	Suicide deaths per 100,000 population	Adults age 18 and over with past year major depressive episode who received treatment for the depression in the past year	People age 12 and over who completed substance abuse treatment in the past year
Respiratory diseases		Adults age 65 and over who ever received pneumococcal vaccination	
		Hospital patients with pneumonia who received recommended care	
		Tuberculosis patients who completed a curative course of treatment within 1 year of initiation of treatment	

Table 4.9. Hispanics compared with non-Hispanic Whites on measures of quality and access for most current data year: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
Lifestyle modification		Adults with obesity given advice about exercise	
		Current smokers age 18 and over given advice to quit smoking	
Functional status preservation and rehabilitation		Female Medicare beneficiaries age 65 and over who reported ever being screened for osteoporosis	Home health care patients whose ability to walk or move around improved
Supportive and palliative care		Long-stay nursing home residents who were physically restrained	
		High-risk long-stay nursing home residents with pressure sores	
		Short-stay nursing home residents with pressure sores	
		Home health care patients who were admitted to the hospital	
Patient safety		Appropriate timing of antibiotics received by adult Medicare patients having surgery	Adults age 65 and over who received potentially inappropriate prescription medications
Timeliness		Adults who can sometimes or never get care for illness or injury as soon as wanted	Failure to rescue
Patient centeredness		Poor provider-patient communication—adults	
		Poor provider-patient communication—children	
Access	People who were unable to get or delayed in getting needed medical care, dental care, or prescription medications	People under age 65 with health insurance	
		People under age 65 uninsured all year	
		People who have a specific source of ongoing care	
		People who have a usual primary care provider	
		People without a usual source of care due to a financial or insurance reason	

Figure 4.19. Change in Hispanic-non-Hispanic White disparities over time



Improving >5% = Hispanic-non-Hispanic White difference becoming smaller at an average annual rate greater than 5%.
Improving 1-5% = Hispanic-non-Hispanic White difference becoming smaller at an average annual rate between 1% and 5%.
Same = Hispanic-non-Hispanic White difference not changing.
Worsening 1-5% = Hispanic-non-Hispanic White difference becoming larger at an average annual rate between 1% and 5%.
Worsening >5% = Hispanic-non-Hispanic White difference becoming larger at an average annual rate greater than 5%.
Key: CRM = core report measures (Table 1.2).
Note: The time period for this figure is the most recent and oldest years of data used in the NHDR. Only 43 core report measures could be tracked over time for Hispanics and non-Hispanic Whites.

Table 4.10. Change in Hispanic-non-Hispanic White disparities over time: Specific measures

Topic	Improving	Worsening	Same
Cancer	Women age 40 and over who reported they had a mammogram within the past 2 years	**Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test**	Breast cancer diagnosed at advanced stage
	Colorectal cancer diagnosed at advanced stage	Colorectal cancer deaths per 100,000 population per year	Cancer deaths per 100,000 female population per year for breast cancer
Diabetes			Adults with diabetes who had three major exams in the past year
End stage renal disease		Hemodialysis patients with urea reduction ratio 65% or higher	Dialysis patients registered on a waiting list for transplantation
Heart disease	**Hospital patients with heart attack who received recommended hospital care**	**Hospital patients with heart failure who received recommended hospital care**	Heart attack mortality
HIV and AIDS	New AIDS cases per 100,000 population age 13 and over		

Table 4.10. Change in Hispanic-non-Hispanic White disparities over time: Specific measures

Topic	Improving	Worsening	Same
Maternal and child health	Children ages 2-17 given advice about healthy eating	Children ages 2-17 given advice about exercise	Children ages 3-6 with a vision check
	Children ages 2-17 who had a dental visit in the past year		Children ages 19-35 months who received all recommended vaccines
Mental health and substance abuse		Suicide deaths per 100,000 population	People age 12 and over who needed treatment for any illicit drug use and who received such treatment at a specialty facility in the past year
			Adults age 18 and over with past year major depressive episode who completed treatment for the depression in the past year
Respiratory diseases		Adults age 65 and over who ever received pneumococcal vaccination	Tuberculosis patients who completed a curative course of treatment within 1 year of initiation of treatment
		Hospital patients with pneumonia who received recommended hospital care	
Lifestyle modification	Current smokers age 18 and over given advice to quit smoking	Adults with obesity given advice about exercise	
Functional status preservation and rehabilitation			Home health care patients whose ability to walk or move around improved
Supportive and palliative care			Long-stay nursing home residents who were physically restrained
			High-risk long-stay nursing home residents who have pressure sores
			Short-stay nursing home residents who have pressure sores
			Home health care patients who were admitted to the hospital

Table 4.10. Change in Hispanic-non-Hispanic White disparities over time: Specific measures

Topic	Improving	Worsening	Same
Patient safety	**Appropriate timing of antibiotics received by adult Medicare patients having surgery**	**Adults age 65 and over who received potentially inappropriate prescription medications**	Failure to rescue
Timeliness	**Adults who can sometimes or never get care for illness or injury as soon as wanted**		
Patient centeredness	**Poor provider-patient communication—adults** **Poor provider-patient communication—children**		
Access	**People under age 65 with health insurance** People under age 65 uninsured all year **People who have a specific source of ongoing care** **People without a usual source of care due to a financial or insurance reason**	People who were unable to get or delayed in getting needed medical care, dental care, or prescription medications	People who have a usual primary care provider

Note: Measures in bold indicate improvement or worsening at a rate of greater than 5% per year.

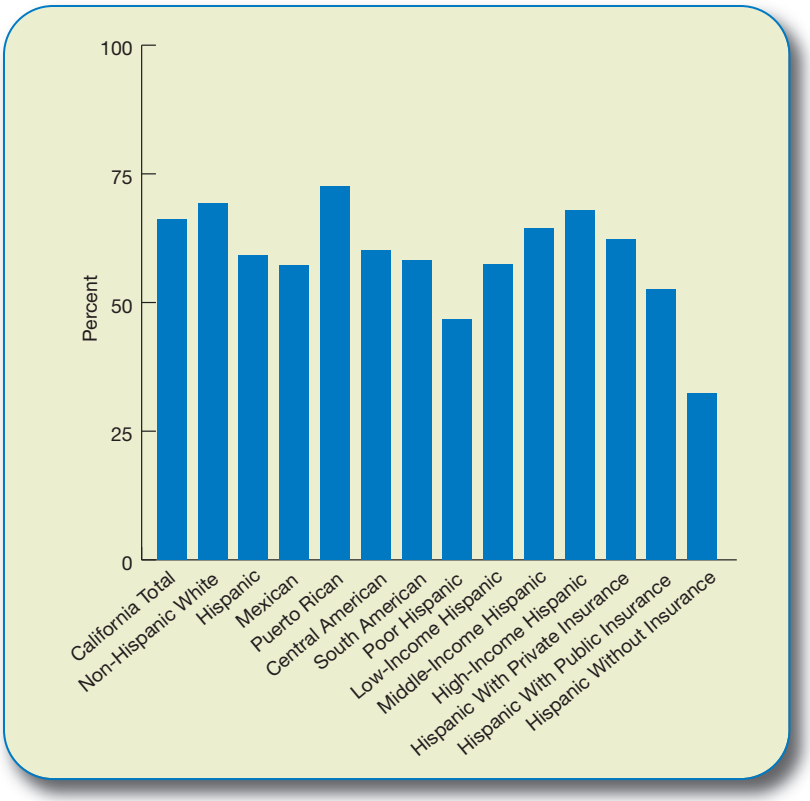
Focus on Hispanic Subpopulations

The Hispanic population in the United States is highly heterogeneous. Almost 60% of all Hispanics in the country are those of Mexican extraction, making this group the largest subpopulation. People originating from Puerto Rico, Central America, and South America are the next largest subgroups. Variation is seen in access to and quality of health care among Hispanics related to country of origin. Findings are presented below on differences among different Hispanic subpopulations on four quality measures focusing on prevention, chronic care management, and patient centeredness: colorectal cancer screening, diabetes management, and provider-patient communication. In addition, this section reports findings on one access measure, uninsurance.

This section also features selected measures from the CHIS. CHIS is an example of a data source that can provide data for Hispanic subgroups. In 2008, California's Hispanic population was more than twice the percentage in the United States overall (36.6% in California compared with 15.4% of the 2008 U.S. population).[9] Almost 30% of the Hispanic population in the United States lives in California.[21]

CHIS data show disparities among Hispanics in California, not only compared with non-Hispanic Whites but also within Hispanic subgroups (Mexican, Puerto Rican, Central American, and South American). The data also show disparities across Hispanic subgroups by income and insurance status. This section shows only some of the significant disparities for these groups in California from CHIS data. The selected measures in this section are limited to a subset of measures available to supplement the existing national measures used in the report.

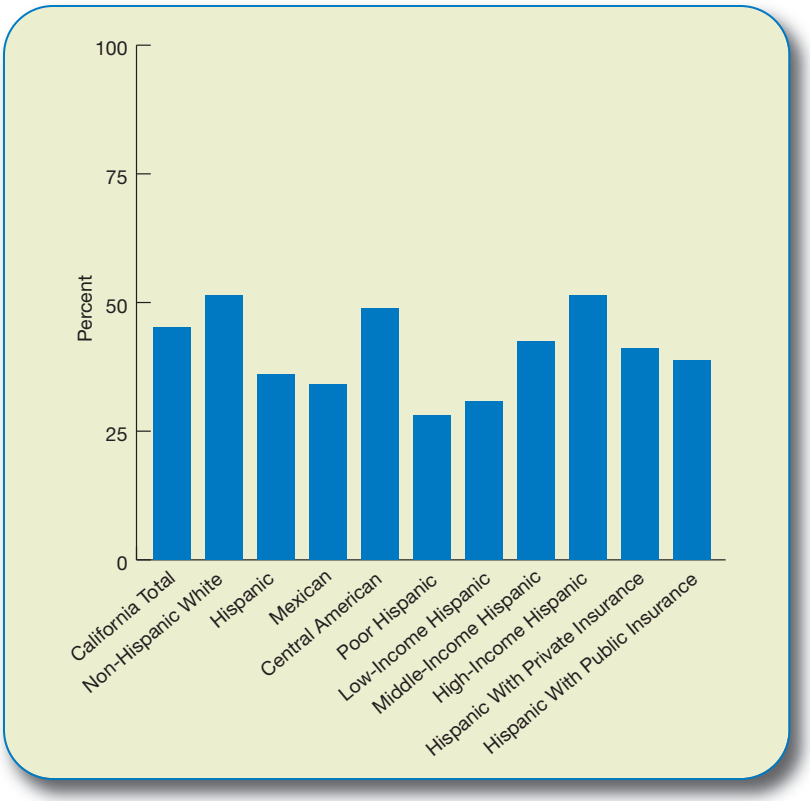
Figure 4.20. Adults age 50 and over who received a sigmoidoscopy, colonoscopy, or fecal occult blood test in the past 5 years, California only, by race, Hispanic subgroup, income, and insurance status, 2007



Source: University of California, Los Angeles, Center for Health Policy Research, California Health Interview Survey, 2007.
Denominator: Civilian noninstitutionalized adults age 50 and over in California.
Note: Income groups are all Hispanic. For this measure, public insurance includes people with Medicare and/or Medicaid coverage.

- Overall, Hispanics had a lower percentage than Whites of adults age 50 and over who had colorectal cancer screening (59.2% compared with 69.2%; Figure 4.20). Mexicans also had a lower percentage than Whites (57.2% compared with 69.2%). There were no statistically significant differences among Hispanic subgroups.
- Among Hispanics, poor people and low-income people had a lower percentage than high-income people of adults age 50 and over who had colorectal cancer screening (46.8% and 57.5%, respectively, compared with 67.9%).
- Among Hispanics, adults age 50 and over with public insurance were less likely to have colorectal cancer screening than people with private insurance (52.6% compared with 62.2%). Adults age 50 and over who were uninsured were almost half as likely as people with private insurance to have colorectal cancer screening (32.4% compared with 62.2%).

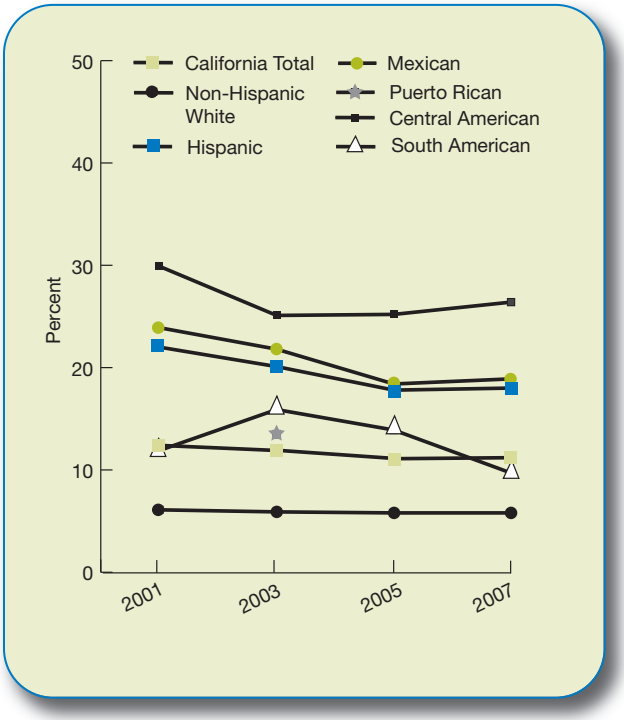
Figure 4.21. People age 40 and over with diabetes who had hemoglobin A1c testing, eye examination, and foot examination within the past year, California only, by ethnicity, income, and insurance status, 2007

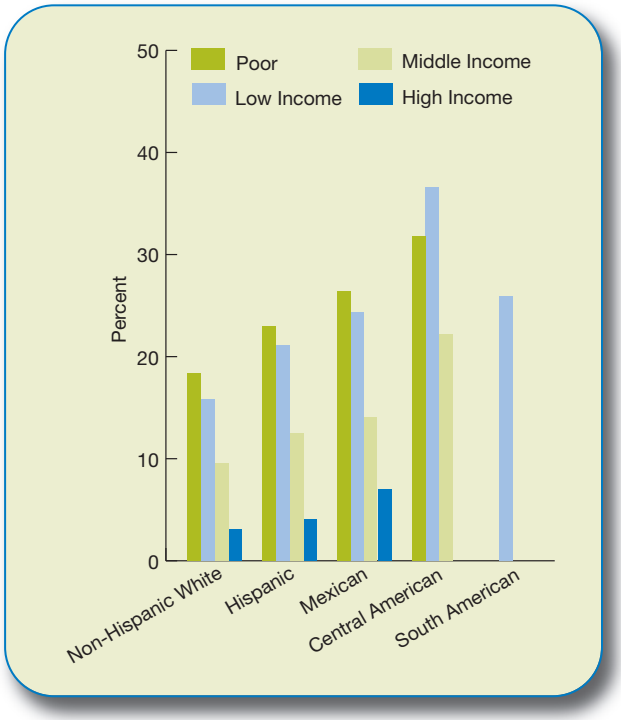


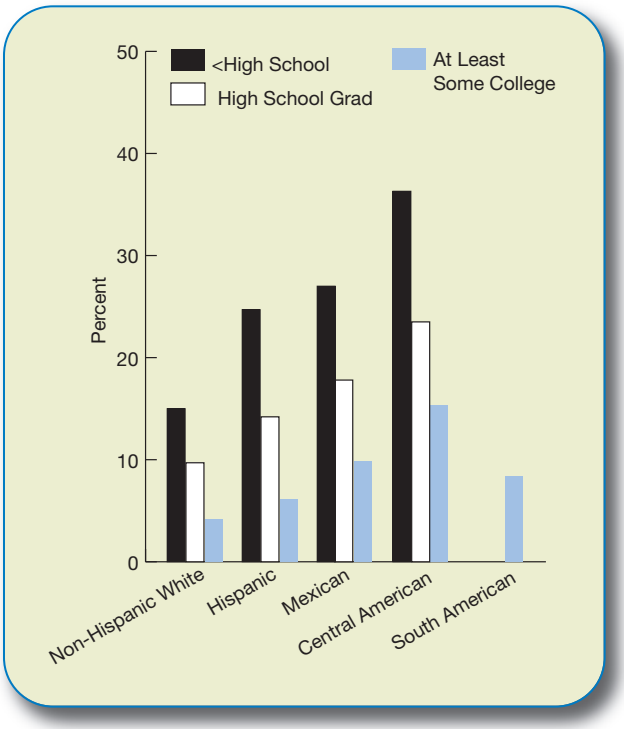
Source: University of California, Los Angeles, Center for Health Policy Research, California Health Interview Survey, 2007.
Denominator: Civilian noninstitutionalized adults age 40 and over in California with diabetes.
Note: Income groups are all Hispanic. Data did not meet criteria for statistical reliability for Puerto Ricans, South Americans, and uninsured Hispanics.

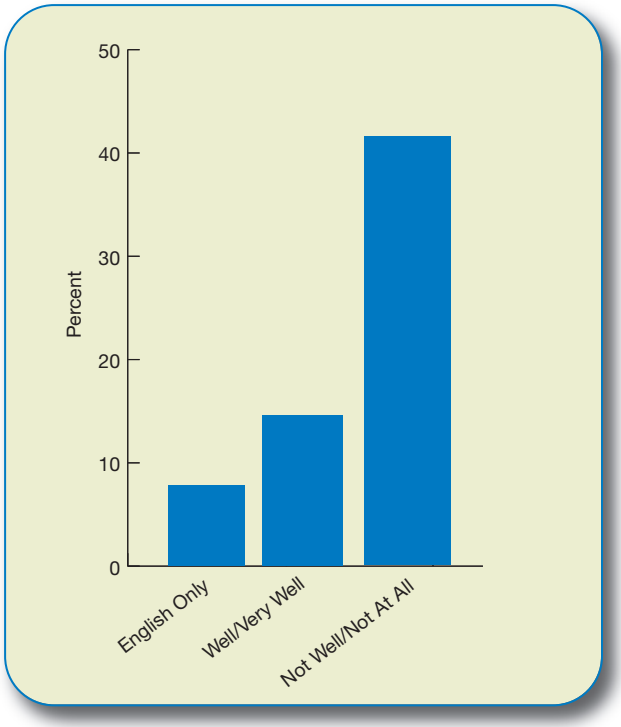
- Overall, Hispanics in California age 40 and over with diabetes were less likely than non-Hispanic Whites to have had all three recommended services for diabetes (36.0% compared with 51.4%; Figure 4.21).
- There were no statistically significant differences among Hispanic subgroups in recommended care for diabetes.
- Among Hispanics, the percentage of adults in California with diabetes who received all three recommended diabetes-related exams was lower for poor people (28.0%) and for low-income people (30.8%) than for high-income people (51.3%).
- The percentage of Hispanic adults age 40 and over with diabetes who received all three recommended services for diabetes was not significantly different between people with any private insurance and people with public insurance.

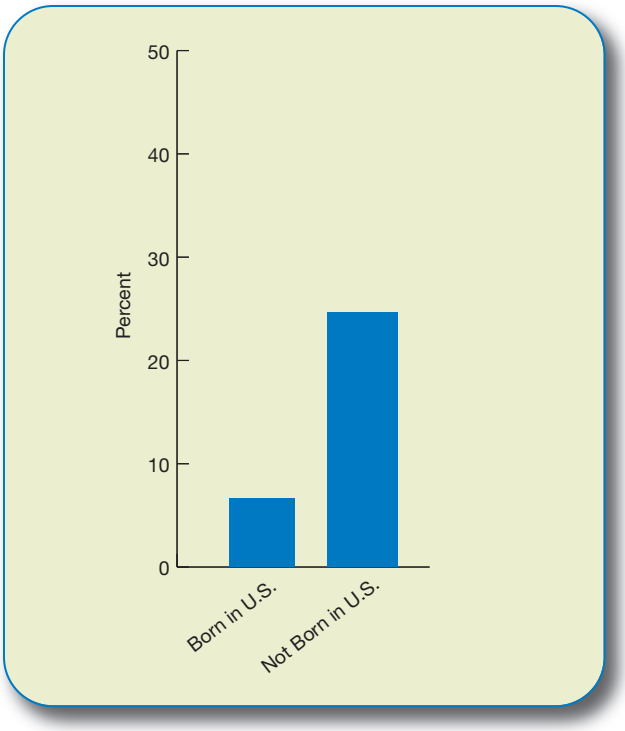
Figure 4.22. People under age 65 uninsured all year, California only, by ethnicity and Hispanic subgroup, 2001, 2003, 2005, and 2007; by Hispanic subgroup, stratified by income; by education; by English proficiency; and by place of birth, 2007









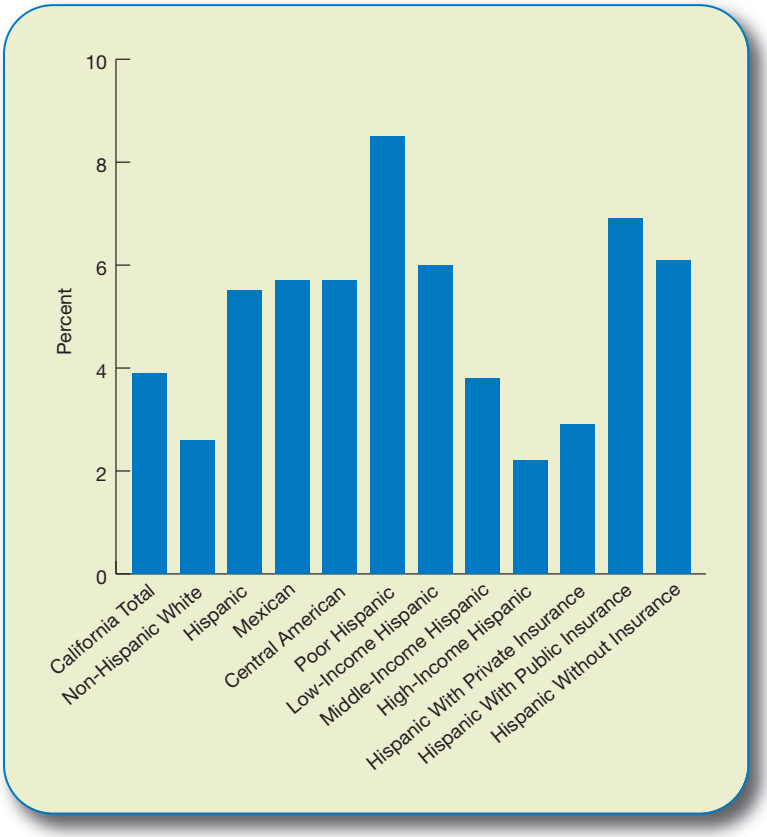


Source: University of California, Los Angeles, Center for Health Policy Research, California Health Interview Survey, 2001, 2003, 2005, and 2007.
Denominator: Civilian noninstitutionalized population under age 65 in California.
Note: Data did not meet criteria for statistical reliability for Puerto Ricans for data years 2001, 2005, and 2007, for Puerto Rican income and education groups, and for South American income and education groups except low income and some college.

- Overall, the percentage of Californians under age 65 who were uninsured all year decreased from 12.4% in 2001 to 11.2% in 2007 (Figure 4.22). For Hispanics, the percentage who were uninsured also decreased from 22.0% in 2001 to 18.0% in 2007.
- In 2007, the percentage of Californians under age 65 who were uninsured all year was about three times as high for Hispanics as for non-Hispanic Whites (18.0% compared with 5.8%) overall. Among Hispanic subgroups, the percentage was about three times as high for Mexicans (18.9%) and about four times as high for Central Americans (26.4%) compared with non-Hispanic Whites (5.8%).
- Among Hispanics, the percentage of people uninsured all year was more than five times as high for poor people (23.0%) as for high-income people (4.1%). For low-income people, the percentage was also more than five times as high (21.1%). The percentage was about three times as high for middle-income people (12.5%).
- Across all income groups, Mexicans were more likely to be uninsured all year than non-Hispanic Whites. However, Central Americans had the highest rate of being uninsured all year among poor people and low-income people.
- Among Hispanics, the percentage of people uninsured all year was more than four times as high for people with less than a high school education (24.7%) and more than twice as high for high school graduates (14.2%) compared with people with at least some college education (6.1%).
- Across all education groups, Central Americans had the highest rate of being uninsured all year. Mexicans also had higher rates than non-Hispanic Whites across all education groups.

