National Healthcare Disparities Report

2008

AHRQ

Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

National Healthcare Disparities Report

2008

U.S. Department of
Health and Human Services

Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20850

AHRQ Publication No. 09-0002
March 2009
www.ahrq.gov/qual/qrdr08.htm

Acknowledgments

The NHDR is the product of collaboration among agencies across the Department of Health and Human Services (HHS). Many individuals guided and contributed to this report. Without their magnanimous support, this report would not have been possible.

Specifically, we thank:

Primary AHRQ Staff: Carolyn Clancy, William Munier, Katherine Crosson, Ernest Moy, Karen Ho, and Jeffrey Brady.

HHS Interagency Workgroup for the NHQR/NHDR: Roxanne Andrews (AHRQ), Hakan Aykan (ASPE), Rachel Ballard-Barbash (NCI), Douglas Boenning (HHS-ASPE), Jeffrey Brady (AHRQ-CQuIPS), Miriam Campbell (CMS), Cecelia Casale (AHRQ-OEREP), Fran Chevarley (AHRQ-CFACT), Steven Clauser (NCI), Rameicha Cooks (HRSA), Agnes Davidson (OPHS), Denise Dougherty (AHRQ-OEREP), Brenda Evelyn (FDA), Yvette Fryar (HRSA), Edward Garcia (CMS), Olinda Gonzalez (SAMHSA), Tanya Grandison (HRSA), Miryam Granthon (OPHS-OMH), Darryl Gray (AHRQ-CQuIPS), Saadia Greenberg (AoA), Kirk Greenway (IHS), Lein Han (CMS), Linda Harlan (NCI), Debbie Hattery (CMS), Karen Ho (AHRQ-CQuIPS), Deloris Hunter (NIH), Memuna Ifedirah (CMS-OCSQ), Padmini Jagadish (AHRQ-OEREP), Linda Johnston-Lloyd (HRSA), Jackie Shakeh Kaftarian (AHRQ-OEREP), Ruth Katz (ASPE), Sophia Kazakova (CDC-CCID-OD), Richard Klein (CDC-NCHS), Lisa Koonin (CDC-NCHS), Onelio Lopez (OCR), Leopold Luberecki (ASPE), Diane Makuc (CDC-NCHS), Marty McGeein (HHS-ASPE), Richard McNaney (CMS), Nancy Miller (NIH), Carmen Moten (NIH-NIMH), Ernest Moy (AHRQ-CQuIPS), Leo Nolan (IHS), Cynthia Ogden (CDC-NCHS), Anna Maria Padian (HRSA), Judith Peres (ASPE), Susan Polniaszek (ASPE), Susan Queen (HRSA), Michael Rapp (CMS), Georgetta Robinson (CMS), Rochelle Rollins (OMH), Susan Rossi (NIH), Beatrice Rouse (SAMHSA), Asel Ryskulova (CDC-NCHS), Judy Sangl (AHRQ-CQuIPS), Michael Schoenbaum (NIMH), Adelle Simmons (HHS-ASPE), Alan E. Simon (CDC-NCHS), Sunil Sinha (CMS), Jane Sisk (CDC-NCHS), Phillip Smith (IHS), Nancy Sonnenfeld (CDC/NCHS), Caroline Taplin (HHS-ASPE), Emmanuel Taylor (NCI), Wilma Tilson (HHS-ASPE), Benedict Truman (CDC), Joan Van Nostrand (HRSA), Nadarajen A. Vydelingum (NIH), Barbara Wells (NHLBI), Valerie Welsh (OPHS/OMH), Odies Williams (OCR), Lee Wilson (ASPE-OS), and Susan Yanovski (NIH/NIDDK).

AHRQ NHQR/NHDR Team: Roxanne Andrews, Jeffrey Brady, Denise Burgess, Fran Chevarley, Cecilia Rivera Casale, Katherine Crosson, Denise Dougherty, Darryl Gray, Karen Ho, Alan Hsu, Jackie Shakeh Kaftarian, Stephanie Klapper, Laura McKenzie Phelps, Oscar Mensah, Ernest Moy, William Munier, Ryan Mutter, Daniel Pak, Judy Sangl, Barbara Slivers, and, Marc Zodet.