- Among Hispanics, the percentage of people who were uninsured all year was five times as high for people who did not speak English well or at all as for people who were native English speakers (41.5% compared with 7.8%). The percentage of people who were uninsured all year was almost twice as high for people who speak English well or very well as for native English speakers (14.6% compared with 7.8%).
- Among Hispanics, the percentage of people who were uninsured all year was almost four times as high for people who were not born in the United States as for people who were born in the United States.

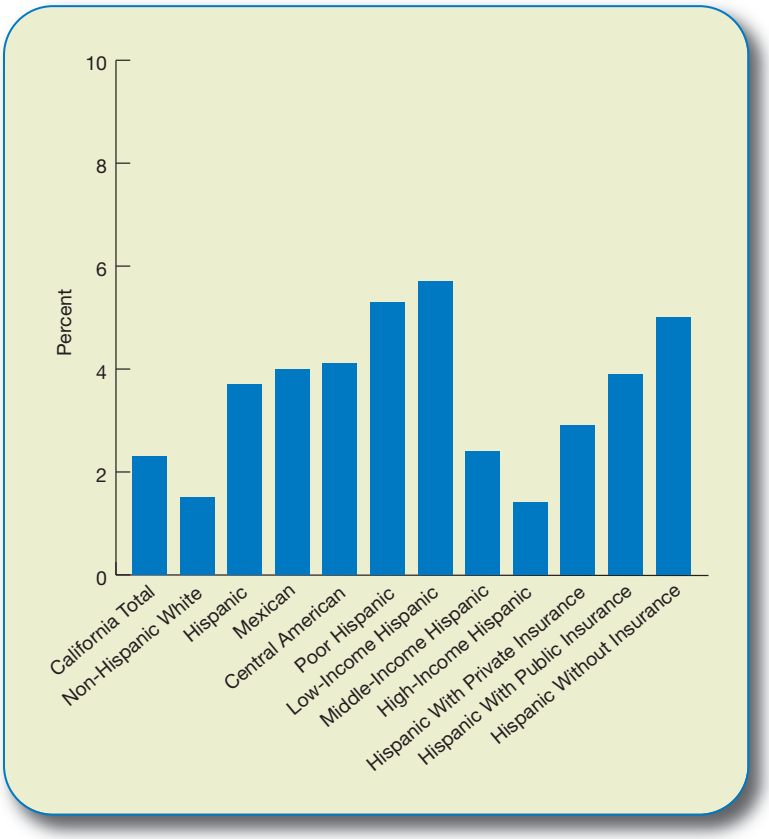
Figure 4.23. Adults age 18 and over who reported difficulty understanding their doctor during their last visit within the past 2 years, California only, by ethnicity, Hispanic subgroup, income, and insurance status, 2007



Source: University of California, Los Angeles, Center for Health Policy Research, California Health Interview Survey, 2007.
Denominator: Civilian noninstitutionalized adults in California age 18 and over.
Note: Income groups are all Hispanic. Data did not meet criteria for statistical reliability for Puerto Rican and South American subgroups.

- Overall, Hispanics age 18 and over were more likely than non-Hispanic Whites to have difficulty understanding their doctor (5.5% compared with 2.6%; Figure 4.23). Mexicans and Central Americans were also more likely than non-Hispanic Whites to have difficulty understanding their doctor (5.7% and 5.7%, respectively, compared with 2.6%).
- Among Hispanics, poor adults (8.5%), low-income adults (6.0%), and middle-income adults (3.8%) were more likely than high-income adults (2.2%) to have difficulty understanding their doctor.
- Among Hispanics, adults with public insurance and adults without insurance were more likely to have difficulty understanding their doctor than those with private insurance (6.9% and 6.1%, respectively, compared with 2.9%).

Figure 4.24. Adults age 18 and over who reported language as the reason they had difficulty understanding their doctor during their last visit within the past 2 years, California only, by ethnicity, Hispanic subgroup, income, and insurance status, 2007



Source: University of California, Los Angeles, Center for Health Policy Research, California Health Interview Survey, 2007.
Denominator: Civilian noninstitutionalized adults in California age 18 and over.
Note: Income groups are all Hispanic. Data did not meet criteria for statistical reliability for Puerto Rican and South American subgroups.

- Hispanics had a higher percentage than non-Hispanic Whites who reported language as the reason they had difficulty understanding their doctor during their last visit (3.7% compared with 1.5%; Figure 4.24). Among Hispanics, Mexicans (4.0%) and Central Americans (4.1%) had a higher percentage than non-Hispanic Whites (1.5%).
- Among Hispanics, poor and low-income adults had a higher percentage than high-income adults who reported language as the reason they had difficulty understanding their doctor during their last visit (5.3% and 5.7%, respectively, compared with 1.4%).
- Among Hispanics, people without insurance had a higher percentage than people with private insurance who reported language as the reason they had difficulty understanding their doctor during their last visit (5.0% compared with 2.9%).

Recent Immigrants and Limited-English-Proficient Populations

Recent Immigrants

Immigrants often encounter barriers to high-quality health care. In 2003, about 11.7% (33.5 million of the 286 million people living in the United States) were born outside the United States, up from 7.9% (20 million) in 1990.[22] Asians and Hispanics are much more likely to be foreign born than are Whites or Blacks. About 70% of Asians and 40% of Hispanics in the United States are foreign born, compared with about 4% of Whites and 6% of Blacks.[23]

Certain diseases are concentrated among Americans born in other countries. For example, in 2006, 56.6% of tuberculosis cases in the Nation were among foreign-born individuals.[24] In addition, the case rate among foreign-born individuals is more than 10 times as high as the case rate among individuals born in the United States.[24] However, the case rates for tuberculosis among U.S.-born and foreign-born individuals are both decreasing.[24]

Language Barriers

Quality health care requires that patients and providers communicate effectively. People who speak a language other than English at home may have less access to resources, such as health insurance, that facilitate getting needed health care. Providers' and patients' ability to communicate clearly with one another can be compromised if they do not speak the same language. Quality may suffer if patients with limited English proficiency cannot express their care needs to providers who speak English only and do not have an interpreter's assistance.

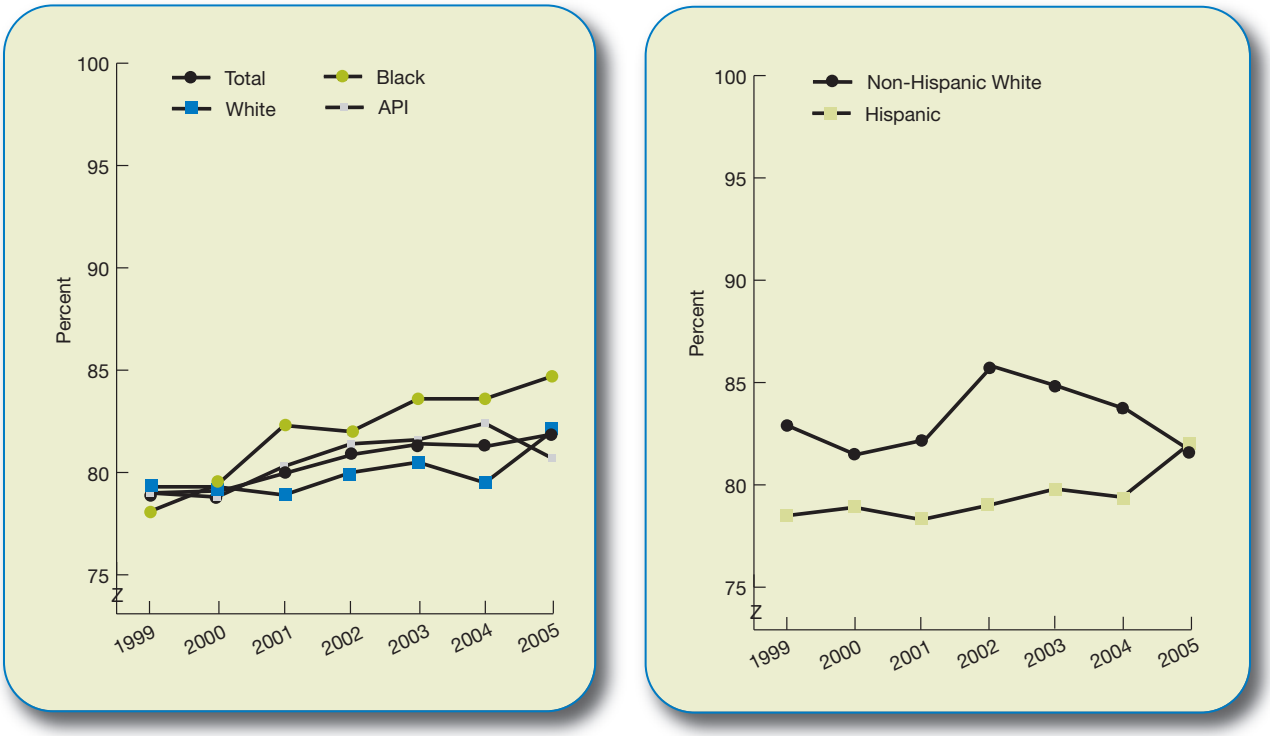
Communication problems between the patient and provider can lead to lower patient adherence to medication schedules and decreased participation in medical decisionmaking. These problems also can exacerbate cultural differences that impair the delivery of quality health care. Title VI of the Civil Rights Act of 1964, 42 U.S.C. 2000d, prohibits discrimination against patients based on their national origin by providers receiving Federal financial assistance.[25] Such providers are required to take reasonable steps to provide people with limited English proficiency with a meaningful opportunity to participate in programs funded by the U.S. Department of Health and Human Services.

Limited English proficiency is a barrier to quality health care for many Americans. About 52 million Americans, or 19.4% of the population, spoke a language other than English at home in 2000, up from 32 million in 1990. Of the 52 million, 32 million (about 12% of the population) spoke Spanish, 10 million (about 4% of the population) spoke another Indo-European language, 7.8 million (about 3% of the population) spoke an Asian or Pacific Islander language, and 2 million spoke other languages at home. Almost half of the people who spoke a foreign language at home reported not speaking English very well.[26] A study of health plan members and use of interpreters showed that the use of interpreters reduced disparities for Hispanic and Asian and Pacific Islander members (28% and 21%, respectively).[27]

Measures

As in previous NHDRs, findings are presented below for several quality and access measures based on data from the National Tuberculosis Surveillance System and the Medical Expenditure Panel Survey (MEPS). These sources also are supplemented with data from the CHIS. Information on disparities in health care quality and access for Americans born outside the United States and for Americans with limited English-speaking skills are presented for tuberculosis therapy, poor communication with health care providers, and uninsurance.

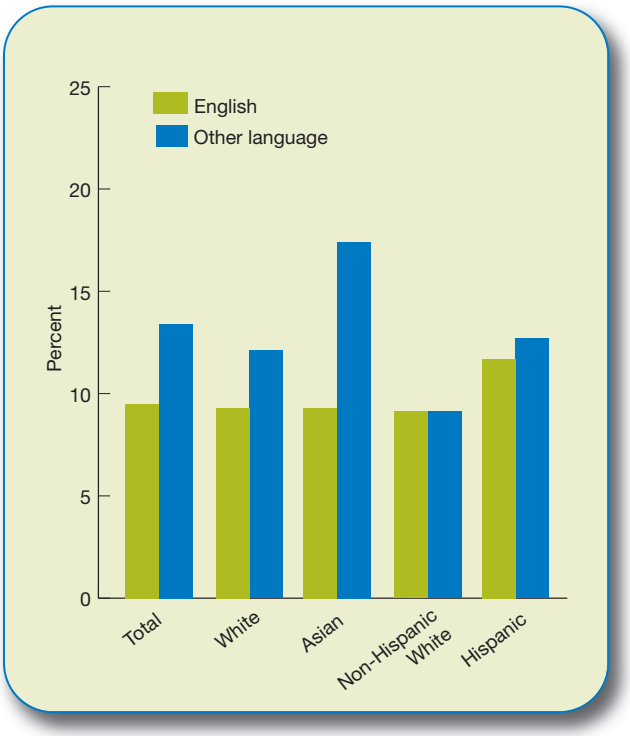
Figure 4.25. Completion of therapy for tuberculosis within 1 year of being diagnosed, people born outside the United States, by race and ethnicity, 1999-2005



Key: API = Asian or Pacific Islander.
Source: Centers for Disease Control and Prevention, National Tuberculosis Surveillance System, 1999-2005.
Denominator: Foreign-born U.S. resident population with verified tuberculosis, all ages.

- From 1999 to 2005, the percentage of people who completed therapy for tuberculosis within 1 year of being diagnosed improved for all groups, except for foreign-born non-Hispanic Whites (Figure 4.25).
- In 2005, the percentage of people who completed therapy for tuberculosis within 1 year of being diagnosed was significantly higher for foreign-born Blacks compared with foreign-born Whites (84.7% compared with 82.0%).
- There were no statistically significant differences between the percentage of foreign-born APIs and foreign-born Whites who completed therapy for tuberculosis within 1 year of being diagnosed (80.7% compared with 82.0%). Nor were there any statistically significant differences between foreign-born Hispanics and foreign-born non-Hispanic Whites (81.9% compared with 81.6%).

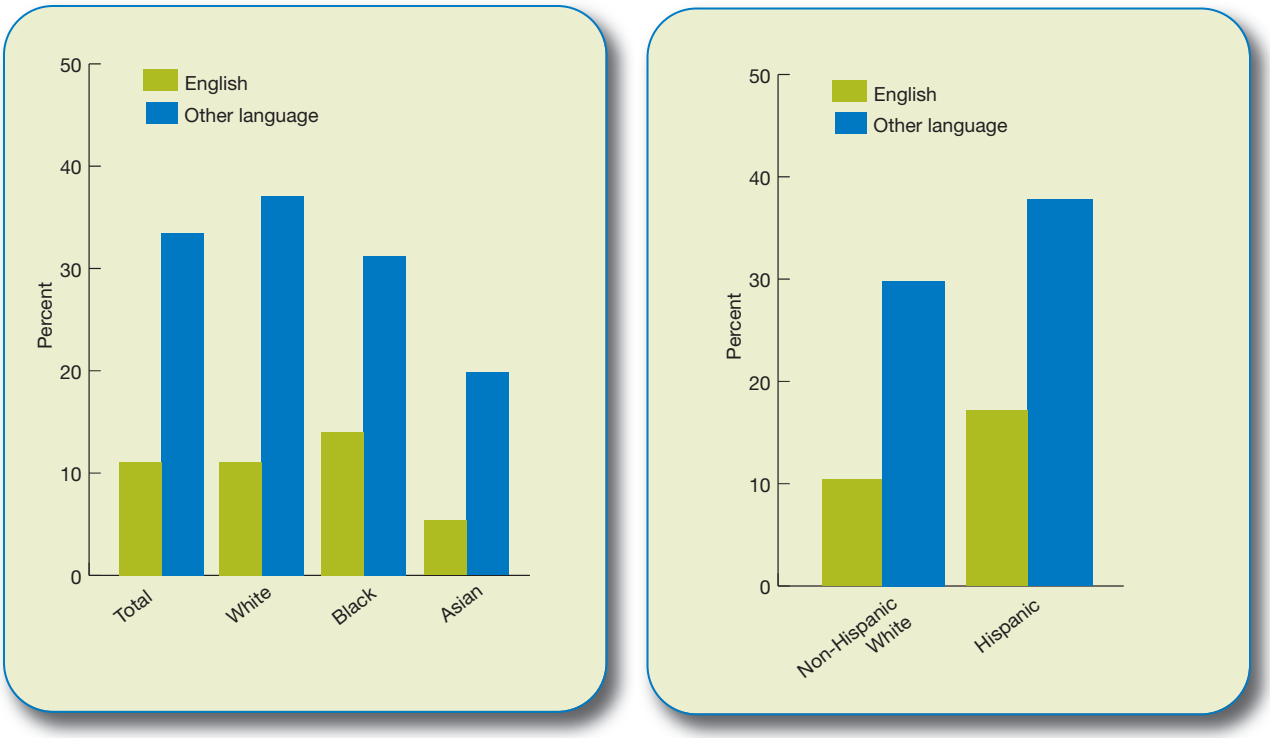
Figure 4.26. Composite measure: Adult ambulatory patients who reported poor communication with health providers, by race and ethnicity, stratified by language spoken at home, 2006



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population age 18 and over.
Note: Average percentage of adults age 18 and over who had a doctor's office or clinic visit in the last 12 months and were reported to have had poor communication with health providers (i.e., their health providers sometimes or never listened carefully, explained things clearly, showed respect for what they had to say, and spent enough time with them). Data were insufficient for this analysis for Black non-English speakers.

- The overall percentage of adults who had a doctor's office or clinic visit in the last 12 months who reported poor communication with their health providers was significantly higher for individuals who speak a foreign language at home than for individuals who speak English at home (13.4% compared with 9.5%; Figure 4.26).
- The percentage of adults who reported poor communication with their health providers was significantly higher for Whites who speak some other language at home than for Whites who speak English at home (12.1% compared with 9.3%). The percentage also was higher for Asians who speak some other language at home than for Asians who speak English at home (17.4% compared with 9.3%).
- There were no statistically significant differences for other racial or ethnic groups due to small sample sizes.

Figure 4.27. Adults under age 65 who were uninsured all year, by race and ethnicity, stratified by language spoken at home, 2006



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population ages 18-64.

- The overall percentage of adults under age 65 uninsured all year was almost three times as high for individuals who speak a foreign language at home as for individuals who speak English at home (33.5% compared with 11.5%; Figure 4.27).
- The percentage of people uninsured all year was significantly higher for Whites, Blacks, and Asians who speak some other language at home than for their counterparts who speak English at home (37.1% compared with 11.1% for Whites, 31.2% compared with 14.0% for Blacks, and 19.8% compared with 5.3% for Asians).
- The percentage of people uninsured all year was more than twice as high for Hispanics who speak some other language at home as for Hispanics who speak English at home (37.8% compared with 17.2%).

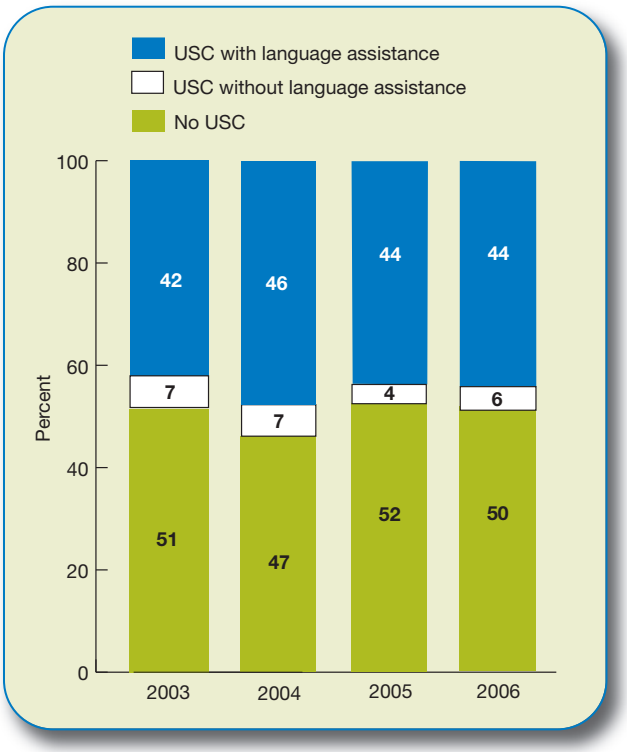
Language Assistance

Clear communication is an important component of effective health care delivery. It is vital for providers to understand patients' health care needs and for patients to understand providers' diagnoses and treatment recommendations. Communication barriers can relate to language, culture, and health literacy.

For people with limited English proficiency, having language assistance is of particular importance. People with limited English proficiency may choose a usual source of care in part based on language concordance. Not having a language-concordant provider may limit or discourage some patients from establishing a usual source of care.

The NHDR includes a noncore measure of access: provision of language assistance by the usual source of care. Language assistance includes bilingual clinicians, trained medical interpreters, and bilingual receptionists and other informal interpreters.

Figure 4.28. Adults with limited English proficiency, by whether they had a usual source of care with or without language assistance, 2003-2006



Key: USC = usual source of care.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2003-2006.
Denominator: Civilian noninstitutionalized population age 18 and over.
Note: Language assistance includes bilingual clinicians, trained medical interpreters, and informal interpreters (e.g., bilingual receptionists).

- Half of individuals with limited English proficiency did not have a usual source of care in 2006 (Figure 4.28).
- In 2006, less than half (44%) of individuals with limited English proficiency had a usual source of care who offered language assistance.
- In 2006, only 6% of individuals with limited English proficiency had a usual source of care that did not offer language assistance.

Low-Income Groups

In this report, poor populations are defined as people living in families whose household income falls below specific poverty thresholds. These thresholds vary by family size and composition and are updated annually by the U.S. Bureau of the Census.[28, x] After falling for nearly a decade (1990-2000), the number of poor people in America rose from 31.6 million in 2000 to 36.5 million in 2006, and the rate of poverty increased from 11.3% to 12.3% during the same period.[29]

Poverty varies by race and ethnicity. In 2006, 24% of Blacks, 21% of Hispanics, 10% of Asians, and 8% of Whites were poor.[29] People with low incomes often experience worse health and are more likely to die prematurely.[30] In general, poor populations have reduced access to high-quality care. While people with low incomes are more likely to be uninsured, income-related differences in quality of care that are independent of health insurance coverage have also been demonstrated.[31]

Previous chapters of this report described health care differences by income. This section summarizes disparities in quality of and access to health care for poor[xi] individuals compared with high-income[xii] individuals. For each core report measure, poor people can have health care that is worse than, about the same as, or better than health care received by high-income people. Only relative differences of at least 10% that are statistically significant at alpha = 0.05 are discussed in this report. Access measures focus on facilitators and barriers to health care and exclude health care utilization measures.

In addition, changes in differences related to income are examined over time. For each core report measure, racial, ethnic, and socioeconomic groups are compared with a designated comparison group at different times. Consistent with Healthy People 2010, disparities are measured in relative terms as the percentage difference between each group and a comparison group. Changes in disparity are measured by subtracting the percentage difference from the comparison group at the baseline year from the percentage difference from the comparison group at the most recent year. The change in each disparity is then divided by the number of years between the baseline and most recent estimate to calculate change in disparity per year.

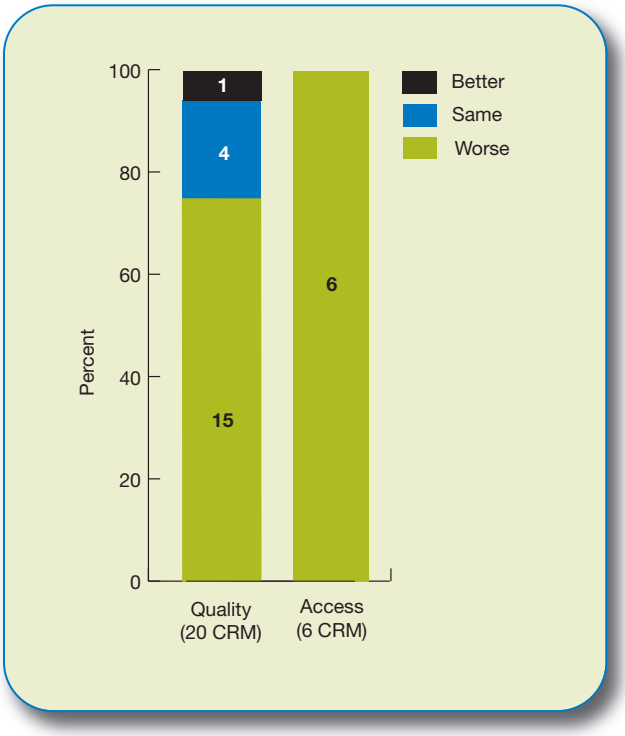
Core report measures (refer to Table 1.2) for which the relative differences are changing less than 1% per year are identified as staying the same. Core report measures for which the relative differences are becoming smaller at a rate of more than 1% per year are identified as improving. Core report measures for which the relative differences are becoming larger at a rate of more than 1% per year are identified as worsening. Changes of greater than 5% per year are also differentiated from changes of between 1% and 5% per year in some figures.

[x] For example, in 2008, the Federal poverty threshold for a family of two adults and two children was $21,834.

[xi] Household income less than Federal poverty thresholds.

[xii] Household income 400% of Federal poverty thresholds and higher.

Figure 4.29. Poor compared with high-income individuals on measures of quality and access



Better = Poor people receive better quality of care or have better access to care than high-income individuals.
Same = Poor and high-income individuals receive about the same quality of care or access to care.
Worse = Poor people receive poorer quality of care or have worse access to care than high-income individuals.
Key: CRM = core report measures (Table 1.2).
Note: Data presented are for the most recent data year available.

Table 4.11. Poor compared with high income on measures of quality and access for most current data year: Specific measures

Topic	Better than High Income	Worse than High Income	Same as High Income
Cancer		Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test	
		Women age 40 and over who reported they had a mammogram within the past 2 years	
Diabetes		Adults with diabetes who had three major exams in the past year	
Heart disease		Deaths per 1,000 admissions with acute myocardial infarction as principal diagnosis, age 18 and over	

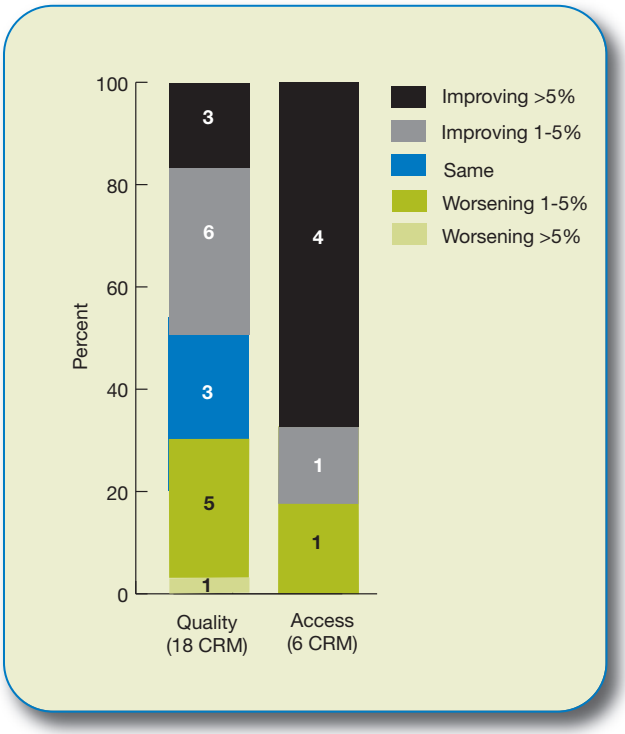
Table 4.11. Poor compared with high income on measures of quality and access for most current data year: Specific measures

Topic	Better than High Income	Worse than High Income	Same as High Income
Maternal and child health		Children ages 2-17 given advice about exercise Children ages 2-17 given advice about healthy eating Children ages 19-35 months who received all recommended vaccines Children ages 3-6 with a vision check Children ages 2-17 who had a dental visit in the past year	
Mental health and substance abuse	People age 12 and over who needed treatment for any illicit drug use and who received such treatment at a specialty facility in the past year		Adults age 18 and over with past year major depressive episode who received treatment for the depression in the past year
Respiratory diseases		Adults age 65 and over who ever received pneumococcal vaccination	
Lifestyle modification		Adults with obesity given advice about exercise	Current smokers age 18 and over given advice to quit smoking
Functional status preservation and rehabilitation		Female Medicare beneficiaries age 65 and over who reported ever being screened for osteoporosis	
Patient safety			Failure to rescue Adults age 65 and over who received potentially inappropriate prescription medications
Timeliness		Adults who can sometimes or never get care for illness or injury as soon as wanted	
Patient centeredness		Poor provider-patient communication—adults Poor provider-patient communication—children	

Table 4.11. Poor compared with high income on measures of quality and access for most current data year: Specific measures

Topic	Better than High Income	Worse than High Income	Same as High Income
Access		People under age 65 with health insurance	
		People under age 65 uninsured all year	
		People who have a specific source of ongoing care	
		People who have a usual primary care provider	
		People who were unable to get or delayed in getting needed medical care, dental care, or prescription medications	
		People without a usual source of care due to a financial or insurance reason	

Figure 4.30. Change in poor-high-income disparities over time



Improving >5% = Poor-high-income difference becoming smaller at an average annual rate greater than 5%.
Improving 1-5% = Poor-high-income difference becoming smaller at an average annual rate between 1% and 5%.
Same = Poor-high-income difference not changing.
Worsening 1-5% = Poor-high-income difference becoming larger at an average annual rate between 1% and 5%.
Worsening >5% = Poor-high-income difference becoming larger at an average annual rate greater than 5%.
Key: CRM = core report measures (Table 1.2).
Note: The time period for this figure is the most recent and oldest years of data used in the NHDR. Only 24 core report measures of quality and access could be tracked over time for poor and high-income individuals.

Table 4.12. Change in poor-high-income disparities over time: Specific measures

Topic	Improving	Worsening	Same
Cancer	**Women age 40 and over who reported they had a mammogram within the past 2 years**	**Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test**	
Diabetes		Adults with diabetes who had three major exams in the past year	
Heart disease			Deaths per 1,000 admissions with acute myocardial infarction as principal diagnosis, age 18 and over
Maternal and child health	Children ages 3-6 with a vision check	Children ages 19-35 months who received all recommended vaccines	Children ages 2-17 given advice about exercise
	Children ages 2-17 given advice about healthy eating		
	Children ages 2-17 who had a dental visit		
Mental health and substance abuse		People age 12 and over who needed treatment for any illicit drug use and who received such treatment at a specialty facility in the past year	
Respiratory diseases	Adults age 65 and over who ever received pneumococcal vaccination		
Lifestyle modification	**Current smokers age 18 and over given advice to quit smoking**	Adults with obesity given advice about exercise	
Patient safety	Adults age 65 and over who received potentially inappropriate prescription medications		Failure to rescue
Timeliness	Adults who can sometimes or never get care for illness or injury as soon as wanted		
Patient centeredness	**Poor provider-patient communication—children**	Poor provider-patient communication—adults	

Table 4.12. Change in poor-high-income disparities over time: Specific measures

Topic	Improving	Worsening	Same
Access	**People under age 65 with health insurance**	People who were unable to get or delayed in getting needed medical care, dental care, or prescription medications	
	People under age 65 uninsured all year		
	People who have a usual primary care provider		
	People without a usual source of care due to a financial or insurance reason		
	People with a specific source of ongoing care		

Note: Measures in bold indicate improvement or worsening at a rate of greater than 5% per year.

Women

The U.S. Census Bureau estimated that there were 152 million females in the United States in 2006 (51% of the U.S. population)[32]; of these, 47 million are members of racial or ethnic minority groups.[33] By 2050, it is projected that just under half of females in the United States will be members of racial or ethnic minority groups.[33] The ratio of males to females is highest at birth, when male infants outnumber female infants, and gradually declines with age due to higher male mortality rates. Among Americans age 85 and over, women outnumber men by more than 2 to 1.[34]

Women in the United States have a life expectancy 5.2 years longer than men[35] and lower age-adjusted death rates than men for 12 of the 15 leading causes of death.[36] However, women are more likely than men to report conditions that affect daily function, such as arthritis and serious mental illness.[37] There is significant variation in health status and health-related behaviors for women of different races and ethnicities.[38] In general, gender differences in quality of care are small. Access may be affected by various factors, however. For example, poverty disproportionately affects women; in 2006, 14.1% of women lived in households with incomes below the Federal poverty level compared with 11.1% of men.[39]

The NHDR tracks many measures of relevance to women. Findings presented here highlight four quality measures and one access measure of particular importance to women:

Component of health care need	Measure
Prevention	Adults with obesity given advice about healthy eating
Outcome	Heart attack mortality
Outcome	New AIDS cases
Patient safety	Obstetric trauma
Access to care	Usual source of care

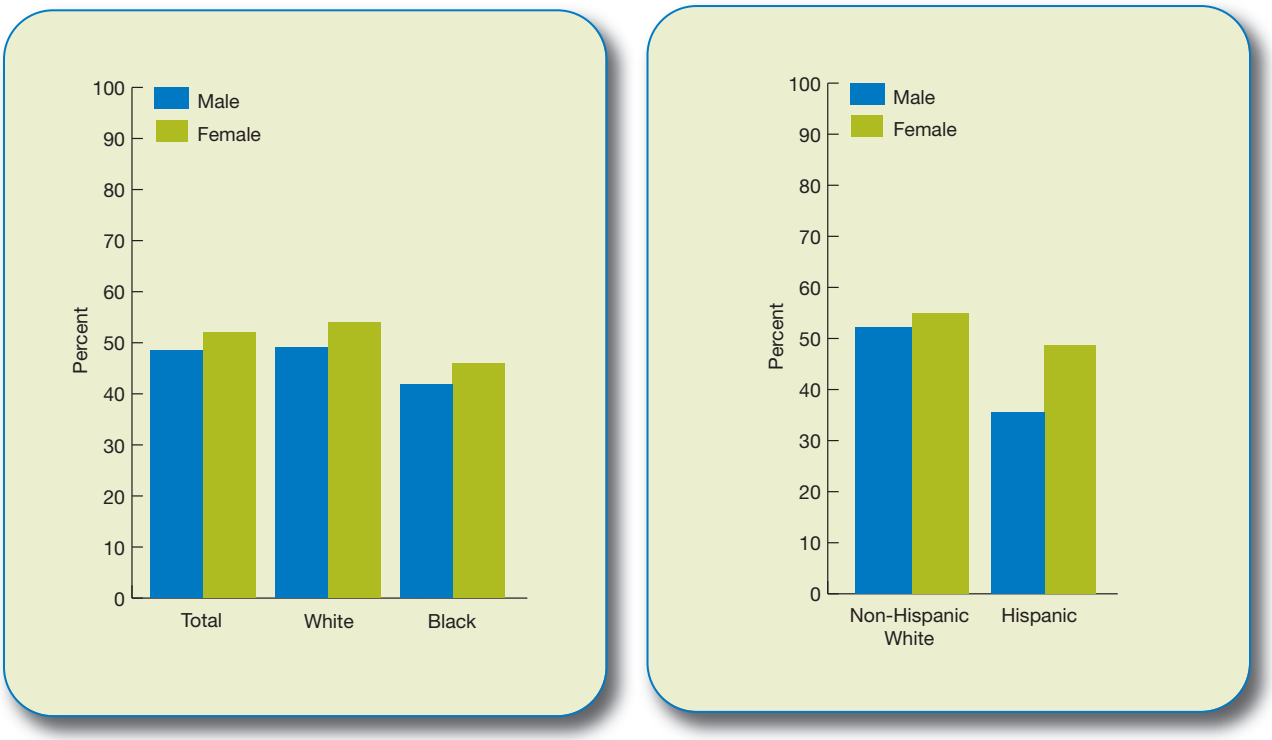
Quality of Care

Prevention: Adults With Obesity Given Advice About Healthy Eating

In 2005-2006, more than 35% of women age 20 and over in the United States were obese, compared with 33% of men,[40, xiii] putting them at increased risk for many chronic, deadly conditions, such as hypertension, cancer, diabetes, and coronary heart disease.[41] Reducing obesity is a major objective in preventing heart disease and stroke.[42] Research shows large racial and ethnic differences in obesity rates among women. The prevalence of obesity is higher for Black and Mexican-American women compared with White women.[43] 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.

[xiii] 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 4.31. Adults with obesity who ever received advice from a health provider about eating fewer high-fat or high-cholesterol foods, by race and ethnicity, stratified by gender, 2006



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population age 18 and over.
Note: Data were insufficient for this analysis for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

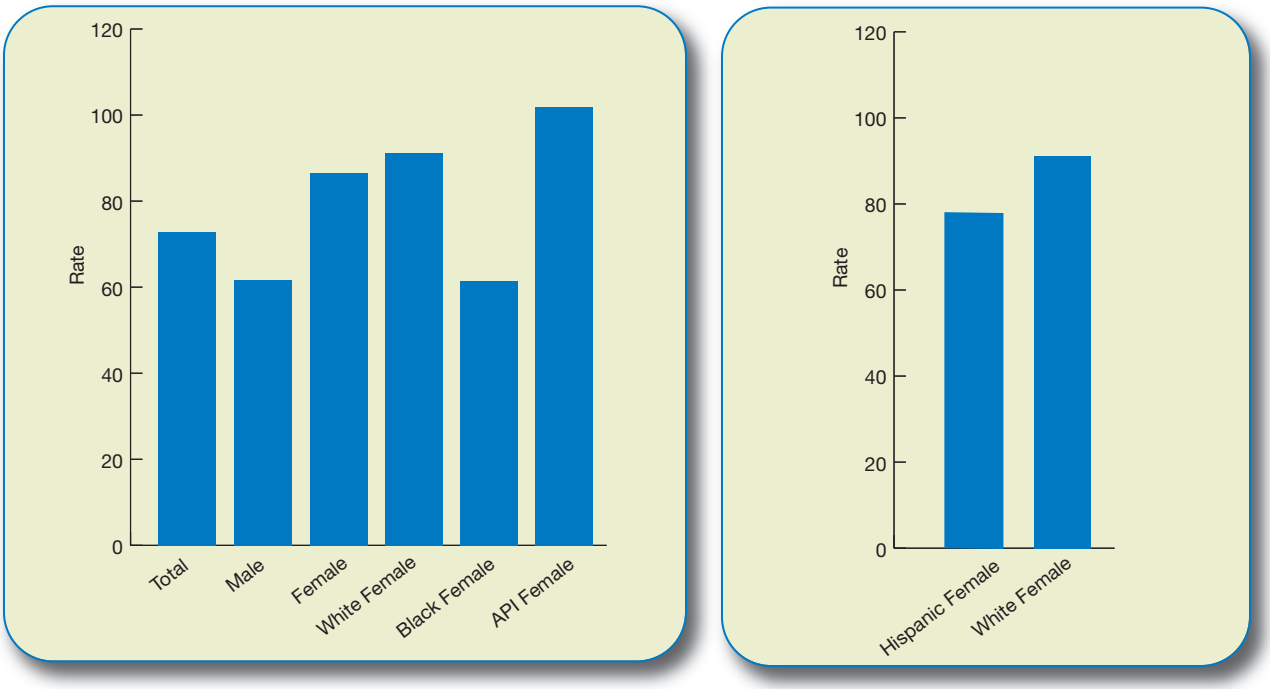
- Obese women were more likely than men to receive advice about healthy eating (52.0% compared with 48.5%; Figure 4.31).
- Among obese women, Blacks were less likely than Whites to receive advice about healthy eating (46.0% compared with 54.0%), and Hispanics were less likely than non-Hispanic Whites to receive such advice (48.7% compared with 55.0%).

Outcome: Heart Attack Mortality

Cardiovascular disease is the number one killer among women.[44] While significant progress has been made in reducing mortality from heart disease over the past three decades, one woman in four still dies from this group of conditions. Women are generally older than men when diagnosed with heart disease (73 versus 65 years on average, according to one study[45]). Therefore, treatment and outcomes may be compromised by the fact that women are more likely to have other chronic conditions when initially diagnosed.

Acute myocardial infarction (AMI) is one type of cardiovascular disease discussed in this report. Measuring processes of heart attack care can provide information about whether a patient received specific needed services, but these processes make up a very small proportion of all the care that a heart attack patient needs. Measuring outcomes of heart attack care, such as mortality, can provide a more global assessment of all the care a patient receives and usually is the aspect of quality that matters most to patients.

Figure 4.32. Deaths per 1,000 adult hospital admissions with acute myocardial infarction, by gender and race and ethnicity, 2006



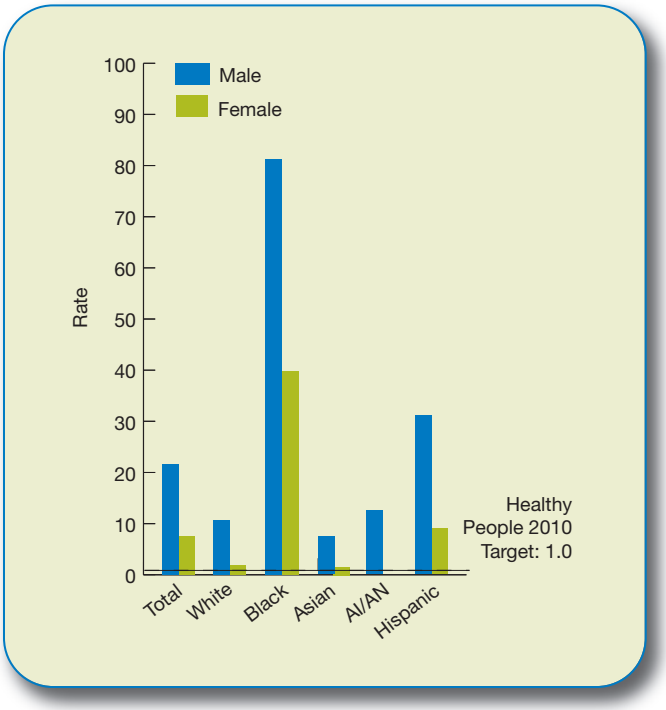
Key: API = Asian or Pacific Islander. White, Black, and API are non-Hispanic.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2006.
Note: Rates are adjusted by age, gender, age-gender interactions, and all patient refined-diagnosis related group risk-of-mortality score. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 25 States that have 66% of the U.S. resident population.

- The death rate for hospital admissions with AMI was higher for females compared with males (86.6 per 1,000 compared with 61.7 per 1,000; Figure 4.32). Among females, rates were lower both for Blacks (61.5 per 1,000) and Hispanics (78.1 per 1,000) than for Whites (91.2 per 1,000).
- There were no statistically significant differences between API females and White females in the death rate for hospital admissions with AMI.

Outcome: New AIDS Cases

Early and appropriate treatment of HIV infection can delay progression to AIDS. Improved management of HIV infections has likely contributed to reduced transmission and an associated decline in new AIDS cases. But there are gender differences in sexual behavior patterns among men and women, leading to a higher prevalence of new AIDS cases in men. The higher rates of progression from HIV to AIDS in African Americans in general, and African-American women in particular, may be a function of poor medication self-management. Interventions to improve HIV medication self-management by addressing numeracy skills may help to narrow the gap in health disparities among African-American women with HIV and AIDS.[46]

Figure 4.33. New AIDS cases per 100,000 population age 13 and over, by race/ethnicity, stratified by gender, 2007



Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Disease Control and Prevention, HIV/AIDS Surveillance System, 2007.
Denominator: U.S. population age 13 and over.
Note: The source categorizes race/ethnicity as a single item. White = non-Hispanic White; Black = non-Hispanic Black. Data did not meet criteria for statistical reliability for AI/AN females.

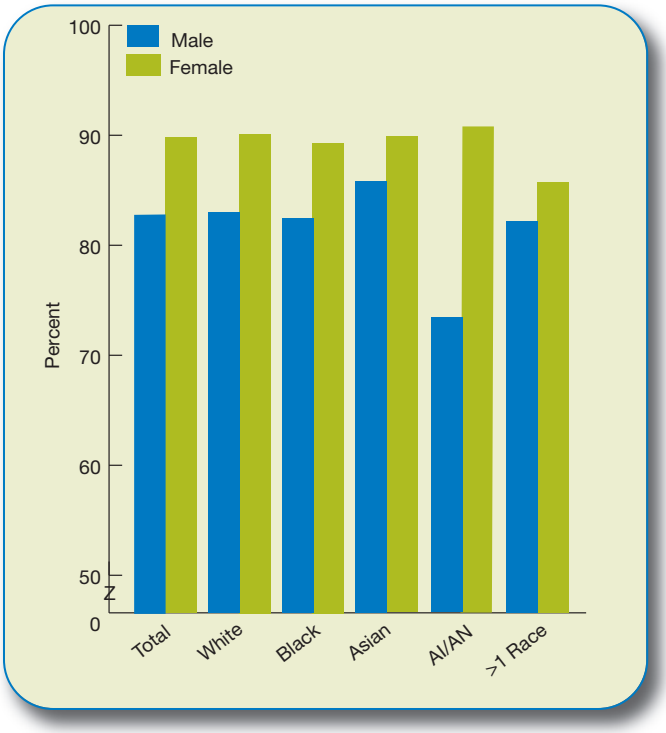
- For the overall U.S. population, the rate of new AIDS cases for males was almost triple that for females (21.6 compared with 7.5 per 100,000 population; Figure 4.33).
- The rate was significantly higher for males than for females in all groups: Blacks (81.3 per 100,000 for males and 39.8 per 100,000 for females), Asians (7.3 per 100,000 for males and 1.6 per 100,000 for females), Hispanics (31.0 per 100,000 for males and 8.9 per 100,000 for females), and Whites (10.6 per 100,000 for males and 1.8 per 100,000 for females).
- Among females, Blacks and Hispanics had significantly higher rates of new AIDS cases than Whites (39.8 and 8.9 per 100,000, respectively, compared with 1.8 per 100,000). Asian women had lower rates than White women (1.6 per 100,000 compared with 1.8 per 100,000).
- No group has yet achieved the Healthy People 2010 target of 1.0 new AIDS case per 100,000 population.

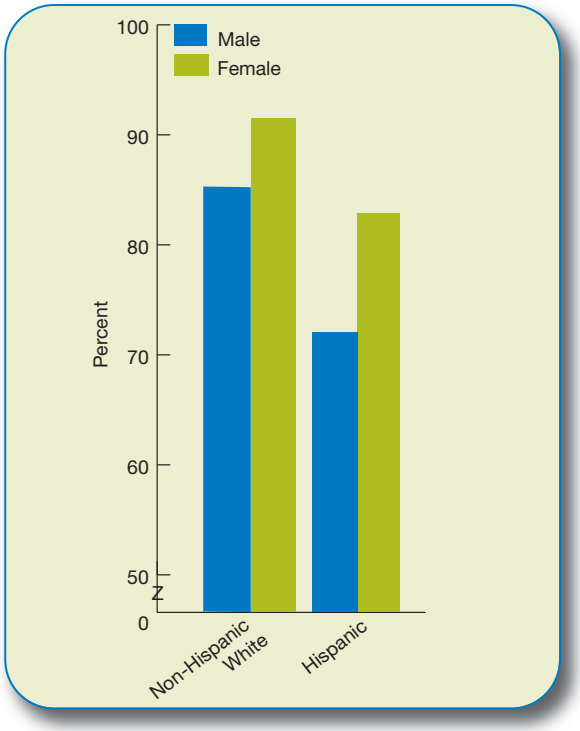
Access to Care

Usual Source of Care

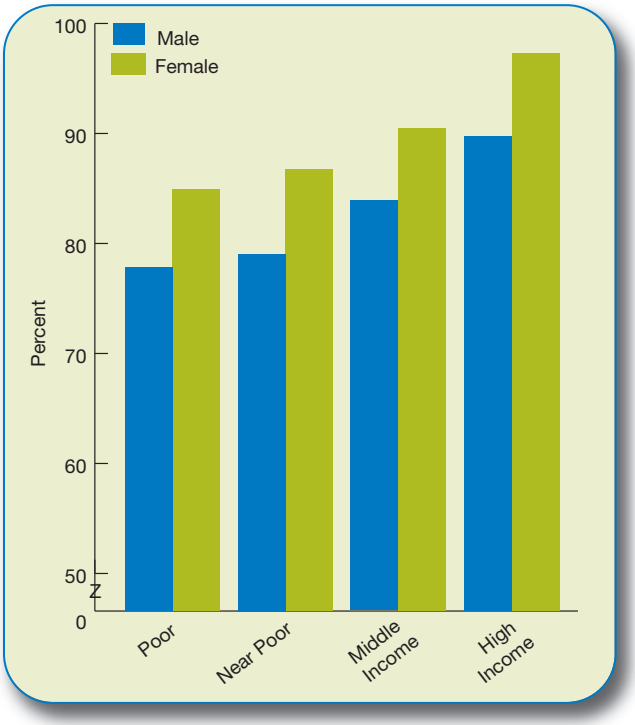
Higher costs, poorer outcomes, and greater disparities are observed among individuals without a usual source of care.[47] Women tend to have a usual source of care more often than men, but disparities are seen among women in different income groups.