HHS Data Experts: Barbara Altman (CDC-NCHS), Roxanne Andrews (AHRQ), Frances Chevarley (AHRQ), Steven Cohen (AHRQ), James Colliver (SAMHSA), Paul Eggers (NIH), David Keer (ED-OSERS), William Mosher (CDC-NCHS), Cynthia Ogden (CDC-NCHS), Asel Ryskulova (CDC-NCHS), Alan E. Simon (CDC-NCHS), Jane Sisk (CDC-NCHS), and Marc Zodet (AHRQ) and members of the Interagency Subcommittee on Disability Statistics.

Other Data Experts: Stephen Connor (NHCPO), Stephen Edge (Rosewell Park Cancer Institute), Michael Halpern (American Cancer Society), Ronald Kessler (Harvard Medical School), Bryan Palis (NCBD, American College of Surgeons), Florentina R. Salvail (Hawaii Department of Health), Allison Petrilla (NHCPO), Hardy Spoehr (Papa Ola Lokahi), Andrew Stewart (NCBD, American College of Surgeons), and Jo Ann Tsark (Papa Ola Lokahi).

Other AHRQ Contributors: Doreen Bonnett, Cindy Brach, Xiuhua Chen, Marybeth Farquhar, Karen Fleming-Michael, William Freeman, Amy Galifianakis, Paul Gorrell, Biff LeVee, Corey Mackison, Gerri Michael-Dyer, Karen Migdail, Laura Nawrocki, Pamela Owens, Mamatha Pancholi, Larry Patton, Wendy Perry, Deborah Queenan, Mary Rolston, Scott Rowe, Bruce Seeman, Randie Siegel, Christine Williams, and Phyllis Zucker.

Data Support Contractors: CHD-Fu, Social and Scientific Systems, Thomson Reuters Healthcare, and Westat.

Contents

Appendixes:

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 moreover, some Americans receive even worse care than other Americans. The quality of health care is different for different people. Within the scope of health care delivery, these disparities are due to differences in access to care, provider biases, poor provider-patient communication, poor health literacy, and 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, ethnicity, and socioeconomic status, this directive also includes a charge to examine disparities in "priority populations." These include groups with unique health care needs or issues that require special attention. Among the priority populations addressed in the NHDR are women, children, older adults, residents of rural areas, and individuals with disabilities or special health care needs.

The NHDR uses the same 220 measures used in the NHQR 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 45 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 2008 report provides a more readily understandable summary and explanation of the key results derived from the data.[iv] While the measures selected for inclusion in the NHDR are derived from the most current scientific knowledge, this knowledge base is not evenly distributed across the dimensions of health care quality, nor across racial, ethnic, and other priority populations. The analysis in the following pages centers on measures for which data are available and that fit within the framework provided by the Institute of Medicine.[1]

Three key themes emerge in the 2008 NHDR:

- Disparities persist in health care quality and access.
- Magnitude and pattern of disparities are different within subpopulations.
- Some disparities exist across multiple priority populations.

---

[i] This 2008 report is the sixth National Healthcare Disparities Report (NHDR) mandated by the U.S. Congress (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 analyses.

[iii] The HHS Interagency Work Group, which represents 18 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.

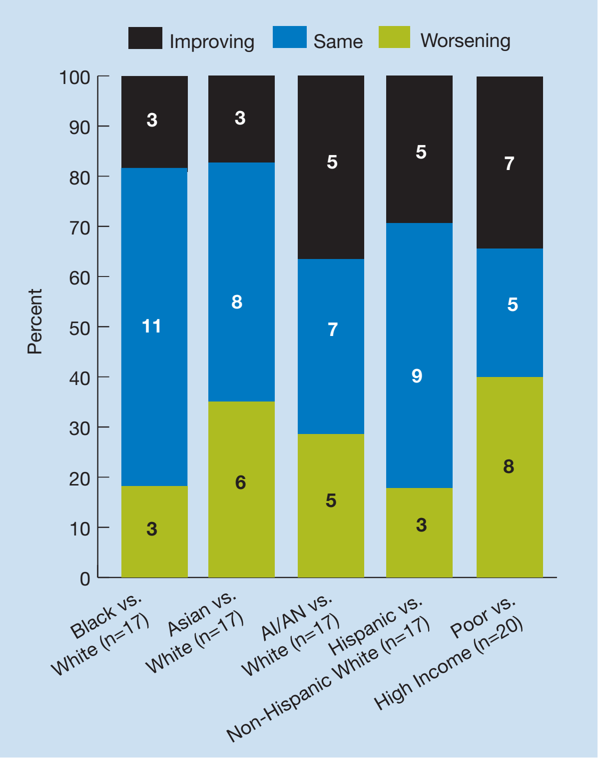
Disparities Persist in Health Care Quality and Access

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 of care) are key factors in ensuring good health outcomes.