Figure 4.34. People with a specific source of ongoing care, by race, ethnicity, and income, stratified by gender, 2007



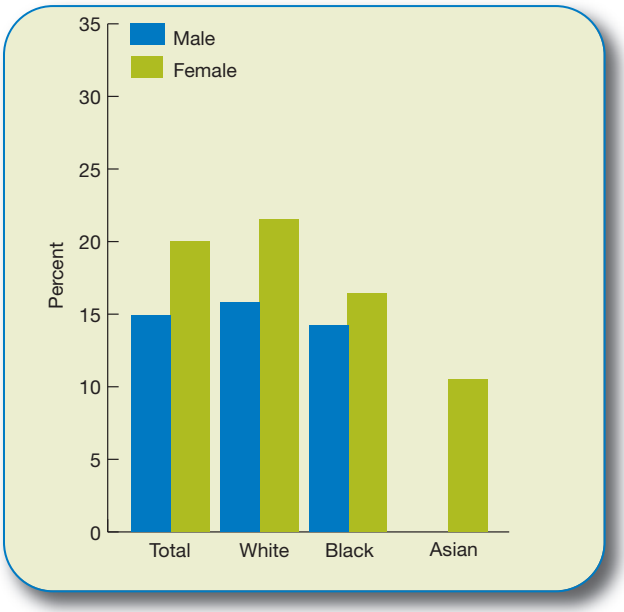


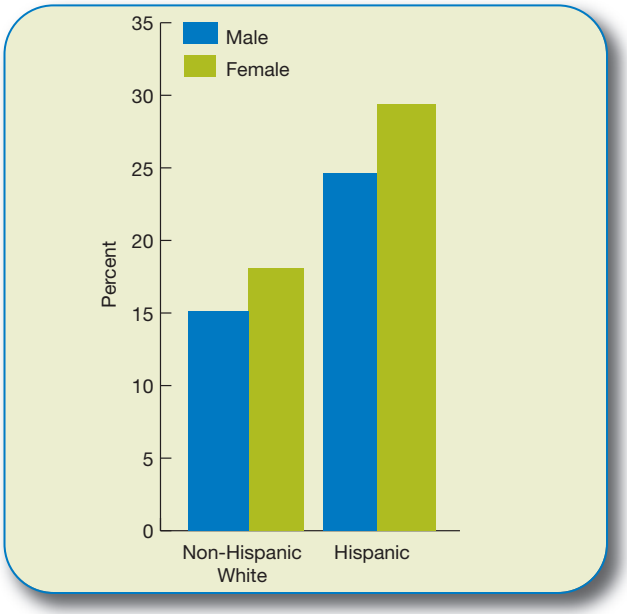
- Overall, the percentage of people with a specific source of ongoing care was significantly higher for females than for males (89.8% compared with 82.8%; Figure 4.34).
- The percentage was also significantly higher for females than for males among all racial and ethnic groups: Whites (89.9% for females compared with 82.8% for males), Blacks (89.0% compared with 82.2%), Asians (89.6% compared with 85.5%), AI/ANs (90.5% compared with 73.1%), non-Hispanic Whites (91.5% compared with 85.3%), and Hispanics (82.9% compared with 72.1%).
- Among females, the percentage was significantly lower for poor (83.4%), near-poor (84.9%), and middle-income (90.1%) individuals than for high-income individuals (95.0%).
- There were no statistically significant differences by race or ethnicity among females.



Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2007.
Denominator: Civilian noninstitutionalized population, all ages.
Note: Measure is age adjusted to the 2000 standard population.

Figure 4.35. People without a usual source of care who indicate a financial or insurance reason for not having a source of care, by race and ethnicity, stratified by gender, 2006





Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Note: Data for Native Hawaiians and Other Pacific Islanders, American Indians and Alaska Natives, and Asian males did not meet the criteria for statistical reliability, data quality, or confidentiality.

- Females were more likely than males to lack a usual source of care due to financial or insurance reasons (20.0% compared with 14.9%; Figure 4.35). However, there were no statistically significant differences by gender among any of the racial or ethnic groups.
- There were no statistically significant racial or ethnic differences among females.

Patient Safety

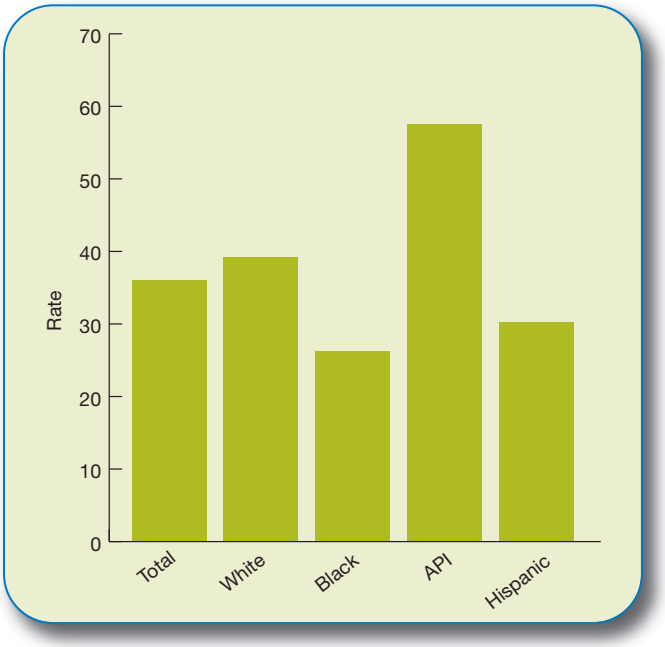
Obstetric Trauma

Childbirth and reproductive care are the most common reasons for women of childbearing age to use health care. With more than 11,000 births each day in the United States, childbirth is the most common reason for hospital admission.[48] Obstetric trauma involving a severe tear (i.e., 3rd or 4th degree laceration) to the vagina or surrounding tissues during delivery is a common complication of childbirth.

The higher risk of severe perineal laceration may be related to the degree of fetal-maternal size disproportion. API women with the smallest body size experience most obstetric trauma.[49] In addition, although any delivery can result in trauma, existing evidence shows that severe perineal trauma can be reduced by restricted use of episiotomy and forceps.[50]

This year, the NHDR presents a measure of obstetric trauma occurring in vaginal deliveries without instrument assistance.

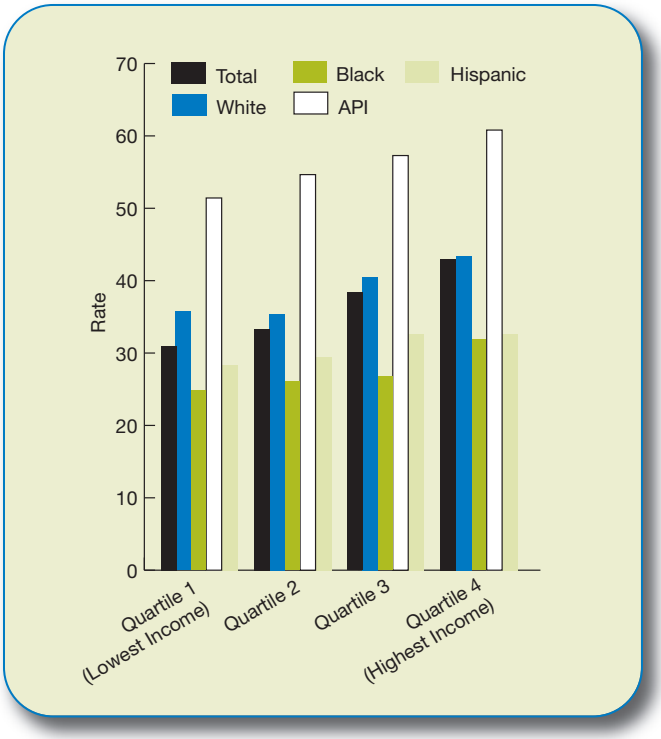
Figure 4.36. Obstetric trauma with 3rd or 4th degree laceration per 1,000 vaginal deliveries without instrument assistance, by race/ethnicity, 2006



Key: API = Asian or Pacific Islander.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2006.
Note: White, Black, and API are non-Hispanic. Data were not available for American Indians and Alaska Natives. Data are adjusted for age, gender, and diagnosis-related group clusters. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 25 States that have 66% of the U.S. resident population.

- In 2006, the overall rate of obstetric trauma with 3rd or 4th degree laceration was lower for Black women and Hispanic women compared with White women (26.1 per 1,000 vaginal deliveries without instrument assistance and 30.1 per 1,000, respectively, compared with 39.1 per 1,000; Figure 4.36).
- The overall rate of obstetric trauma with 3rd or 4th degree laceration was higher for API women than for White women (57.4 per 1,000 vaginal deliveries without instrument assistance compared with 39.1 per 1,000).

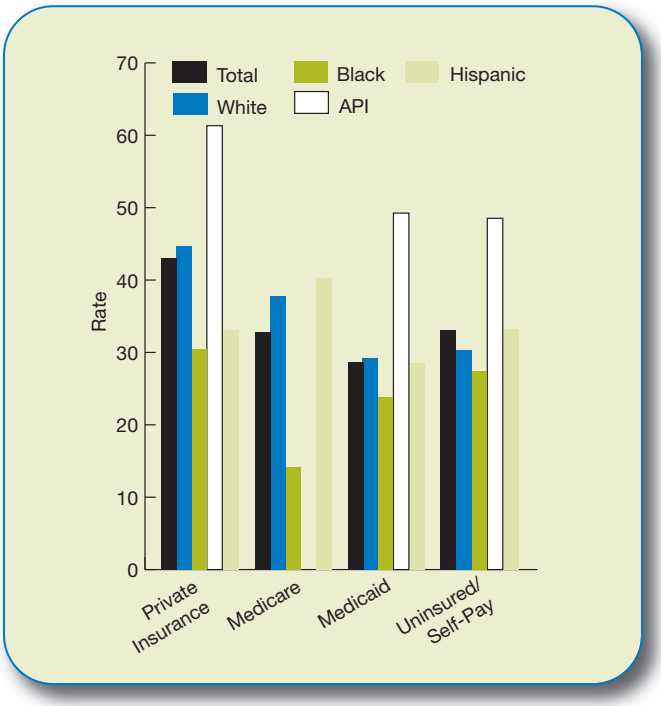
Figure 4.37. Obstetric trauma with 3rd or 4th degree laceration per 1,000 vaginal deliveries without instrument assistance, by race/ethnicity, stratified by area income, 2006



Key: API = Asian or Pacific Islander.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2006.
Note: White, Black, and API are non-Hispanic. Data were not available for American Indians and Alaska Natives. Data are adjusted for age, gender, and diagnosis-related group clusters. Quartile income categories are used instead of the NHDR's usual descriptive categories because that is how data are collected for this measure. Quartile 1 corresponds to the lowest income quartile, and Quartile 4 corresponds to the highest income quartile. Income categories are based on the median household income of the ZIP Code of the patient's residence. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 25 States that have 66% of the U.S. resident population.

- The rate of obstetric trauma with 3rd or 4th degree laceration was lower for all groups living in communities in the lower income quartile communities compared with patients who lived in communities in the highest income quartile (Quartile 4) (Figure 4.37).
- Within all income groups, the rate of obstetric trauma with 3rd or 4th degree laceration was lower for Black women and Hispanic women compared with White women. The rate was highest for API women.

Figure 4.38. Obstetric trauma with 3rd or 4th degree laceration per 1,000 vaginal deliveries without instrument assistance, by race/ethnicity, stratified by insurance, 2006



Key: API = Asian or Pacific Islander.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2006.
Note: White, Black, and API are non-Hispanic. Data were not available for American Indians and Alaska Natives and API women with Medicare. Data are adjusted for age, gender, and diagnosis-related group clusters. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 25 States that have 66% of the U.S. resident population.

- Overall, the rate of obstetric trauma with 3rd or 4th degree laceration was lower for Medicare[xiv] (32.8 per 1,000), Medicaid (28.7 per 1,000), and uninsured or self-pay (33.0 per 1,000) patients compared with patients with private insurance (43.1 per 1,000) (Figure 4.38).
- Among women with private insurance, the rate of obstetric trauma with 3rd or 4th degree laceration was lower for Blacks and Hispanics than for Whites (30.4 per 1,000 and 33.1 per 1,000, respectively, compared with 44.6 per 1,000). The rate was highest for APIs (61.3 per 1,000).
- Among women with Medicare,[xiv] the rate of obstetric trauma with 3rd or 4th degree laceration was lower for Blacks compared with Whites (14.1 per 1,000 compared with 37.8 per 1,000).
- Among women with Medicaid, the rate of obstetric trauma with 3rd or 4th degree laceration was lower for Blacks compared with Whites (23.9 per 1,000 compared with 29.2 per 1,000).
- Among uninsured women, the rate of obstetric trauma with 3rd or 4th degree laceration was higher for APIs and Hispanics compared with Whites (48.5 per 1,000 and 33.2 per 1,000, respectively, compared with 30.3 per 1,000).

[xiv] In most cases, this population would consist of women who qualified for Medicare due to disability.

Children

Children (individuals under age 18) made up 24.6% of the U.S. population, or 73.7 million people, in 2006.[32] Almost 40% of all children were members of racial and ethnic minority groups,[51] and 17.6% of children lived in families with incomes below the Federal poverty threshold.[28]

Children who are members of racial and ethnic minority groups tend to face greater health risks. For example, in 2003, Black children and AI/AN children had death rates about one and one-half to two times as high as White children. In 2005, Black infants were more than twice as likely as White infants to die during their first year.[35] Life expectancy at birth was 78.3 years for White children and 73.2 years for Black children, a difference of about 5 years.[35]

The NHDR tracks many measures relevant to children. Findings presented here highlight five quality measures and one access measure of particular importance to children (for ages 2 months to 19 years, depending on the measure):

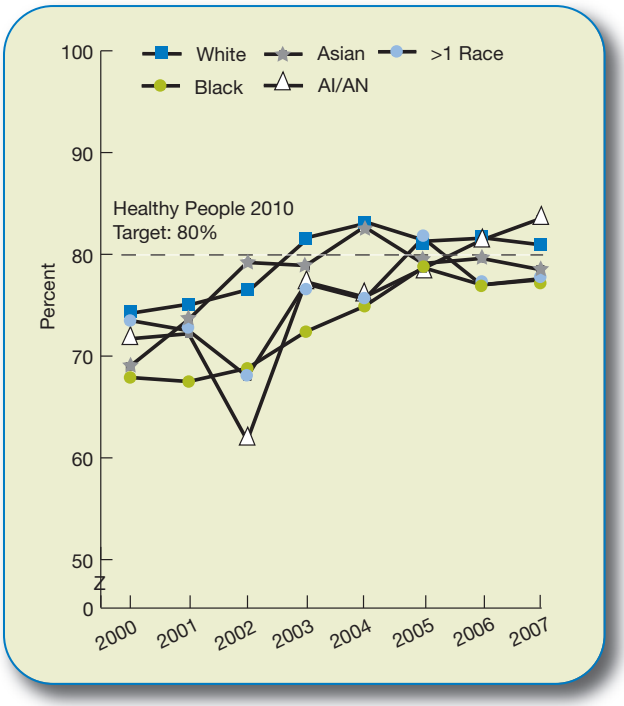
Component of health care need	Measure
Prevention	Early childhood vaccinations, counseling about healthy eating, dental visits
Patient safety	Accidental puncture or laceration during procedure
Timeliness	Admissions with perforated appendix
Access to care	Health insurance

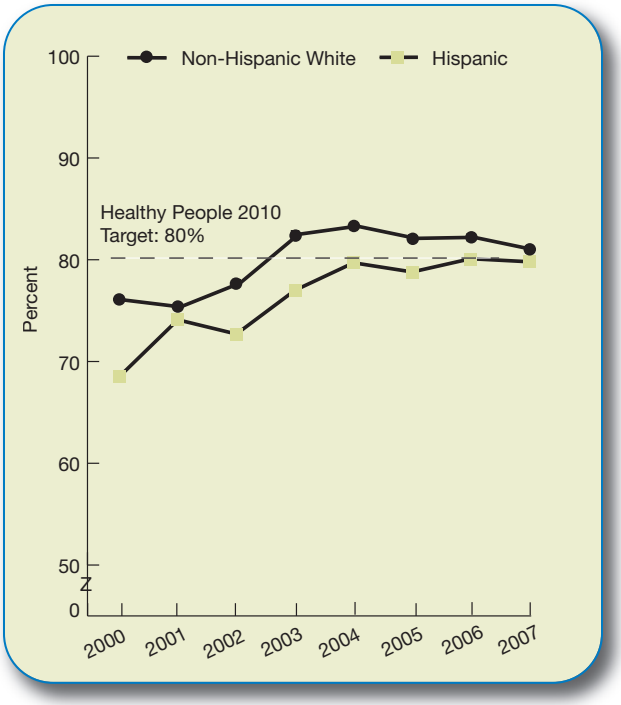
Quality of Health Care

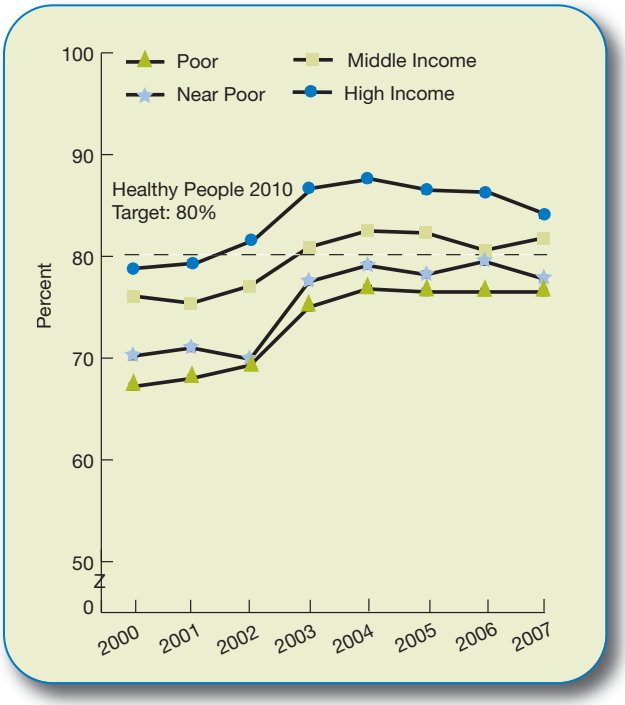
Prevention: Early Childhood Vaccinations

Childhood vaccinations protect recipients from illness and disability and protect others in the community. Vaccinations are important for reducing mortality and morbidity in populations.

Figure 4.39. Composite measure: Children ages 19-35 months who received all recommended vaccines, by race, ethnicity, and family income, 2000-2007







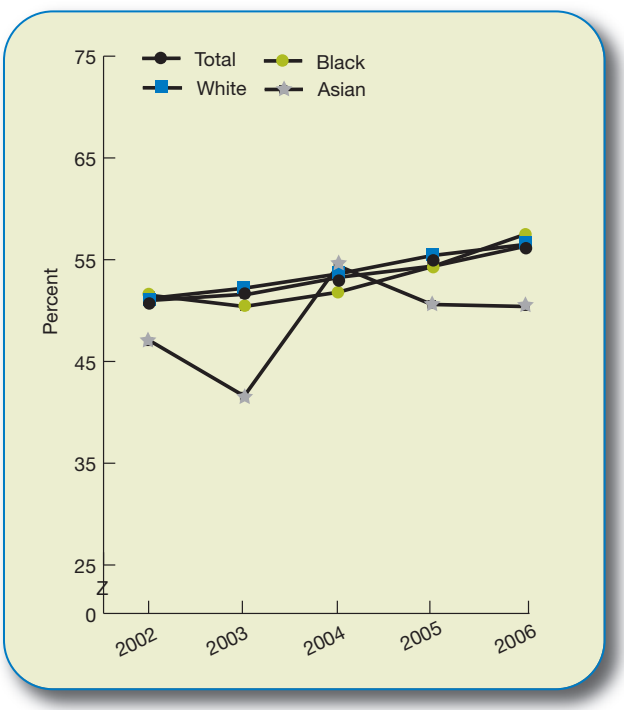
Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics and National Center for Immunization and Respiratory Diseases, National Immunization Survey, 2000-2007.
Denominator: Civilian noninstitutionalized population ages 19-35 months.
Note: Recommended vaccines for children ages 19-35 months are based on the Healthy People 2010 objective and do not include varicella vaccine or vaccines added to the recommended schedule after 1998 for children up to 35 months of age. Racial categories changed in 2000 and may not be comparable with those used for previous years. More information can be found in the Measure Specifications appendix.

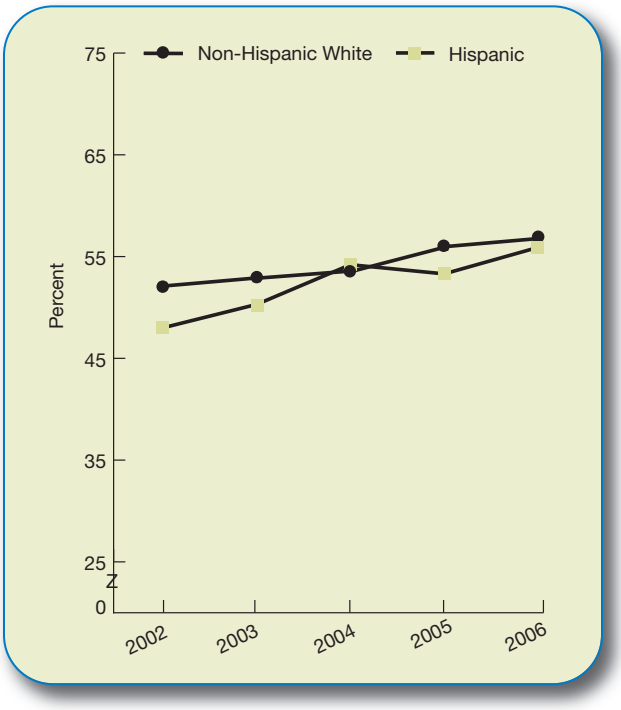
- From 2000 to 2007, the gap between Blacks and Whites who received all recommended vaccines decreased (Figure 4.39). However, in 2007, Black children were less likely than White children to receive all recommended vaccines (77.5% compared with 80.9%).
- The gap between Hispanics and non-Hispanic Whites in the percentage of children who received all recommended vaccines decreased during this time. In 2007, there were no statistically significant differences between Hispanics and non-Hispanic Whites.
- In 2007, the percentage of children who received all recommended vaccines was lower for children from poor (76.5%) and near-poor (77.8%) families than for children from high-income families (84.1%).
- Nationally, vaccination coverage levels achieved the Healthy People 2010 objective of 80% of children receiving all recommended vaccines for several groups: White (80.9%), AI/AN (83.5%), non-Hispanic White (81%), middle income (81.8%), and high income (84.1%).

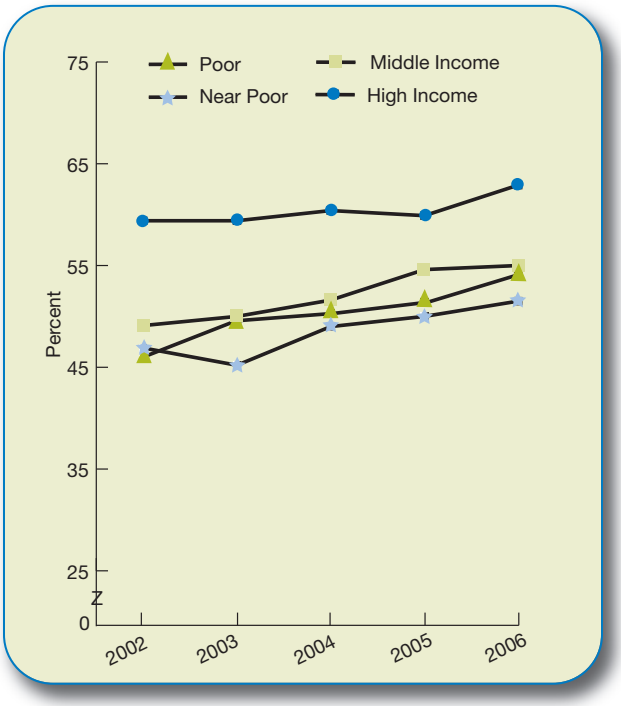
Prevention: Counseling About Healthy Eating

Unhealthy eating and lack of physical activity contribute to overweight children. Professional societies recommend routine promotion of healthy eating among children, which may help them form eating habits that will last into adulthood, contributing to better long-term health.

Figure 4.40. Children ages 2-17 whose parents/guardians reported advice from a doctor or other health provider about healthy eating, by race, ethnicity, and family income, 2002-2006







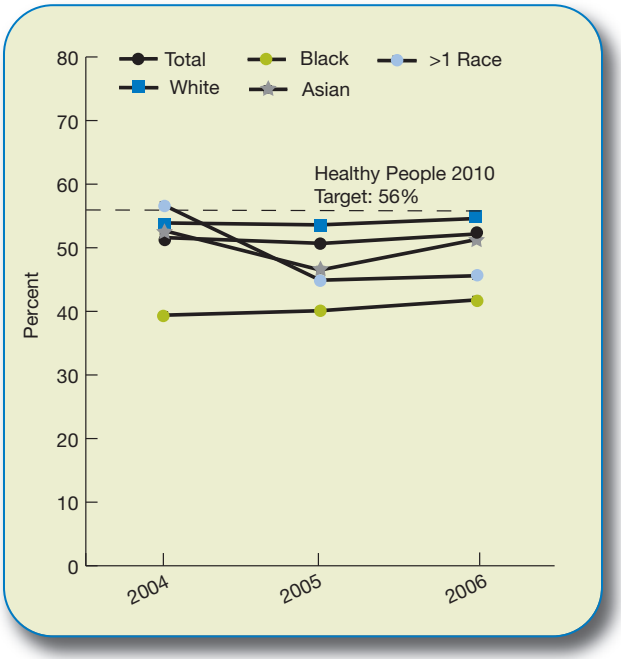
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2006.
Denominator: Civilian noninstitutionalized population ages 2-17.
Note: Data for American Indians and Alaska Natives and Native Hawaiians and Other Pacific Islanders did not meet criteria for statistical reliability.

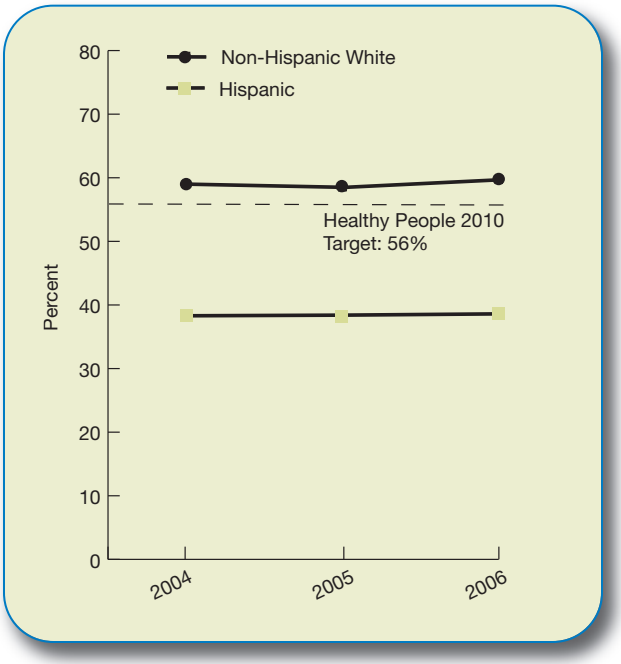
- In 2006, the percentage of children whose parents or guardians reported advice from a health provider about healthy eating was significantly lower for children from poor (54.2%), near-poor (51.5%), and middle-income (55.0%) families than for children from high-income families (62.9%) (Figure 4.40).
- The percentage of children whose parents or guardians reported advice from a health provider about healthy eating was significantly lower for uninsured children (41.4%) and children with public insurance (53.6%) than for children with private insurance (59.1%; data not shown).
- There were no statistically significant differences by race and ethnicity.

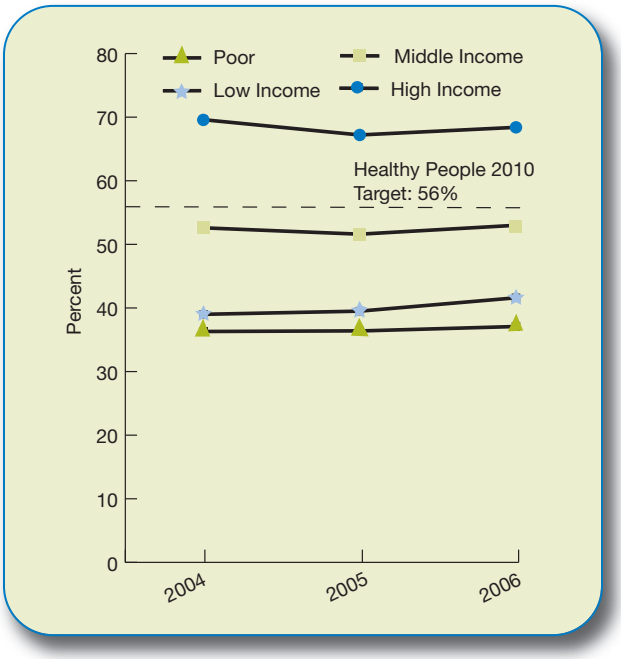
Prevention: Dental Visits

Regular dental visits promote prevention, early diagnosis, and optimal treatment of craniofacial diseases and conditions.[52] To improve overall oral health, Healthy People 2010 set a goal of increasing the annual percentage of people age 2 and over using the oral health system from 44% to 56%.

Figure 4.41. Children ages 2-17 with a dental visit in the past year, by race, ethnicity, and family income, 2004-2006







Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2004-2006.
Denominator: Civilian noninstitutionalized population ages 2-17.

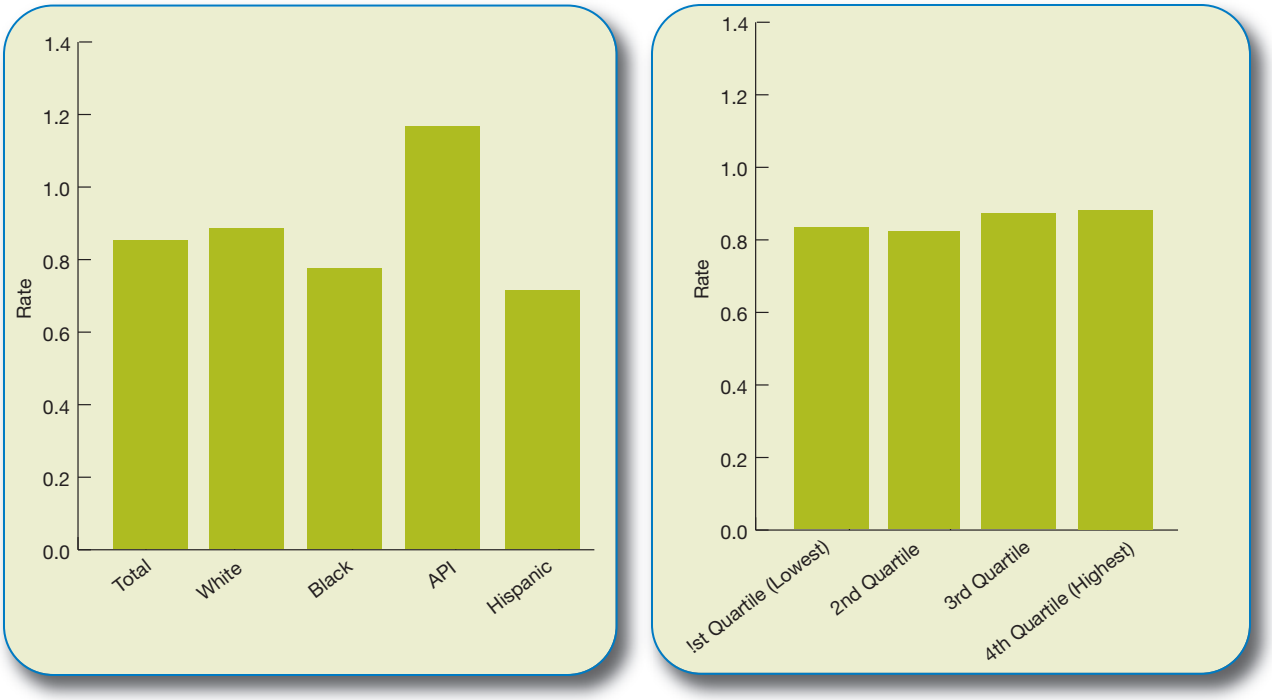
- From 2004 to 2006, no statistically significant changes were seen in the percentage of children with a dental visit in the past year in any group (Figure 4.41).
- In 2006, the percentage of children with a dental visit in the past year was lower for Blacks than for Whites (41.8% compared with 54.6%) and for Hispanics than for non-Hispanic Whites (38.6% compared with 59.7%).
- The percentage of children with a dental visit in the past year was lower for children from poor (37.1%), near-poor (41.6%), and middle-income (53.0%) families compared with children from high-income families (68.4%).
- The percentage of children with a dental visit in the past year was lower for children with public insurance (41.4%) and for uninsured children (27.9%) compared with children with private insurance (59.6%; data not shown).

Patient Safety: Accidental Puncture or Laceration

Adverse events occurring during surgical procedures include unintended cuts, punctures, perforations, and lacerations. Such events may be more likely in children, whose smaller anatomy may make avoiding such events more technically challenging. Prior analyses of Healthcare Cost and Utilization Project (HCUP) data from 2000 using earlier versions of the present indicator identified a cumulative incidence of 1 accidental puncture or laceration per 1,000 pediatric discharges. These incidents produced significant associated increases in length of stay, billed charges, and inpatient mortality.[53]

To the degree that adverse events can be avoided by proper surgical technique, variations in their occurrence may be a marker of differences in the quality of pediatric surgical care. However, such rates are best interpreted in light of the risks associated with medical or surgical discharges of varying complexity.

Figure 4.42. Accidental puncture or laceration during procedure per 1,000 discharges, children under age 18, by race/ethnicity and income, 2006



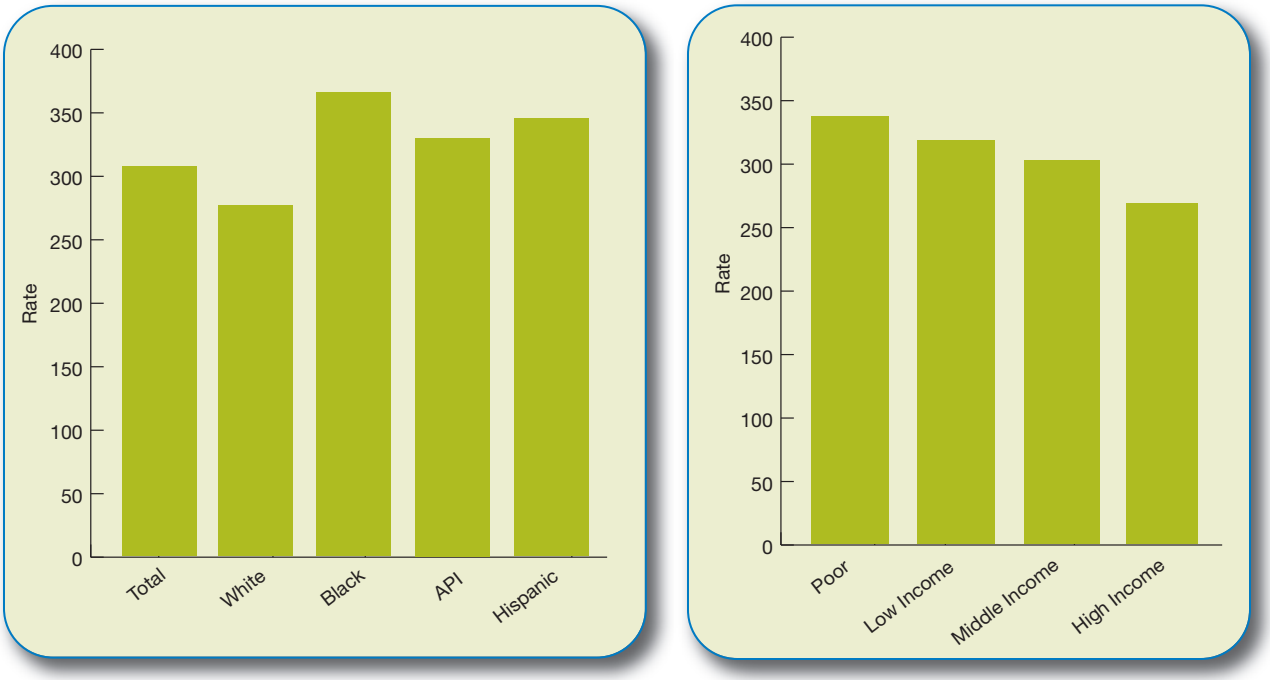
Key: API = Asian or Pacific Islander.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2006.
Note: White, Black, and API are non-Hispanic. The HCUP SID disparities analysis file is designed to provide national estimates on disparities using weighted records from a sample of hospitals from 25 States that have 66% of the U.S. resident population. Income categories are based on the median income of the ZIP Code of the patient's residence. These data are adjusted for age, gender, diagnosis-related group, and comorbidities. Rates include medical or surgical discharges only.

- Black children (0.77 per 1,000 discharges) and Hispanic children (0.71 per 1,000 discharges) had lower rates of accidental puncture or laceration than White children (0.89 per 1,000 discharges). API children had higher rates than Whites (1.16 per 1,000 discharges compared with 0.89 per 1,000 discharges; Figure 4.42).
- There were no significant differences by income.

Timeliness: Admissions With Perforated Appendix

Appendiceal perforation or rupture may increase risks of internal organ damage, female infertility, and even death.[54] Research suggests that there is little time lag in the United States between the correct diagnosis of appendicitis and surgical intervention.[55] Therefore, perforated appendix in children may better reflect delayed symptom recognition by parents or providers. In addition, patients may face logistical, financial, racial, sociocultural, and other barriers to timely access to acute care for a time-dependent illness.[56] Prior studies based on data from HCUP and other sources have identified minority status, lower income, lack of private insurance, and admission from a non-emergency department source as risk factors for discharge with appendiceal rupture.[57]

Figure 4.43. Perforated appendixes per 1,000 admissions with appendicitis, ages 1-17, by race/ethnicity and income, 2006



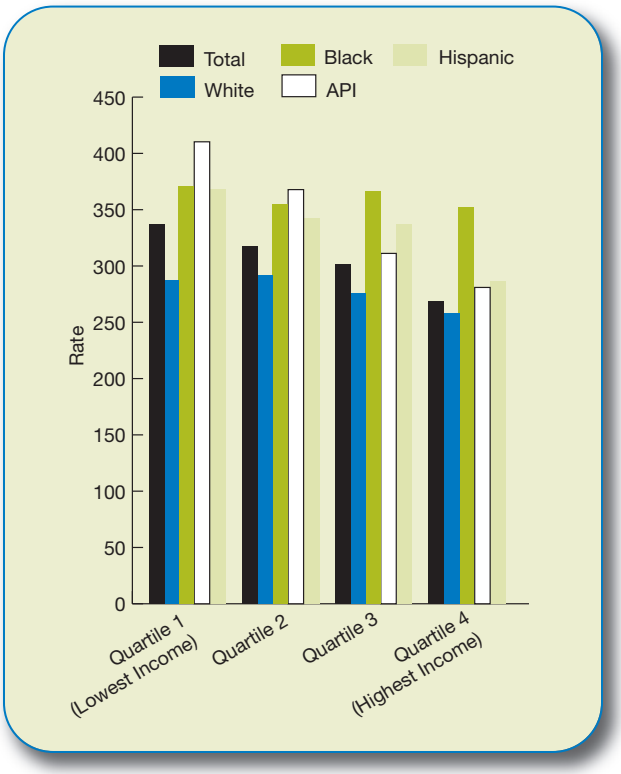
Key: API = Asian or Pacific Islander.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2006.
Note: White, Black, and API are non-Hispanic. Rates are adjusted for age and gender. The HCUP SID disparities analysis file is designed to provide national estimates on disparities using weighted records from a sample of hospitals from 25 States that have 66% of the U.S. resident population.

- Among children with appendicitis, hospitalizations involving perforations were higher for Blacks (365.3 per 1,000 admissions), APIs (329.3 per 1,000 admissions), and Hispanics (344.5 per 1,000 admissions) than for Whites (276.1 per 1,000 admissions) (Figure 4.43).

- Among children with appendicitis, hospitalizations involving perforations were higher for those living in poor communities (337.1 per 1,000 admissions), low-income communities (317.8 per 1,000 admissions), and middle-income communities (301.9 per 1,000 admissions) than for those living in high-income communities (268.5 per 1,000 admissions).

To distinguish between the effects of race/ethnicity and income on pediatric discharges with perforated appendix, this measure is stratified by income level.

Figure 4.44. Perforated appendixes per 1,000 admissions with appendicitis, ages 1-17, by race/ethnicity, stratified by income, 2006



Key: API = Asian or Pacific Islander.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2006.
Note: White, Black, and API are non-Hispanic. Quartile income categories are used instead of the NHDR's usual descriptive categories because that is how data are collected for this measure. Quartile 1 corresponds to the lowest income quartile, and Quartile 4 corresponds to the highest income quartile. Income categories are based on the median household income of the ZIP Code of the patient's residence. The HCUP SID disparities analysis file is designed to provide national estimates on disparities using weighted records from a sample of hospitals from 25 States that have 66% of the U.S. resident population. These data have been adjusted for age and gender.

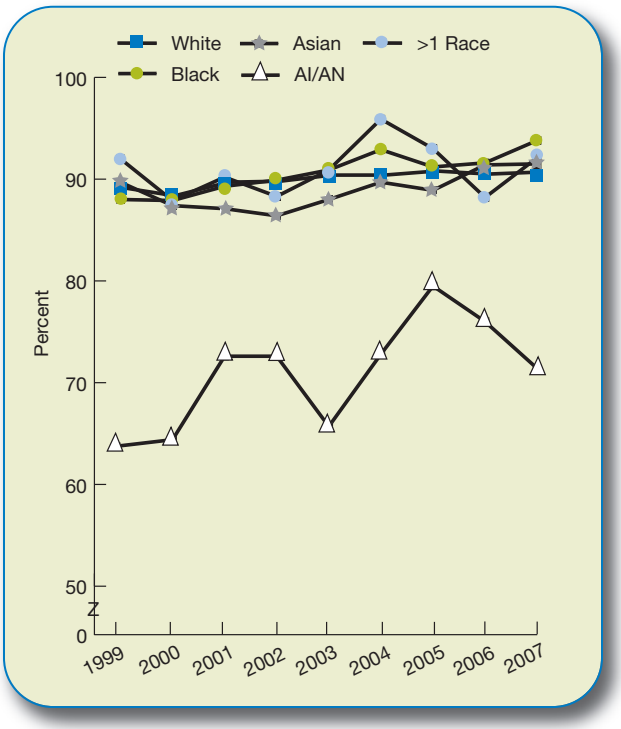
- Hispanic children living in communities at every income level had higher rates of hospital discharges with perforated appendix than Whites (Figure 4.44).
- Black children living in communities at every income level had higher rates of hospital discharges with perforated appendix than Whites.
- API children living in communities in Quartile 1 had higher rates of hospital discharges with perforated appendix than Whites (410.3 per 1,000 compared with 287.7 per 1,000 admissions).

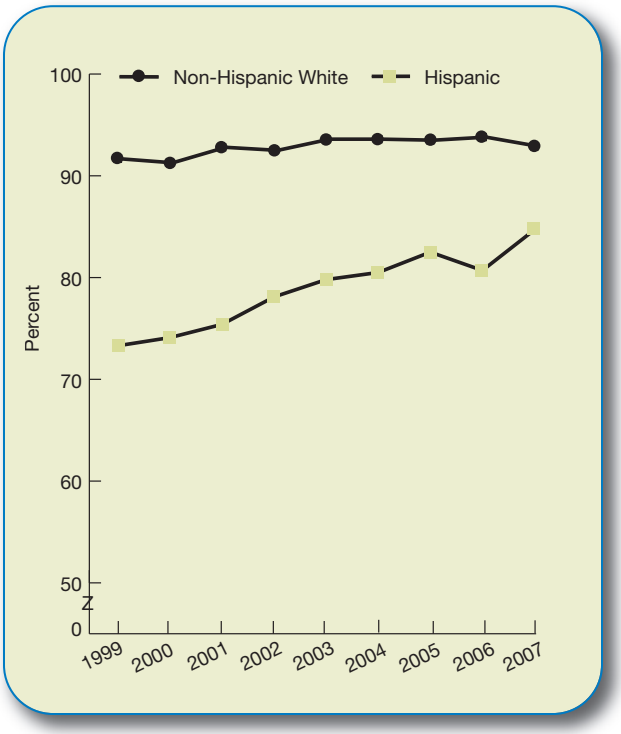
Access to Health Care

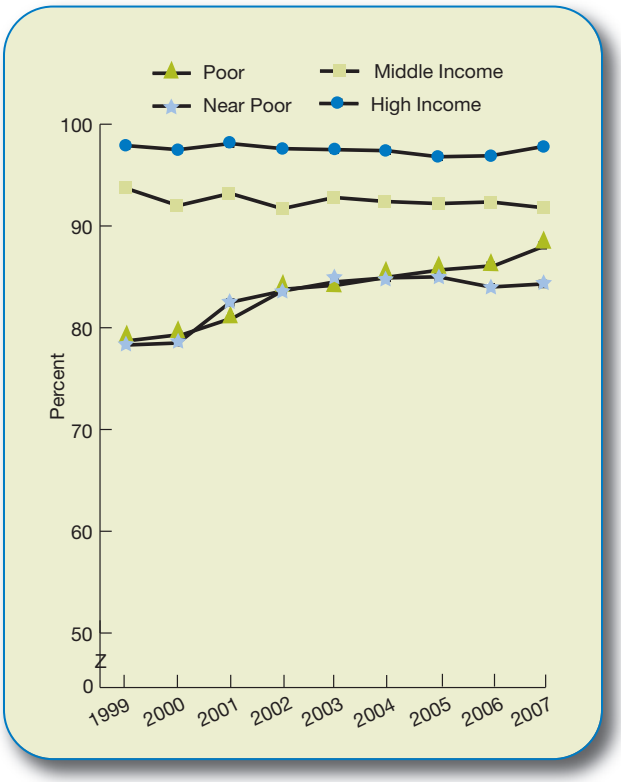
Health Insurance

Insurance coverage is among the most important factors in access to health care. Special efforts have been made to provide insurance coverage to children.[58]

Figure 4.45. Children with health insurance, by race, ethnicity, and family income, 1999-2007







Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 1999-2007.
Denominator: Civilian noninstitutionalized population under age 18.
Note: Insurance status is determined at the time of interview. Children are considered uninsured if they lack private health insurance, public assistance (including the State Children's Health Insurance Program), Medicare, Medicaid, a State-sponsored health plan, other government-sponsored program, or a military health plan, or if their only coverage is through the Indian Health Service. This measure reflects the percentage of children who were covered by health insurance at the time of interview.

- In 2007, the percentage of children with health insurance was higher for Blacks than for Whites (93.8% compared with 90.7%; Figure 4.45).
- In 2007, the percentage of children with health insurance was significantly lower for AI/AN children than for White children (71.4% compared with 90.7%).
- From 1999 to 2007, the gap between Hispanics and non-Hispanic Whites in the percentage of children with health insurance decreased.
- In 2007, the percentage of children with health insurance was significantly lower for Hispanic children than for non-Hispanic White children (84.7% compared with 92.9%).
- In 2007, the percentage of children with health insurance was significantly lower for children in poor (88.1%), near-poor (84.3%), and middle-income families (91.8%) than for children in high-income families (97.8%).

Older Adults

In 2006, 37.3 million people age 65 and over lived in the United States.[59] Furthermore, the percentage of the population age 65 and over is swiftly increasing. People age 65 and over represented 12.4% of the population in 2006 but are expected to grow to about 20% of the population by 2030.[60] The past century has seen significant increases in life expectancy; in 2007, 65-year-olds could expect to live an additional 18.7 years.[59] Nonetheless, older adults face greater health care concerns than do younger populations. In 2006, 39.8% of noninstitutionalized older adults assessed their health as excellent or very good, compared with 65.1% of people ages 18-64[61]; most older adults have at least one chronic condition.

Older women outnumber older men by more than one-third.[59] In addition, members of minority groups are projected to represent more than 25% of the older population in 2030, up from about 16% in 2000.[60] About 3.4 million older people lived below the poverty level in 2006, corresponding to a poverty rate of 9.4%.[59] Another 2.2 million, or 6.2% of older people, were classified as near poor, with incomes between 100% and 125% of the Federal poverty level.[59]

The Medicare program provides core health insurance to nearly all older Americans and reduces many financial barriers to acute and postacute care. The Medicare Prescription Drug Improvement and Modernization Act of 2003 has added prescription drug and preventive benefits to Medicare and provides extra financial help to older people with low incomes. Therefore, differences in access to and quality of health care tend to be smaller among Medicare beneficiaries than among younger populations.