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. The NHDR includes the added dimension of access to care to measure differences in health insurance coverage, utilization of general health services, and other barriers to care. Below are figures that illustrate for each population how disparities in quality and access have changed in the past 5 years.

Figure H.1 shows that for Blacks, Asians, American Indians/Alaska Natives (AI/ANs), Hispanics, and poor people, at least 60% of measures of quality of care are not improving (either stayed the same or worsened).

Figure H.1. Change over time in racial, ethnic, and socioeconomic disparities for selected core quality measures, 2000-2001 to 2005-2006



Improving = Population-reference group difference becoming smaller at an average annual rate of greater than or equal to 1%.
Same = Population-reference group difference changing at less than an average annual rate of 1%.
Worsening = Population-reference group difference becoming larger at an average annual rate of greater than or equal to 1%.
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.

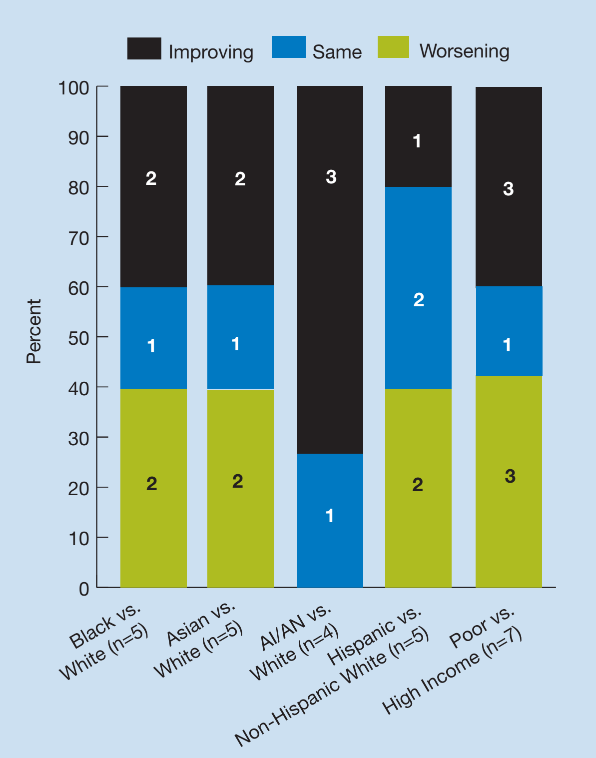
Highlights

Many Americans have 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.2 is a summary of trends in the core measures of access.

- For AI/ANs, 75% of the core measures that could be tracked over time improved (gap decreased).
- For Blacks and Asians, 60% of the core measures used to track access remained unchanged (gap stayed the same) or got worse (gap increased).
- For Hispanics, 80% of core access measures remained unchanged or got worse.
- For poor populations, 57% of core access measures remained unchanged or got worse.

Figure H.2. Change over time in racial, ethnic, and socioeconomic disparities for selected core access measures, 2000-2001 to 2005-2006*



* The most recent data year for AI/ANs is 2003.

Improving = Population-reference group difference becoming smaller at an average annual rate of greater than or equal to 1%.

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 greater than or equal to 1%.

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.

Making Patient's and Families' Lives Better

Providing data through the NHDR is only one of many efforts to reduce health care disparities in the United States. As multiple 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 professionals and patients, and changing health systems at the hospital, provider, and community level.

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 Web 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. The site also provides supplementary tools to help providers and organizations promote respectful, understandable, and effective care to an increasingly diverse patient population. This Web site provides access to online courses such as "A Physician's Practical Guide to Culturally Competent Care" and "Culturally Competent Nursing Care," as well as interactive tools such as the "Health Care Language Services Implementation Guide."
- The **Unified Health Communication Web-Based Training Program** is sponsored by the Health Resources and Services Administration (HRSA). This interactive Web-based 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, including most health care providers and human service agencies. OCR's Title VI enforcement activities aim to decrease health disparities by increasing access to health care and human services. OCR enforces Title VI by investigating race, color, and national origin discrimination complaints filed by individuals and advocacy groups; and by resolving those complaints through voluntary compliance agreements and corrective action monitoring. OCR, for example, recently entered into a voluntary compliance agreement with the Hawaii Department of Human Services (DHS), which administers a $1.7 billion annual budget, including the State's Medicaid, health, and long-term care programs. To comply with Title VI, Hawaii DHS has agreed to improve language assistance services for limited-English-proficient individuals, including translating vital documents and providing timely, competent interpreters.