Surveys of the general population often do not include enough older people to examine racial, ethnic, or socioeconomic differences in health care. The NHDR relies on data from the Medicare Current Beneficiary Survey to examine disparities in access to and quality of care. Findings presented here highlight two quality measures and one access measure of particular importance to the older population:

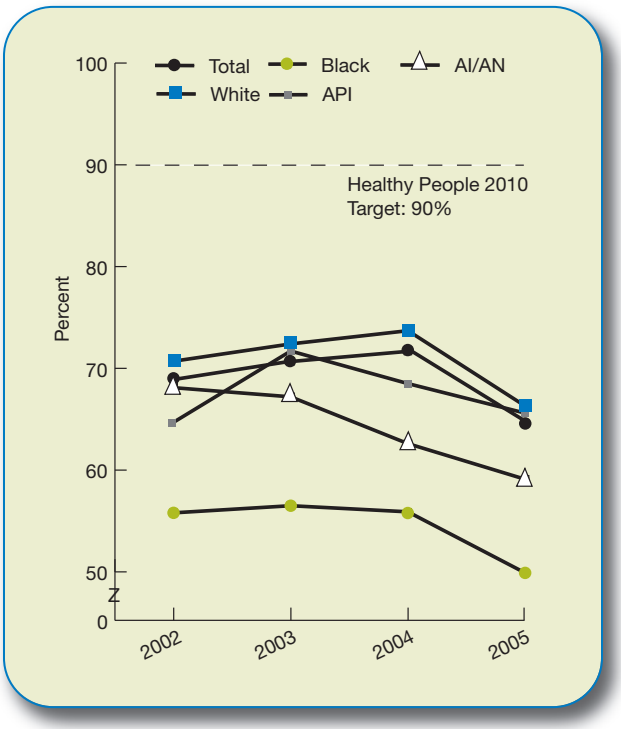
Component of health care need	Measure
Prevention	Influenza vaccination, vision screening
Access to care	Delayed care due to cost

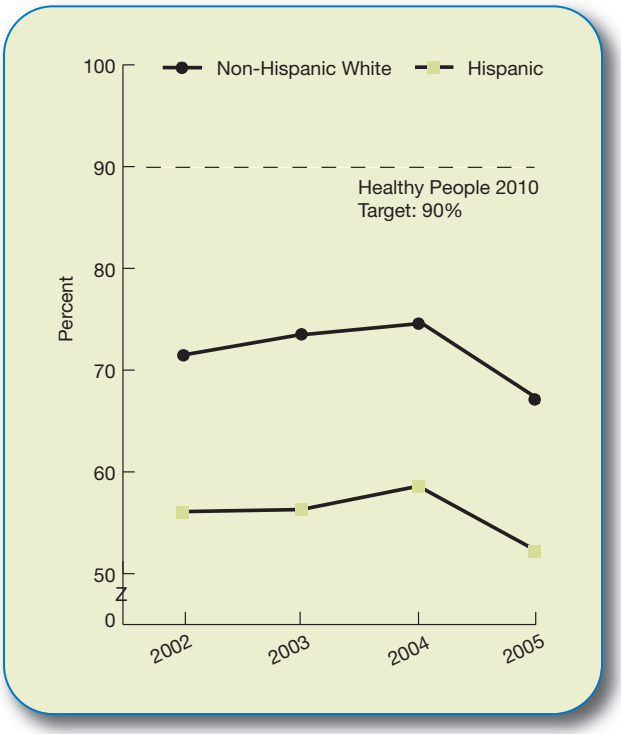
Quality of Health Care

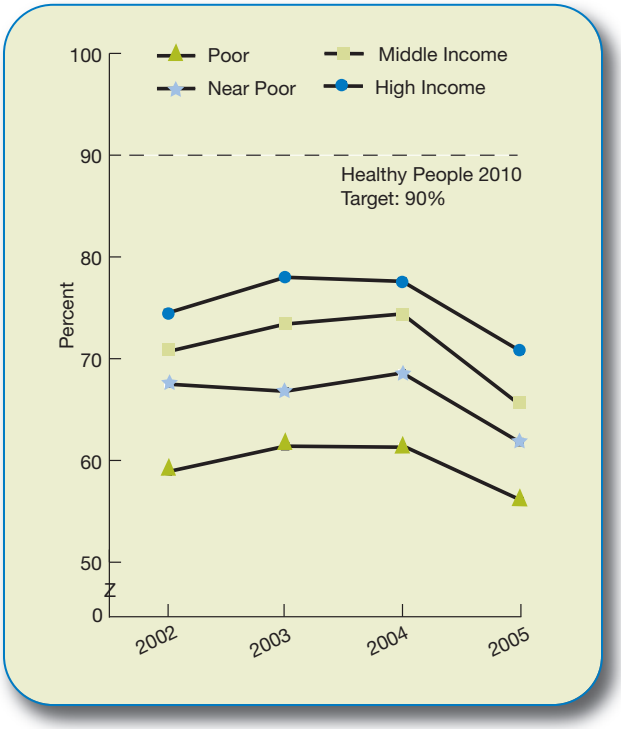
Prevention: Influenza Vaccination

Influenza is responsible for significant morbidity and decreased productivity during outbreaks. Older adults are at increased risk for complications from influenza infections. Vaccination is an effective strategy to reduce illness and deaths due to influenza. The U.S. Preventive Services Task Force and the Centers for Disease Control and Prevention recommend annual influenza vaccination of all older individuals.

Figure 4.46. Medicare beneficiaries age 65 and over who had an influenza vaccination in the last winter, by race, ethnicity, and income, 2002-2005







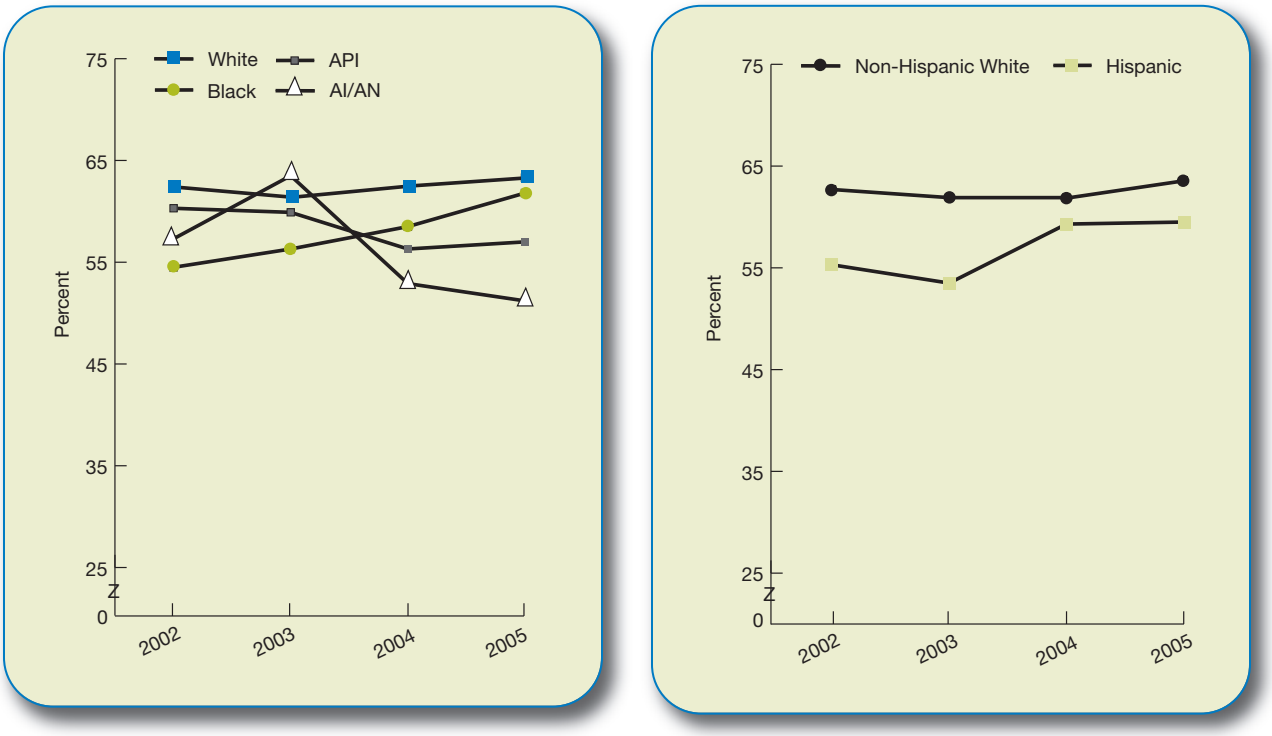
Key: AI/AN = American Indian or Alaska Native; API = Asian or Pacific Islander.
Source: Centers for Medicare & Medicaid Services, Medicare Current Beneficiary Survey, 2002-2005.
Denominator: Medicare beneficiaries age 65 and over living in the community.

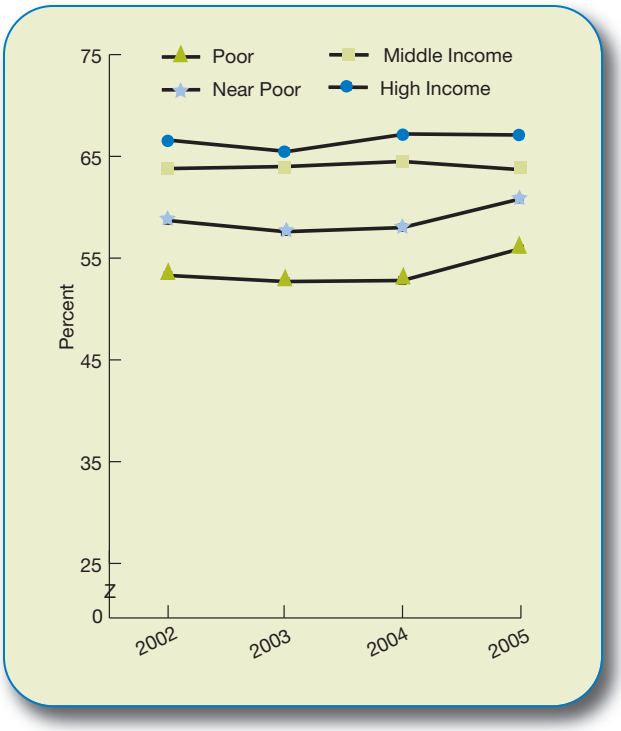
- From 2002 to 2005, the percentage of Medicare beneficiaries age 65 and over with an influenza vaccination in the last winter decreased overall from 68.9% to 64.6% (Figure 4.46).
- From 2002 to 2005, the gap between Blacks and Whites remained the same. In 2005, the percentage was significantly lower for Blacks than for Whites (49.9% compared with 66.3%).
- During this period, the gap between Hispanics and non-Hispanic Whites remained the same. In 2005, the percentage was also significantly lower for Hispanics than for non-Hispanic Whites (52.3% compared with 67.1%).
- From 2002 to 2005, the gaps between poor, near-poor, and middle-income groups and high-income groups remained the same. In 2005, the percentage was significantly lower for poor, near-poor, and middle-income beneficiaries than for high-income beneficiaries (56.0%, 61.8%, and 65.5%, respectively, compared with 70.8%).
- In 2005, no population group achieved the Healthy People 2010 target of 90% of older Americans receiving influenza vaccination.

Prevention: Vision Screening

Visual impairment is a common and potentially serious problem among older people. Personal safety may be compromised as risks of falls and car accidents increase.

Figure 4.47. Medicare beneficiaries age 65 and over who had an eye examination in the last 12 months, by race, ethnicity, and income, 2002-2005





Key: AI/AN = American Indian or Alaska Native; API = Asian or Pacific Islander.
Source: Centers for Medicare & Medicaid Services, Medicare Current Beneficiary Survey, 2002-2005.
Denominator: Medicare beneficiaries age 65 and over living in the community.

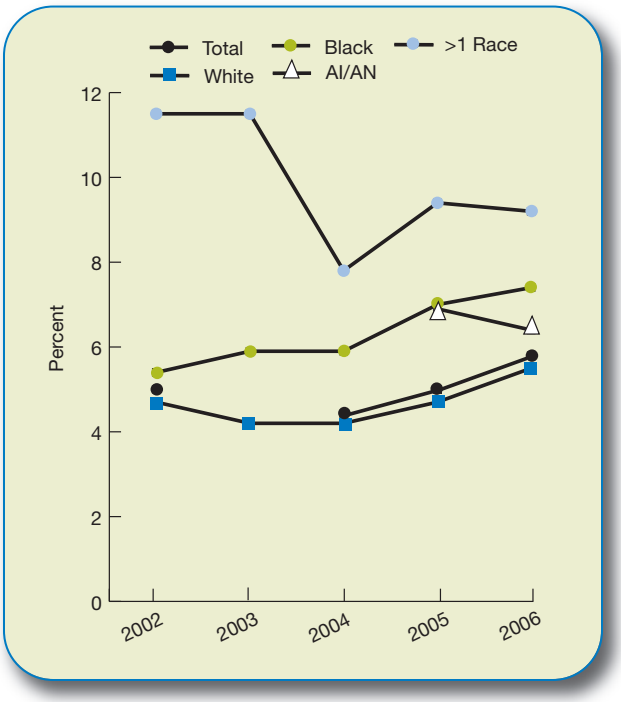
- From 2002 to 2005, the gap decreased between Blacks and Whites in the percentage of Medicare beneficiaries age 65 and over with an eye exam in the past year. In 2005, there was no statistically significant difference between Blacks and Whites (Figure 4.47, 61.8% compared with 63.3%).
- During this period, there were no statistically significant changes or differences between Hispanics and non-Hispanic Whites.
- During this period, the gap between poor, near-poor, and middle-income individuals and high-income individuals remained the same. In 2005, poor, near-poor, and middle-income individuals were less likely than high-income individuals to have had an eye exam in the past year (55.9%, 60.8%, and 63.7%, respectively, compared with 67.1%).

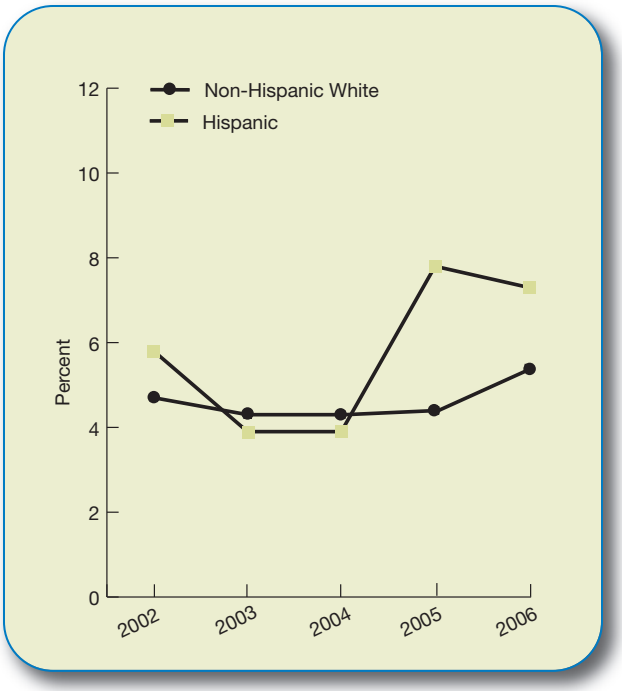
Access to Care

Delayed Care Due to Cost

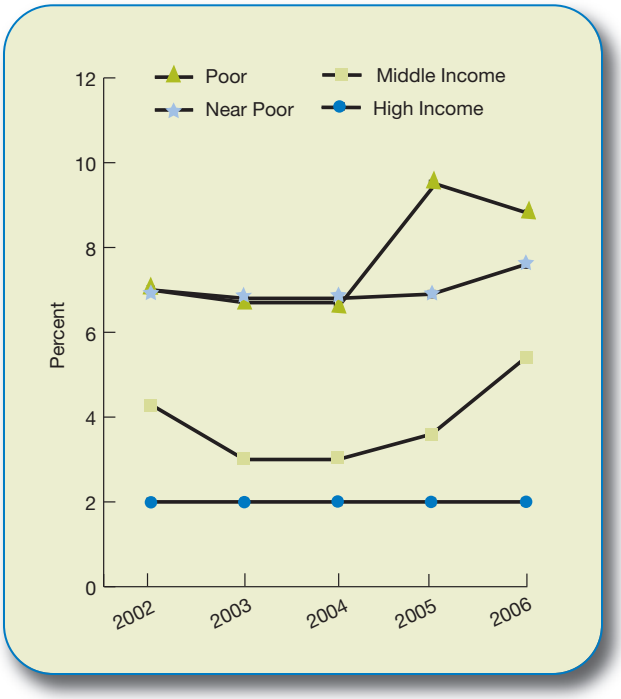
Timely delivery of appropriate health care has been shown to improve health care outcomes and reduce health care costs. Timely receipt of care is especially important for the older population due to their often increased medical needs. Delayed health care can lead to diagnosis at a more advanced disease stage and can reduce opportunities for optimal treatment.[xv]

Figure 4.48. Medicare beneficiaries age 65 and over with delayed care due to cost, by race, ethnicity, and income, 2002-2006





[xv] In this measure, delayed care due to cost is self-reported by patients.



Key: AI/AN = American Indian or Alaska Native.
Source: Centers for Medicare & Medicaid Services, Medicare Current Beneficiary Survey, 2002-2006.
Denominator: Medicare beneficiaries age 65 and over living in the community.
Note: Total was unavailable for 2003. Data for Asians and for 2002-2004 for AI/ANs were statistically unreliable.

- In 2006, Black older adults and older adults of multiple race were more likely than White older adults to delay care due to cost (7.4% and 9.2%, respectively, compared with 5.5%; Figure 4.48).
- In 2006, the percentage delaying care was significantly higher for poor (8.8%), near-poor (7.6%), and middle-income (5.4%) beneficiaries than for high-income beneficiaries (2.0%).

Residents of Rural Areas

About one in five Americans lives in a nonmetropolitan area.[62] Compared with their urban counterparts, rural residents are more likely to be older, poor,[63] and in fair or poor health and to have chronic conditions.[62] Rural residents are less likely than their urban counterparts to receive recommended preventive services and on average report fewer visits to health care providers.[64]

Although 20% of Americans live in rural areas,[xvi] only 9% of physicians in America practice in those settings.[65] Other important providers of health care in those settings include nurse practitioners, nurse midwives, and physician assistants. A variety of programs deliver needed services in rural areas, such as the National Health Service Corps Scholarship Program, IHS, State offices of rural health, rural health clinics, and community health centers. Cost-based Medicare reimbursement incentives are also available for rural health clinics, critical access hospitals, sole community hospitals, and Medicare-dependent hospitals and physicians in health professional shortage areas.

Many rural residents depend on small rural hospitals for their care. There are approximately 2,000 rural hospitals throughout the country,[66] 1,500 of which have 50 or fewer beds. Most of these hospitals are critical access hospitals that have 25 or fewer beds. They face unique challenges due to their size and case mix. During the 1980s, many were forced to close because of financia1 losses.[67] Yet, more recently, finances of small rural hospitals have improved and few closures have occurred since 2003.

Transportation needs are pronounced among rural residents, who must travel longer distances to reach health care delivery sites. Of the nearly 1,000 "frontier counties"[xvii] in the Nation, most have limited health care services and many do not have any.[68]

The NHDR tracks many measures of relevance to residents of rural areas. Findings presented here highlight three quality measures and one access measure of particular importance to residents of rural areas, with additional geographic data from metropolitan areas:

Component of health care need	Measure
Outcome	Heart attack mortality
Management	Recommended services for diabetes
Timeliness	Care for illness or injury as soon as wanted
Access to care	Health insurance

[xvi] Many terms are used to refer to the continuum of geographic areas. For the 2000 census, the U.S. Census Bureau's classification of "rural" consists of all territory, population, and housing units located outside urban areas and urban clusters. The Census Bureau classified as "urban" all territory, population, and housing units located within (1) core census block groups or blocks that have a population density of at least 1,000 people per square mile and (2) surrounding census blocks that have an overall density of at least 500 people per square mile. [xvii]

"Frontier counties" have a population density of less than 7 people per square mile; thus, residents may have to travel long distances for care.

In previous NHDRs, detailed geographic typologies were applied to two AHRQ databases—MEPS and HCUP—to define variations in health care quality and access for a range of rural and urban locations. This year, data from MEPS and HCUP are again presented. Federal definitions of micropolitan and noncore statistical areas (not metropolitan or micropolitan areas) published in June 2003 are used.[69] In addition, Urban Influence Codes use a methodology developed by the National Center for Health Statistics to subdivide metropolitan areas into large central and large fringe metropolitan areas.[70] Thus, categories used in this section of the NHDR may be defined as follows:

- Metropolitan (total): all metropolitan areas.
- Large central metropolitan statistical area: central counties in metropolitan area of 1 million or more inhabitants.
- Large fringe metropolitan statistical area: outlying (suburban) counties in metropolitan area of 1 million or more inhabitants.
- Medium metropolitan statistical area: counties in metropolitan area of 250,000 to fewer than 1,000,000 inhabitants.
- Small metropolitan statistical area: metropolitan area of 50,000 to fewer than 250,000 inhabitants.
- Nonmetropolitan (total): all nonmetropolitan areas.
- Micropolitan statistical area: counties with an urban cluster of at least 10,000 but fewer than 50,000 inhabitants.
- Noncore statistical area (rural): not metropolitan or micropolitan.

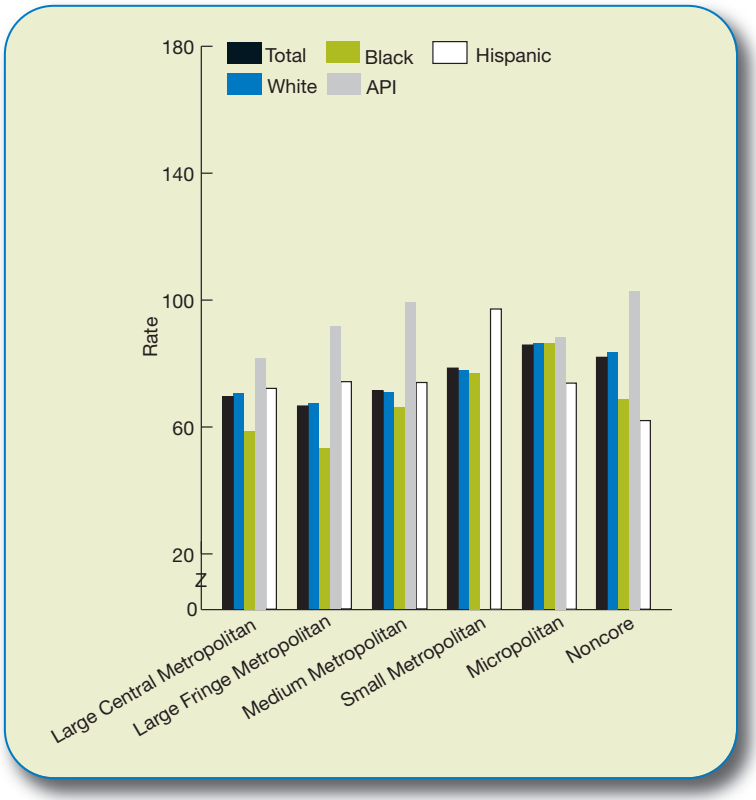
Urban-rural contrasts for measures from MEPS and HCUP compare residents of rural statistical areas (including both micropolitan and noncore statistical areas) with residents of urban statistical areas (including large central, large fringe, medium, and small metropolitan statistical areas). Sample sizes are often too small to provide reliable estimates for noncore statistical areas, limiting the ability to assess disparities among residents of these areas.

Quality of Health Care

Outcome: Heart Attack Mortality

Heart disease is the leading cause of death for both men and women in the United States, responsible for nearly 632,000 deaths in 2006.[71] About 1.2 million heart attacks occur each year.[72] Data on inpatient hospital deaths for patients who are admitted for a heart attack (AMI) are presented. To distinguish the effects of race/ethnicity on the AMI in-hospital mortality rate within urban and rural areas, race/ethnicity data are stratified by urban and rural location of patient residence.

Figure 4.49. Deaths per 1,000 adult admissions with acute myocardial infarction as principal diagnosis, by race/ethnicity and geographic location, 2006



Large Central Metropolitan = central counties in metropolitan areas ≥1 million inhabitants.
Large Fringe Metropolitan = outlying (suburban) counties in metropolitan areas ≥1 million inhabitants.
Medium Metropolitan = counties in metropolitan areas of 250,000-999,999 inhabitants.
Small Metropolitan = counties in metropolitan areas of 50,000-249,999 inhabitants.
Micropolitan = counties in an area with an urban cluster of 10,000-49,999 inhabitants.
Noncore = <10,000 inhabitants.
Key: API = Asian or Pacific Islander.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases (SID) disparities analysis file, 2006.
Denominator: Adults age 18 and over hospitalized for heart attack in community hospitals.
Note: White, Black, and API are non-Hispanic groups. These data are adjusted for age, gender, and all patient refined-diagnosis related group. Data for APIs in small metropolitan areas did not meet criteria for statistical reliability, data quality, or confidentiality. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 25 States that have 66% of the U.S. resident population.