Making Patient's and Families' Lives Better

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 (IOM). The purpose of the IOM roundtable is to generate action and engage 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 partnerships on research and policy discussions to address various topics. These include ways to bring together health care-focused and broader community-based approaches to address disparities more effectively; 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 the complex interactions of biologic and social factors as determinants of health; effective cultural competency techniques and cross-cultural education in health care settings; educational strategies to end health disparities; development and promotion of effective strategies to increase minority representation in medicine and health professions; and 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 was developed to identify and support 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, a Florida hospital agency, 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 Statement 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.

Making Patient's and Families' Lives Better

- **Healthy People 2010** is a comprehensive health promotion and disease prevention agenda. It has two overarching goals: (1) to increase life expectancy and improve quality of life, and (2) to eliminate health disparities among population subgroups based on characteristics such as race and ethnicity, gender, and income. Through a national consensus process, HHS identified specific objectives for improving the health of the Nation, established baseline values for the objectives, and set specific targets to be achieved by 2010. The Nation's Public Health Service agencies and agencies 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.

- AHRQ is a partner in the **National Business Group on Health (NBGH) Racial and Ethnic Health Disparities Advisory Board**, an initiative of NBGH and OMH to reduce racial and ethnic health disparities. Some employers have already developed initiatives to reduce health disparities. The Disparities Advisory Board will facilitate 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 an issue brief on why companies are making health disparities their business, including practical strategies and a Webinar to feature best practices. The brief will be distributed to NBGH members.

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's purpose is to identify and implement approaches to reducing racial and ethnic disparities and to improve 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.

Making Patient's and Families' Lives Better

- The **National Partnership for Action (NPA) To End Health Disparities** is a multilevel 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. Through a nationwide, comprehensive, community-driven, sustained approach, NPA seeks to illuminate the compelling issues that affect health outcomes, identify action steps that partners can adopt and adapt for their target audiences, highlight promising practices that help eliminate health disparities, and promote tools, programs, and information sources for stakeholders. Strategic actions have been developed around five core objectives: increase awareness of health disparities, strengthen leadership at all levels, improve health care outcomes for racial and ethnic minorities and underserved populations and communities, improve cultural and linguistic competency in delivering health services, and coordinate and use research and outcome evaluations more effectively. Six Regional Conversations (meetings) were held to bring together local, State, Tribal, regional, and Federal experts and practitioners from the private and public sectors to lay the foundation for a cohesive strategy. The meetings resulted in the development of 10 Regional Blueprints that are forming the basis for improved coordination of regional actions related to reducing health disparities. The Regional Blueprints are informing the development of a National Blueprint based on 20 wide-reaching strategies.

Magnitude and Patterns of Disparities Differ Among Various Populations

Improvements in preventive care, chronic care, and access to care have led to the elimination of disparities for some priority populations in areas such as mammograms, smoking cessation counseling, and appropriate timing of antibiotics. At the same time, many of the largest disparities have not changed significantly. The NHDR can be used to identify the most important gaps in care as well as improvements for priority populations. The complete picture of disparities is different for each population. An analysis of 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.

In 2005, the NHDR reported on the biggest gaps that existed in health care quality in America for Blacks, Asians, AI/ANs, Hispanics, and poor populations. Some of the largest gaps reported in 2005 remain the largest gaps in this year's NHDR.

- For Blacks, large disparities remain in new AIDS cases despite significant decreases. The proportion of new AIDS cases was 9.4 times as high for Blacks as for Whites. Hospital admissions for lower extremity amputations in patients with diabetes and lack of prenatal care for pregnant women in the first trimester are the largest disparities for Blacks observed in the 2008 NHDR.
- For Asians, disparities remain in timeliness of care. Asians were more likely than Whites to not get care for illness or injury as soon as wanted.