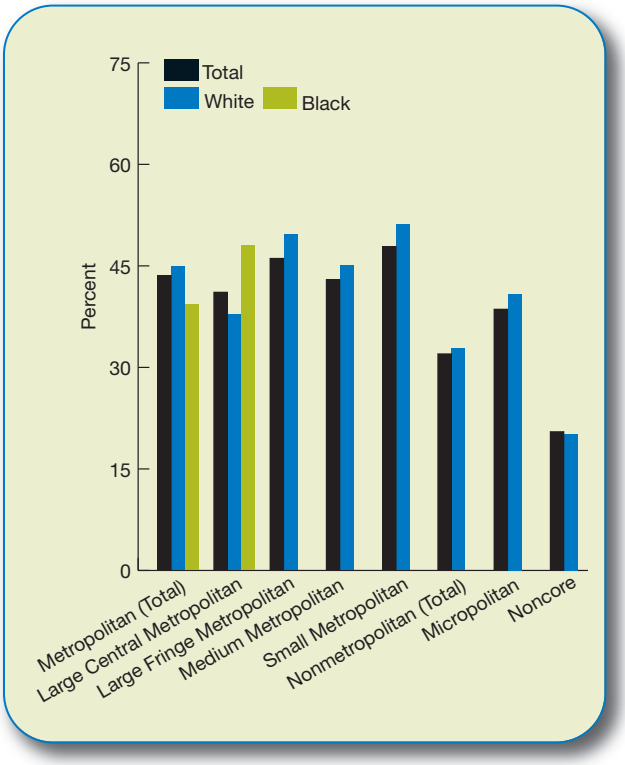
- The overall heart attack death rate was significantly higher for people admitted to hospitals in noncore areas (82.0 per 1,000 AMI admissions) than for people living in large central metropolitan areas or small metropolitan areas (69.6 per 1,000 admissions and 78.6 per 1,000 admissions, respectively; Figure 4.49).
- The overall rate was also significantly higher for people admitted to hospitals in micropolitan areas than for people living in large central metropolitan areas (85.8 per 1,000 admissions compared with 69.6 per 1,000 admissions).

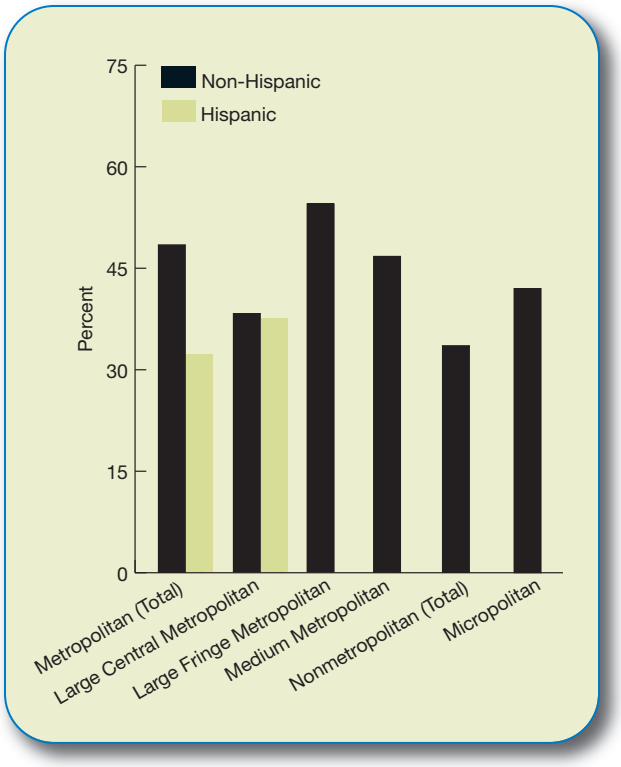
- In large central metropolitan areas and large fringe metropolitan areas, the heart attack death rate was lower for Blacks than for Whites (58.8 per 1,000 admissions compared with 70.6 per 1,000 admissions in large central metropolitan areas and 53.2 per 1,000 admissions compared with 67.3 per 1,000 admissions in large fringe metropolitan areas). The rate was higher for APIs than for Whites (81.7 per 1,000 admissions compared with 70.6 per 1,000 admissions in large central metropolitan areas and 91.7 per 1,000 admissions compared with 67.3 per 1,000 admissions in large fringe metropolitan areas).
- In medium metropolitan areas, the heart attack death rate was higher for APIs than for Whites (99.3 per 1,000 admissions compared with 70.8 per 1,000 admissions).
- In small metropolitan areas, the heart attack death rate was higher for Hispanics than for Whites (97.2 per 1,000 admissions compared with 77.9 per 1,000 admissions).
- There were no statistically significant differences by race or ethnicity in micropolitan areas.
- In noncore areas, the heart attack death rate was lower for Blacks (68.6 per 1,000 admissions) and Hispanics (62.0 per 1,000 admissions) than for Whites (83.6 per 1,000 admissions).

Management: Recommended Services for Diabetes

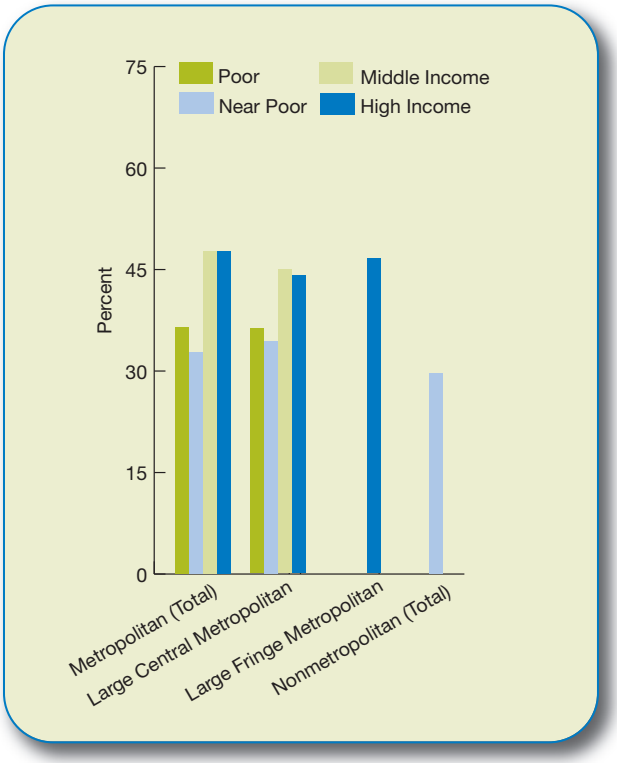
The NHDR presents a composite measure[xviii] that tracks receipt of three recommended services for effective management of diabetes: hemoglobin A1c testing, eye examination, and foot examination in the past year.

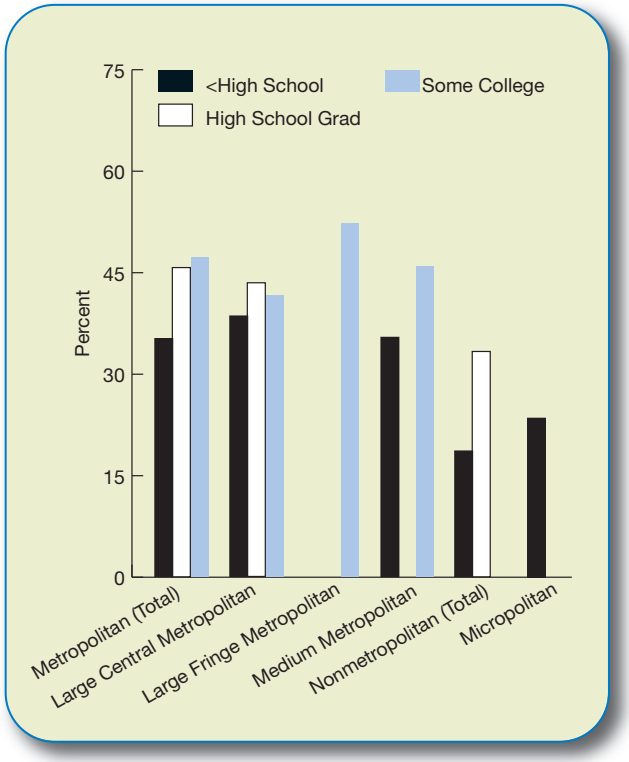
Figure 4.50. Composite measure: Adults age 40 and over with diagnosed diabetes who received three recommended services for diabetes in the calendar year (hemoglobin A1c measurement, eye examination, and foot examination), by geographic location, stratified by race, ethnicity, income, and education, 2006





[xviii] For more information on composite measures, refer to Chapter 1, Introduction and Methods.





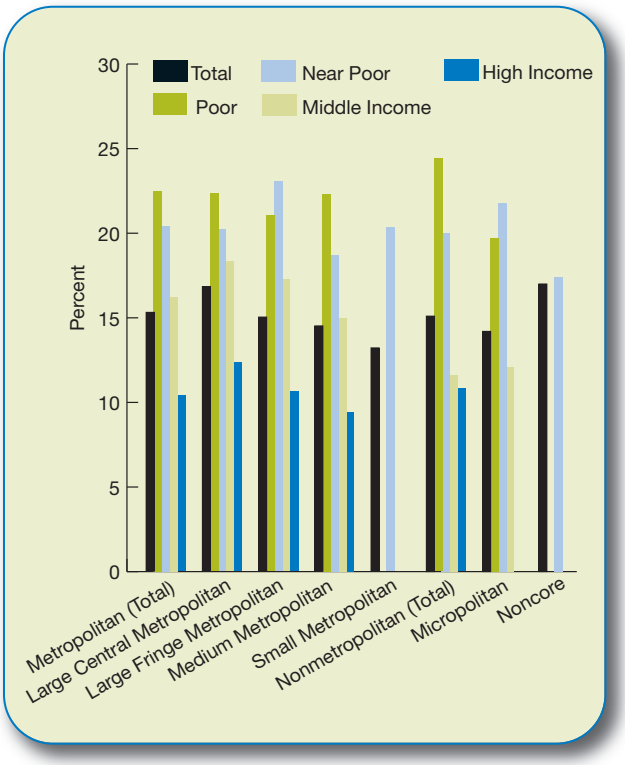
Large Central Metropolitan = central counties in metropolitan areas ≥1 million inhabitants.
Large Fringe Metropolitan = outlying (suburban) counties in metropolitan areas ≥1 million inhabitants.
Medium Metropolitan = counties in metropolitan areas of 250,000-999,999 inhabitants.
Small Metropolitan = counties in metropolitan areas of 50,000-249,999 inhabitants.
Micropolitan = counties in an area with an urban cluster of 10,000-49,999 inhabitants.
Noncore = <10,000 inhabitants.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population age 40 and over.
Note: Recommended services for diabetes are (1) hemoglobin A1c testing, (2) dilated eye examination, and (3) foot examination. Due to small sample sizes, estimates by race, ethnicity, income, or education could not be provided in all areas; these data were only available for metropolitan (total) and large central metropolitan.

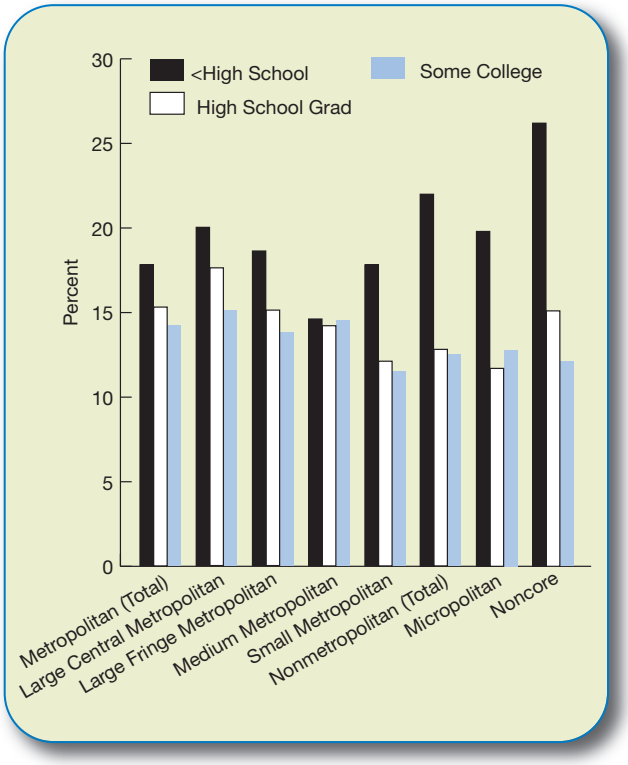
- In 2006, the percentage of diabetes patients who received all three recommended services for diabetes was lower for patients in nonmetropolitan areas than in metropolitan areas (32.0% compared with 43.5%; Figure 4.50).
- In metropolitan areas (total), there were significant ethnic, income, and educational disparities. Hispanics were less likely than non-Hispanic Whites to receive recommended care for diabetes (32.2% compared with 48.4%). Poor (36.4%) and near-poor (32.7%) individuals were less likely than high-income individuals (47.7%) to receive recommended care for diabetes. Individuals with less than a high school education were less likely than individuals with some college education to receive recommended care for diabetes (35.2% compared with 47.2%).

Timeliness: Care for Illness or Injury As Soon As Wanted

Timely delivery of appropriate care has been shown to improve health care outcomes and reduce health care costs. In addition, when patients need or want care, having access to that care improves their health care experience, which may further promote health.

Figure 4.51. Adults who needed care right away for an illness, injury, or condition in the last 12 months who sometimes or never got care as soon as wanted, by geographic location, stratified by income and education, 2006





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Small Metropolitan = counties in metropolitan areas of 50,000-249,999 inhabitants.
Micropolitan = counties in an area with an urban cluster of 10,000-49,999 inhabitants.
Noncore = <10,000 inhabitants.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population age 18 and over.
Note: Data are not available for poor, middle-, and high-income groups in noncore areas or in small metropolitan areas. Data are not available for the high-income group in micropolitan areas.

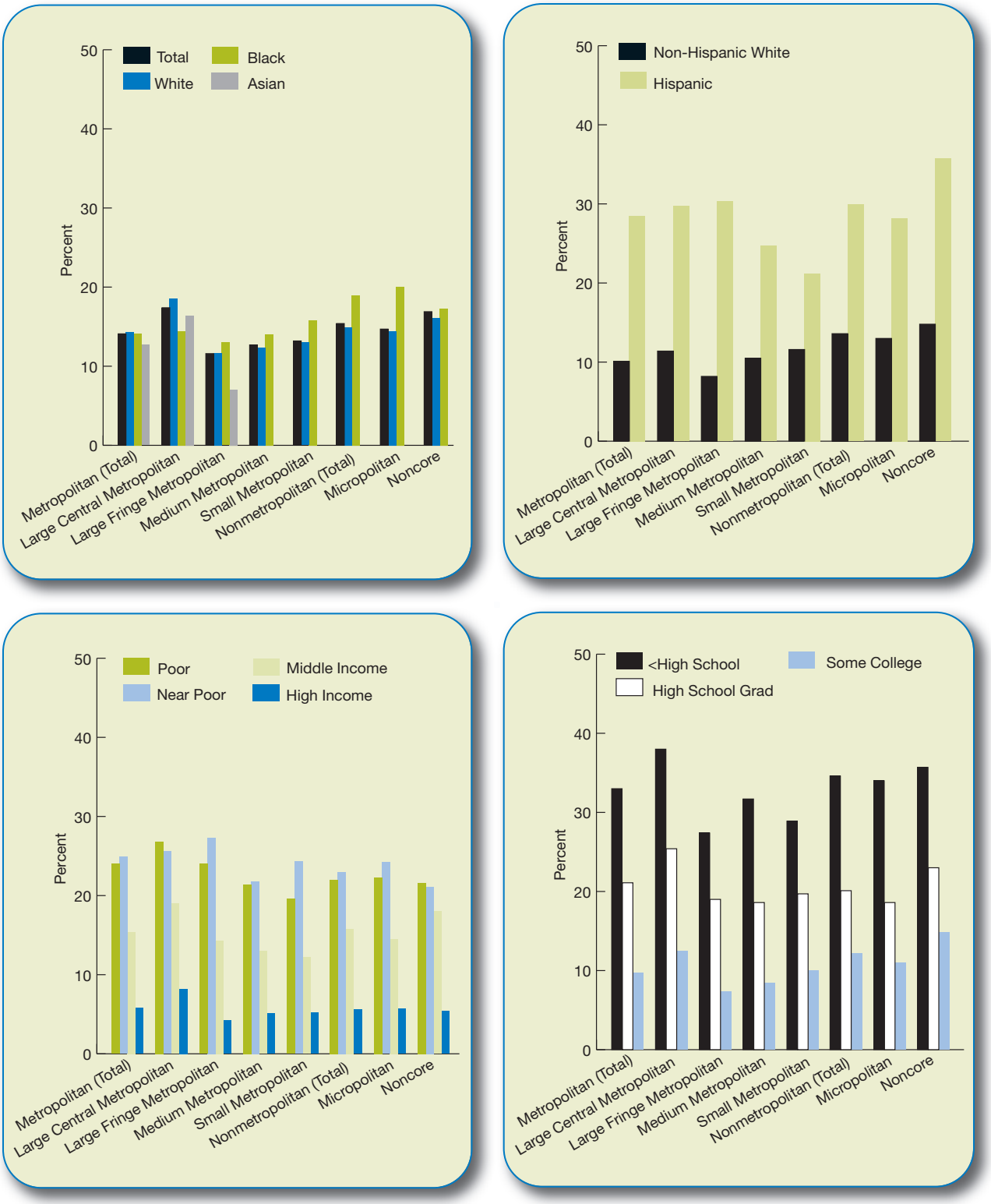
- There were no statistically significant differences between geographic areas in the overall percentage of adults who sometimes or never got care for illness or injury as soon as wanted (Figure 4.51).
- In nonmetropolitan areas, poor (24.4%) and near-poor (20.0%) individuals were more likely than high-income individuals (10.8%) to report problems getting care for illness or injury as soon as wanted.
- Differences by education also were observed in nonmetropolitan areas. Individuals with less than a high school education (22%) were more likely than individuals with some college education (12.5%) to report problems getting care for illness or injury as soon as wanted.
- There were significant differences by income in metropolitan areas. Poor (22.7%), near-poor (20.4%), and middle-income (16.2%) individuals were more likely than high-income (10.4%) individuals to report problems getting care for illness or injury as soon as wanted. When further stratified into large fringe, large central, medium, and small metropolitan areas, there were no statistically significant differences between poor and near-poor groups and high-income groups.
- In small metropolitan areas, individuals with less than a high school education were more likely than individuals with some college education to report problems getting care for illness or injury as soon as wanted (17.8% for less than high school compared with 11.5%).

Access to Health Care

Health Insurance

Access to health care services is a prerequisite to receipt of care, yet many Americans still face barriers to care. It has been observed that compared with urban residents, residents of rural areas are more likely to be uninsured, and those who are insured are more likely to be individually insured.[73] Furthermore, rural residents with group insurance are more likely to have fewer benefits and higher out-of-pocket expenses, suggesting a higher rate of underinsurance. Data for prolonged periods of uninsurance (no insurance coverage for a full year) are presented.

Figure 4.52. Adults under age 65 who were uninsured all year, by geographic location, stratified by race, ethnicity, income, and education, 2006



Large Central Metropolitan = central counties in metropolitan areas ≥1 million inhabitants.
Large Fringe Metropolitan = outlying (suburban) counties in metropolitan areas ≥1 million inhabitants.
Medium Metropolitan = counties in metropolitan areas of 250,000-999,999 inhabitants.
Small Metropolitan = counties in metropolitan areas of 50,000-249,999 inhabitants.
Micropolitan = counties in an area with an urban cluster of 10,000-49,999 inhabitants.
Noncore = <10,000 inhabitants.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population age 18 and over.
Note: Estimates for Asians in medium metropolitan, small metropolitan, nonmetropolitan, micropolitan, and noncore areas did not meet criteria for statistical reliability and are not reported here.

Nonmetropolitan areas

- Noncore areas had a higher percentage of adults who were uninsured than large fringe metropolitan areas (16.9% compared with 11.6%; Figure 4.52).
- In noncore areas, there were significant ethnic, income, and education disparities. Hispanics were more than twice as likely as non-Hispanic Whites to be uninsured all year (35.7% compared with 14.8%). Poor, near-poor, and middle-income individuals (21.6%, 21.1%, and 18.0%, respectively) were more likely than high-income individuals (5.4%) to be uninsured all year. In addition, individuals with less than a high school education (35.7%) and high school graduates (23%) were more likely than individuals with some college education (14.8%) to be uninsured all year.
- In micropolitan areas, there were significant racial, ethnic, income, and education disparities. Blacks were more likely than Whites to be uninsured all year (20.0% compared with 14.4%). Hispanics were more than twice as likely as non-Hispanic Whites to be uninsured all year (28.2% compared with 13%). Poor (22.3%), near-poor (24.2%), and middle-income individuals (14.5%) were more likely than high-income individuals (5.7%) to be uninsured all year. Individuals with less than a high school education (34.0%) and high school graduates (18.6%) were more likely than individuals with some college education (11.0%) to be uninsured all year.

Metropolitan areas

- There were statistically significant differences within metropolitan areas in the percentage of adults under age 65 who were uninsured all year. Among metropolitan areas, the lowest percentage of uninsured overall was in large fringe metropolitan areas (11.6%; Figure 4.52); the highest percentage was in large central metropolitan areas (17.4%).
- Large central metropolitan areas had significant racial, ethnic, income, and education disparities. In these areas, Blacks were less likely than Whites to be uninsured all year (14.4% compared with 18.6%). However, Hispanics were almost three times as likely as non-Hispanic Whites to be uninsured all year (29.7% compared with 11.4%). Poor (26.8%), near-poor (25.6%), and middle-income individuals (19%) were more likely than high-income individuals (8.2%) to be uninsured all year. Individuals with less than a high school education (38%) and high school graduates (25.4%) were more likely than individuals with some college education (12.5%) to be uninsured all year.

- Large fringe metropolitan areas also had significant ethnic, income, and education disparities. In these areas, Hispanics were almost four times as likely as non-Hispanic Whites to be uninsured all year (30.3% compared with 8.2%). Poor (24%), near-poor (27.3%), and middle-income individuals (14.3%) were more likely than high-income individuals (4.2%) to be uninsured all year. Individuals with less than a high school education (27.4%) and high school graduates (19%) were more likely than individuals with some college education (7.3%) to be uninsured all year.
- Medium metropolitan areas had significant ethnic, income, and education disparities as well. In these areas, Hispanics were more than twice as likely as non-Hispanic Whites to be uninsured all year (24.7% compared with 10.5%). Poor (21.4%), near-poor (21.8%), and middle-income individuals (13%) were more likely than high-income individuals (5.1%) to be uninsured all year. Individuals with less than a high school education (31.7%) and high school graduates (18.6%) were more likely than individuals with some college education (8.4%) to be uninsured all year.
- Small metropolitan areas also had significant ethnic, income, and education disparities. In these areas, Hispanics were almost twice as likely as non-Hispanic Whites to be uninsured all year (21.2% compared with 11.6%). Poor (19.6%), near-poor (24.3%), and middle-income individuals (12.2%) were more likely than high-income individuals (5.2%) to be uninsured all year. Individuals with less than a high school education (28.9%) and high school graduates (19.7%) were more likely than individuals with some college education (10%) to be uninsured all year.

Individuals With Disabilities or Special Health Care Needs

Individuals with disabilities or special health care needs include iindividuals who use nursing home and home health care or end-of-life health care and children with special heath care needs (CSHCN). The NHDR tracks many measures of relevance to individuals with special health care needs.

In this year's report, data on quality, access, and health care utilization are presented for adults with disabilities. This is the third year in which the Adults With Disabilities section has been expanded to include more analyses and additional data sources using a comparable measure of disability. This year the Adults With Disabilities section uses MEPS data. In last year's report, this section used data from the National Health Interview Survey (NHIS).

The appendix tables in this year's report, as in last year's report, present data categorized by activity limitation for all NHIS and MEPS tables. Activity limitations was included as a stub variable starting in the 2007 report, where it was included in the MEPS appendix tables. The goal for future reports is to use NHIS, MEPS, and additional data sources to include more information about individuals with disabilities.

Component of health care need	Measure
Access to care	Delayed dental care[xix]
Health care utilization	Dental visits
Access to care	Underinsurance, financial burden of health care costs

In addition, findings for people who use nursing home care are presented in the section on Supportive and Palliative Care in Chapter 2, Quality of Health Care.

[xix] This is a supplemental measure of the NHDR measure set.

Adults With Disabilities

This is the third year in which the NHDR aims to include more information about individuals with disabilities. To reach this goal, AHRQ convened a disabilities subgroup of the National Healthcare Quality Report/National Healthcare Disparities Report Interagency Work Group. This subgroup received assistance from the Interagency Subcommittee on Disability Statistics of the Interagency Committee on Disability Research.

The charge to the disabilities subgroup was to advise AHRQ on measures of disabilities from existing data that could be used in the NHDR to track disparities in health care quality and access among individuals with disabilities. The disability measures would need to be comparable across national surveys. For this initial effort, the subgroup focused on measures for the adult population, a population for whom the most disability survey data were available.

Several ways of defining and measuring disability exist. Among the more common approaches are to identify individuals who:

- Have problems with everyday functions, such as vision, hearing, communication, self-care, mobility, learning, and behavior.
- Have difficulty with complex activities, such as working.
- Meet the eligibility criteria for important income maintenance or training programs (e.g., Social Security Disability Income or vocational rehabilitation).

However, a particular challenge in reporting on racial, ethnic, and socioeconomic differences related to disability is that many data sources do not capture disability and, when they do collect such data, do not collect the data in the same way.

The International Classification of Functioning, Disability, and Health (ICF)[74] was adopted by the disabilities subgroup as a model to guide the deliberations. The subgroup reviewed questions and response categories for three national surveys—NHIS, MEPS, and the Medicare Current Beneficiary Survey—to identify inconsistencies and discrepancies in measurement of the major domains of disability in the ICF.

For the 2009 NHDR, AHRQ is again using a broad, inclusive measure of disability. This definition is intended to be consistent with statutory definitions of disability, such as the first criterion of the 1990 Americans With Disabilities Act (ADA) (i.e., having a physical or mental impairment that substantially limits one or more major life activities[75, 76]) and Federal program definitions of disability based on the ADA. For the purpose of the NHDR, people with disabilities are those with physical, sensory, and/or mental health conditions that can be associated with a decrease in functioning in such day-to-day activities as bathing, walking, doing everyday chores, and engaging in work or social activities. In displaying the data on disability, paired measures are shown to preserve the qualitative aspects of the data:

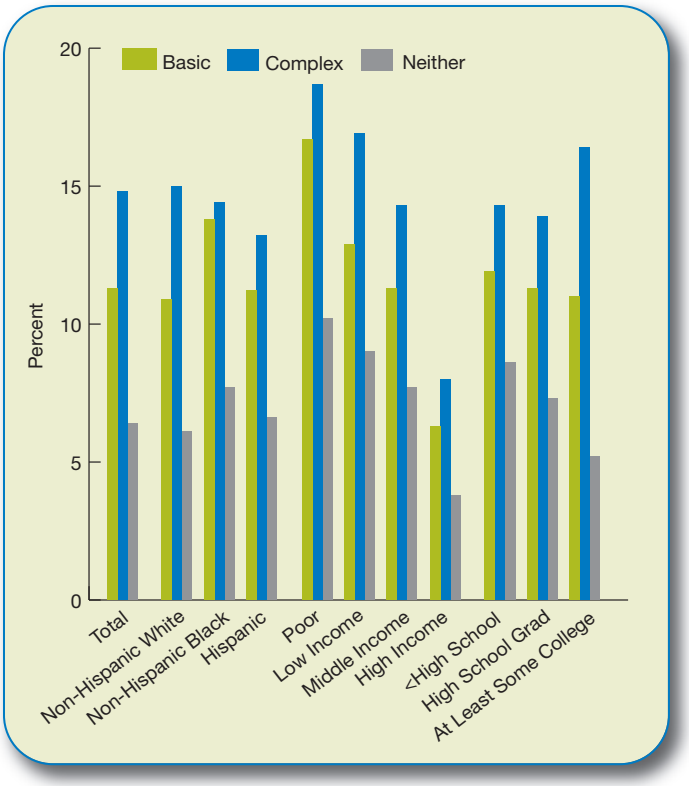
- Limitations in *basic* activities represent problems with mobility and other basic functioning at the person level.
- Limitations in *complex* activities represent limitations encountered when the person, in interaction with the environment, attempts to participate in community life.

Limitations in *basic* activities include problems with mobility, self-care (activities of daily living, or ADLs), domestic life (instrumental activities of daily living, or IADLs), and activities that depend on sensory functioning (limited to people who are blind or deaf). Limitations in *complex* activities include limitations experienced in work and in community, social, and civic life. The use of the subgroup's recommendation of these paired measures of basic and complex activity limitations is conceptually similar to the way others have divided disability77 and is consistent with the ICF separation of activities and participation domains.[74] These two categories are not mutually exclusive; people may have limitations in basic activities and complex activities.

Access to Care: Adults Unable To Get or Delayed in Getting Needed Dental Care

As with other health care, patient perceptions of dental care need to include perceived difficulties or delays in obtaining care and problems getting care as soon as wanted. Although patients may not always be able to assess their need for dental care, problems getting care when patients perceive that they need it likely reflect significant barriers to services. Dental care, unlike most other health care, is often not covered by health insurance.

Figure 4.53. Adults age 18 and over who were unable to get or delayed in getting needed dental care by race/ethnicity, family income, and education, stratified by activity limitation, 2006



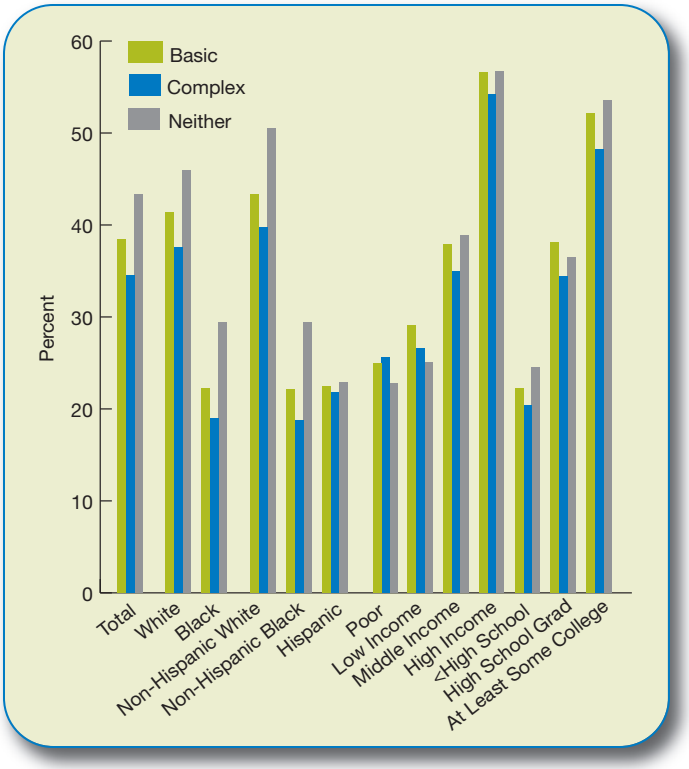
Key: Basic = basic activity limitation (i.e., limitation in mobility or other basic person-level functioning); complex = complex activity limitation (i.e., limitation in ability to participate in community life); neither=neither basic nor complex activity limitation.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population age 18 and over.

- Overall, adults with complex activity limitations were significantly more likely than adults with basic activity limitations to report being unable to get or delayed in getting needed dental care (14.8% compared with 11.3%; Figure 4.53). Those with basic activity limitations were significantly more likely than those with neither limitation to report being unable to get or delayed in getting needed dental care (11.3% compared with 6.4%).
- The same pattern holds for non-Hispanic Whites and those with at least some college education. Among adults with at least some college education, those with complex activity limitations were about three times as likely as those with neither limitation to report being unable to get or delayed in getting needed dental care (16.4% compared with 5.2%).
- Among non-Hispanic Black and Hispanic adults, those with basic and complex activity limitations were significantly more likely to report being unable to get or delayed in getting needed dental care than those with neither limitation. This pattern also held for all income groups, as well as for those with less than a high school education and high school graduates.
- Among adults with neither basic nor complex activity limitations, non-Hispanic Blacks (7.7%) were significantly more likely than non-Hispanic Whites (6.1%) to report being unable to get or delayed in getting needed dental care.
- Within each of the three activity limitation groups (basic, complex, neither), poor, low-income, and middle-income adults were significantly more likely than high-income adults to report being unable to get or delayed in getting needed dental care.
- Among adults with neither basic nor complex activity limitations, those with less than a high school education (8.6%) and high school graduates (7.3%) were significantly more likely than those with at least some college education (5.2%) to report being unable to get or delayed in getting needed dental care.

Health Care Utilization: Dental Visits

Regular dental visits promote prevention, early diagnosis, and optimal treatment of oral diseases and conditions. Failure to visit the dentist can result in delayed diagnosis, compromised health overall, and, occasionally, even death.[78]

Figure 4.54. Adults age 18 and over who had a dental visit in the calendar year, by race, ethnicity, family income, and education, stratified by activity limitation, 2006



Key: Basic = basic activity limitation (i.e., limitation in mobility or other basic person-level functioning); complex = complex activity limitation (i.e., limitation in ability to participate in community life); neither = neither basic nor complex activity limitation.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population age 18 and over.

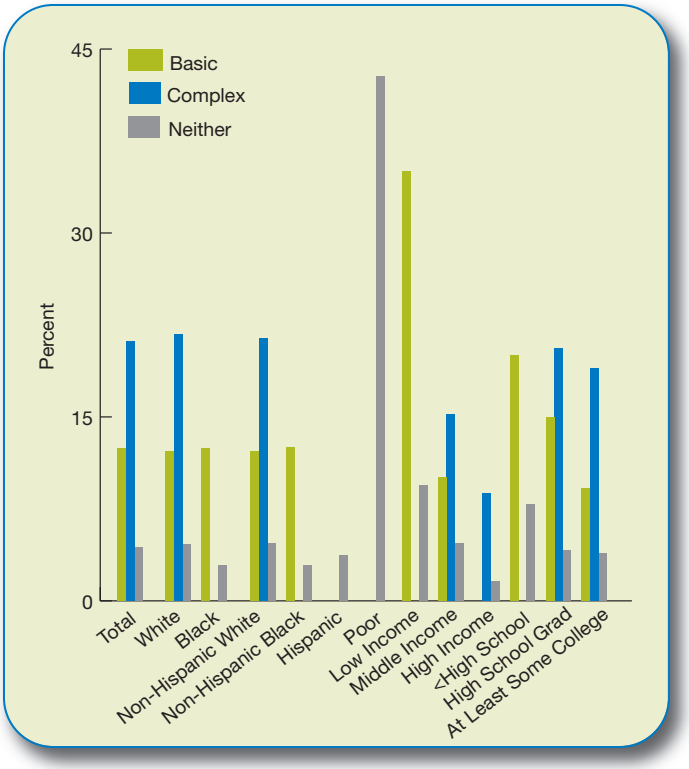
- Overall, adults with complex activity limitations were significantly less likely than those with basic activity limitations to have had a dental visit in the calendar year (34.5% compared with 38.4%; Figure 4.54). Those with basic activity limitations were significantly less likely than those with neither limitation to have had a dental visit in the calendar year (38.4% compared with 43.3%). The same pattern holds for Whites.
- Among Black, non-Hispanic White, and non-Hispanic Black adults, those with basic and complex activity limitations were significantly less likely than those with neither limitation to have had a dental visit in the calendar year.
- Differences in dental visits by activity limitation status were not statistically significant within any of the income groups (poor, low, middle, and high).
- Among adults with at least some college education, those with complex activity limitations were significantly less likely than those with neither limitation to have had a dental visit in the calendar year (48.2% compared with 53.5%).

- Within each of the three activity limitation groups, Black adults were significantly less likely than White adults to have had a dental visit. Non-Hispanic Black adults and Hispanic adults were significantly less likely than non-Hispanic Whites to have had a dental visit.
- Within each of the three activity limitation groups, poor, low-income, and middle-income adults were significantly less likely to have had a dental visit than high-income adults. Similarly, within each activity limitation group, those with less than a high school education and high school graduates were significantly less likely than those with at least some college education to have had a dental visit.

Access to Health Care: Underinsurance

Private health insurance does not always protect individuals from the high cost of medical care. Even with private health insurance, a person may be underinsured. For example, a family's out-of-pocket medical expenses excluding premiums may be greater than 10% of total family income. Having high out-of-pocket medical expenses may directly affect access to needed medical and preventive care.[15, 16]

Figure 4.55. Adults ages 18-64 with private insurance whose family's out-of-pocket medical expenses excluding premiums were more than 10% of total family income, by race, ethnicity, family income, and education, stratified by activity limitation, 2006



Key: Basic = basic activity limitation (i.e., limitation in mobility or other basic person-level functioning); complex = complex activity limitation (i.e., limitation in ability to participate in community life); neither = neither basic nor complex activity limitation.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population ages 18-64.
Note: Estimates for Blacks, non-Hispanic Blacks, low-income people, and people with less than a high school education with complex activity limitations, Hispanics and poor people with basic or complex activity limitations, and high-income people with basic activity limitations did not meet criteria for statistical reliability.

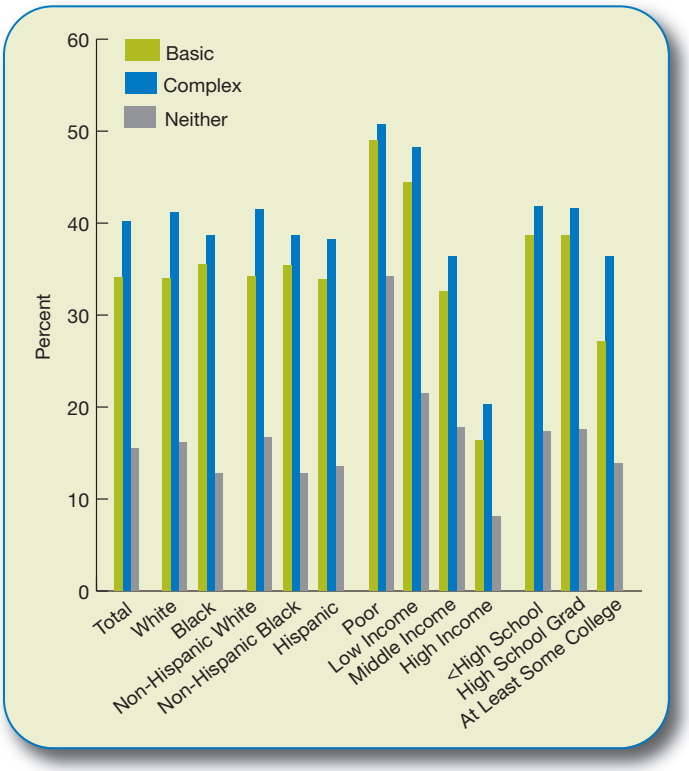
- Of adults ages 18-64 with private health insurance, people with complex activity limitations were more likely to be underinsured than those with basic activity limitations (21.2% compared with 12.4%; Figure 4.55). People with basic activity limitations (12.4%) were more likely to be underinsured than those with neither limitation (4.4%).
- This same pattern holds for Whites, non-Hispanic Whites, and people with at least some college education.
- Among Black, non-Hispanic Black, and low-income people and people with less than a high school education, those with basic activity limitations were significantly more likely to be underinsured than those with neither basic nor complex activity limitations. Among middle-income people and high school graduates, those with basic or complex activity limitations were significantly more likely to be underinsured than those with neither limitation.

- Among people with neither basic nor complex activity limitations, Whites were significantly more likely than Blacks (4.6% compared with 2.9%) and non-Hispanic Whites were significantly more likely than non-Hispanic Blacks (4.7% compared with 2.9%) to be underinsured.
- Among people with neither basic nor complex activity limitations, those living in poor (42.8%), low-income (9.4%), and middle-income (4.7%) families were more likely to be underinsured than those living in high-income families (1.6%). The percentage of underinsured people among those with no activity limitations who live in poor families was 27 times that of the percentage in high-income families (42.8% compared with 1.6%).
- Among people with basic activity limitations, those with less than a high school education were more likely to be underinsured than those with at least some college education (20.0% compared with 9.2%). This finding also was observed for people with neither basic nor complex activity limitations (less than high school, 7.9%; at least some college education, 3.9%)

Access to Health Care: Financial Burden of Health Care Costs

High medical financial burden is defined as family out-of-pocket medical expenditures, including premiums, exceeding 10% of total family income. This is a comprehensive and policy-relevant measure. Having high medical financial burden may directly affect access to care.[16]

Figure 4.56. Adults ages 18-64 whose family out-of-pocket medical expenses, including premiums, exceeded 10% of total family income, by race, ethnicity, family income, and education, stratified by activity limitation, 2006



Key: Basic = basic activity limitation (i.e., limitation in mobility or other basic person-level functioning); complex = complex activity limitation (i.e., limitation in ability to participate in community life); neither = neither basic nor complex activity limitation.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006.
Denominator: Civilian noninstitutionalized population ages 18-64.

- Overall, among adults ages 18-64, those with complex activity limitations were significantly more likely to be living in families with high medical financial burden than those with basic activity limitations (40.2% compared with 34.1%; Figure 4.56). Those with basic activity limitations were significantly more likely to be living in families with high medical financial burden than those with neither limitation (34.1% compared with 15.5%).
- This same pattern holds for Whites, non-Hispanic Whites, and people with at least some college education.
- Among Black, non-Hispanic Black, Hispanic, poor, low-income, middle-income, and high-income people, people with less than a high school education, and high school graduates, those with basic and complex activity limitations were significantly more likely to be living in families with high medical financial burden than those with neither limitation.

- Among people with neither basic nor complex activity limitations, Whites were significantly more likely than Blacks (16.1% compared with 12.8%) and non-Hispanic Whites were significantly more likely than non-Hispanic Blacks and Hispanics (16.7% compared with 12.8% and 13.5%, respectively) to be living in families with high medical financial burden.
- Within each of the three activity limitation groups (basic, complex, neither), adults ages 18-64 living in poor, low-income, or middle-income families were significantly more likely than those living in high-income families to be in families with high medical financial burden. For example, among those with basic activity limitations, people living in poor families (49.0%) were about three times as likely to be in families with high financial medical burden as those living in high-income families (16.4%).
- Among people with basic activity limitations, those with less than a high school education and high school graduates were more likely to be living in families with high medical financial burden than those with at least some college education (38.7% and 38.7%, respectively, compared with 27.1%). This finding also was observed among people with neither basic nor complex activity limitations (less than a high school education, 17.3%; high school graduates, 17.6%; at least some college education, 13.9%).

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List of Core Measures

Core Measures, Data Sources, and Availability for Select Groups

Measure	Data source	Black	Hispanic	Asian or API	AI/AN	Poor
Quality						
Women age 40 and over who reported they had a mammogram within the past 2 years	NHIS	✔	✔	✔	✔	✔
Breast cancer incidence per 100,000 women age 40 and over diagnosed at advanced stage	SEER	✔	✔	✔	✔	
Breast cancer deaths per 100,000 female population per year	NVSS-M	✔	✔	✔	✔	
Adults age 50 and over who received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test	NHIS	✔	✔	✔	✔	✔
Colorectal cancer diagnosed at advanced stage per 100,000 population age 50 and over	SEER	✔	✔	✔	✔	
Colorectal cancer deaths per 100,000 population per year	NVSS-M	✔	✔	✔	✔	
Adults age 40 and over with diabetes who received all three exams in the calender year: hemoglobin A1c measurement, dialated eye examination, and foot examination	MEPS	✔	✔			✔
Adult dialysis patients registered on a waiting list for transplantation	USRDS	✔	✔	✔	✔	
Hemodialysis patients with adequate dialysis	ESRD CPMP	✔	✔	✔	✔	
Hospital care for heart attack patients	QIO	✔	✔	✔	✔	
Hospital care for heart failure patients	QIO	✔	✔	✔	✔	
Deaths per 1,000 adult hospital admissions with acute myocardial infarction	HCUP	✔	✔	✔		✔
New AIDS cases per 100,000 population ages 13 and over	CDC AIDS Surveillance	✔	✔	✔	✔	
Children ages 19-35 months who received all recommended vaccines	NIS	✔	✔	✔	✔	✔

✔ Indicates that reliable data on measure are available for this group and included in summary across measures of quality and access for this group.

Key: API=Asian or Pacific Islander; AI/AN=American Indian or Alaska Native; Poor=individuals with household incomes <100% of Federal poverty thresholds.

Core Measures, Data Sources, and Availability for Select Groups (continued)

Measure	Data source	Black	Hispanic	Asian or API	AI/AN	Poor
Children ages 2-17 for whom a health provider gave advice about physical activity	MEPS	✔	✔	✔		✔
Children ages 3-6 who had their vision checked by a health provider	MEPS	✔	✔			✔
Children ages 2-17 who received advice about healthy eating	MEPS	✔	✔	✔		✔
Children ages 2-17 who had a dental visit in the past year	MEPS	✔	✔	✔		✔
Suicide deaths per 100,000 population	NVSS-M	✔	✔	✔	✔	
Adults with a major depressive episode who received treatment for depression	NSDUH	✔	✔			✔
People age 12 and over who needed treatment for illicit drug use or alcohol problem and who received such treatment at a specialty facility	NSDUH	✔	✔			✔
Adult smokers who received advice to quit smoking	MEPS	✔	✔			✔
Adults with obesity who received advice to exercise more	MEPS	✔	✔			✔
Adults with obesity who received advice about healthy eating	MEPS	✔	✔			✔
Adults age 65 and over who ever received pneumococcal vaccination	NHIS	✔	✔	✔		✔
Hospital care for pneumonia patients	QIO	✔	✔	✔	✔	
Patients with tuberculosis who completed a curative course of treatment within 1 year of initiation of treatment	CDC TB Surveillance	✔	✔	✔	✔	
Older women screened for osteoporosis	MCBS	✔	✔	✔	✔	✔
Long-stay nursing home residents with physical restraints	CMS MDS	✔	✔	✔	✔	
High-risk long-stay nursing home residents with pressure sores	CMS MDS	✔	✔	✔	✔	
Short-stay nursing home residents with pressure sores	CMS MDS	✔	✔	✔	✔	
Adult home health care patients whose ability to walk or move around improved	OASIS	✔	✔	✔	✔	
Adult home health care patients who were admitted to the hospital	OASIS	✔	✔	✔	✔	
Adult surgery patients with postoperative pneumonia or venous thromboembolic event	MPSMS	✔				
Adult surgery patients who received appropriate timing of antibiotics	QIO	✔	✔	✔	✔	

✔ Indicates that reliable data on measure are available for this group and included in summary across measures of quality and access for this group.

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Core Measures, Data Sources, and Availability for Select Groups (continued)

Measure	Data source	Black	Hispanic	Asian or API	AI/AN	Poor
Bloodstream infections or mechanical adverse events associated with central venous catheter placements	MPSMS	✔				
Deaths per 1,000 discharges following complications of care	HCUP	✔	✔	✔		✔
Adults age 65 and over who received potentially inappropriate prescription medications	MEPS	✔	✔			✔
Adults who sometimes or never got care for illness or injury as soon as wanted	MEPS	✔	✔	✔		✔
Emergency department visits in which patients left without being seen	NHAMCS	✔		✔		
Adults whose health providers sometimes or never listened carefully, explained things clearly, respected what they had to say, and spent enough time with them	MEPS	✔	✔	✔		✔
Children whose health providers sometimes or never listened carefully, explained things clearly, respected what they or their parents had to say, and spent enough time with them	MEPS	✔	✔	✔		✔
Access						
People under age 65 with health insurance	NHIS	✔	✔	✔	✔	✔
People under age 65 who were uninsured all year	MEPS	✔	✔	✔	✔	✔
People with a specific source of ongoing care	NHIS	✔	✔	✔	✔	✔
People with a usual primary care provider	MEPS	✔	✔	✔	✔	✔
People without a usual source of care who indicated a financial or insurance reason for not having a source of care	MEPS	✔	✔	✔		✔
People who were unable to get or delayed in getting needed care	MEPS	✔	✔			✔

✔ Indicates that reliable data on measure are available for this group and included in summary across measures of quality and access for this group.

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