- For AI/ANs, disparities remain in prenatal care. AI/AN women were twice as likely to lack prenatal care as White women.[v] Also, AI/AN adults were less likely than Whites to receive colorectal cancer screening.
- For Hispanics, large disparities also remain in new AIDS cases despite significant decreases. The rate of new AIDS cases was more than three times as high for Hispanics as for non-Hispanic Whites.
- For poor people, disparities remain in communication with health care providers. The percentage of children whose parents reported communication problems with their health providers was nearly four times as high for poor children as for high-income children. Poor adults were also more than twice as likely not to get timely care for an illness or injury.

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. For example, a relative rate of 4.0 means that this population was four times as likely as the White population to be hospitalized for pediatric asthma. This analysis is presented in Table H.1.

---

[v] The most recent data for prenatal care (2003-2005) are not comparable to previous data years due to revision of the U.S. Standard Certificate of Live Birth in 2003. Some States that have not adopted this revision are excluded. See footnote for Figure 4.26. Table H.1 shows comparison between groups within each data year only.

Table H.1. Three largest disparities in quality of health care for selected groups: Measure and rate relative to reference group, 2005 NHDR versus 2008 NHDR (Measures that have the largest gaps in both the 2005 and 2008 NHDR are in italics.)

	2005 NHDR		2008 NHDR	
Group	**Measure**	**Relative rate**	**Measure**	**Relative rate**
Black compared with White	*New AIDS cases per 100,000 population age 13 and over*	10.4	*New AIDS cases per 100,000 population age 13 and over*	9.4
	Hospital admissions for pediatric asthma per 100,000 population ages 2-17[a]	4.0	Hospital admissions for lower extremity amputations in patients with diabetes per 100,000 population	2.3
	Emergency department visits in which patients left without being seen	1.9	Pregnant women who did not receive prenatal care in the first trimester[b]	1.6
Asian compared with White	People age 18 and over with serious mental illness who did not receive mental health treatment or counseling in the past year[a]	1.6	*Adults who can sometimes or never get care for illness or injury as soon as wanted*	2.1
	Adults who can sometimes or never get care for illness or injury as soon as wanted	*1.6*	*Children ages 2-17 who did not receive advice about* physical activity	*1.2*
	Adults age 65 and over who did not ever receive pneumococcal vaccination	1.5	*Adults age 65 and over who did not ever receive pneumococcal vaccination*	1.6
AI/AN compared with White	*Pregnant women who did not receive prenatal care in the first trimester*[b]	2.1	*Pregnant women who did not receive prenatal care in the first trimester*[b]	2.1
	Composite: Adults who reported poor communication with health providers	1.8	Adults age 50 and over who received colorectal cancer screening	1.4
	Children ages 2-17 who did not receive advice about physical activity	1.3	Home health care patients who were admitted to the hospital	1.3

Table H.1. Three largest disparities in quality of health care for selected groups: Measure and rate relative to reference group, 2005 NHDR versus 2008 NHDR (Measures that have the largest gaps in both the 2005 and 2008 NHDR are in italics.)

	2005 NHDR		2008 NHDR	
Group	**Measure**	**Relative rate**	**Measure**	**Relative rate**
Hispanic compared with non-Hispanic White	*New AIDS cases per 100,000 population age 13 and over*	3.7	*New AIDS cases per 100,000 population age 13 and over*	3.3
	Adults who can sometimes or never get care for illness or injury as soon as wanted	2.0	*Composite: Children whose parents reported poor communication with health providers*	2.0
	Composite: Children whose parents reported poor communication with health providers	1.8	Pregnant women who did not receive prenatal care in the first trimester[b]	2.0
Poor compared with high	*Composite: Children whose parents reported poor communication with health providers*	3.3	*Composite: Children whose parents reported poor communication with health providers*	3.7
	Adults who can sometimes or never get care for illness or injury as soon as wanted	*2.3*	*Adults who can sometimes or never get care for illness or injury as soon as wanted*	*2.5*
	Children ages 2-17 who did not have a dental visit	2.0	Women age 40 and over who reported they did not have a mammogram in the last 2 years	2.1

[a] This measure was removed from the 2008 NHQR and NHDR core list.

[b] The most recent data for prenatal care (2003-2005) are not comparable to previous data years due to revision of the U.S. Standard Certificate of Live Birth in 2003. Some States that have not adopted this revision are excluded. See footnote for Figure 4.26. Table H.2 shows comparison between groups within each data year only.

Note: Relative rate is used to compare one group with its reference group. It is calculated by dividing the group's estimate by the reference group's estimate. For example, the relative rate of new AIDS cases for Blacks compared with Whites is 9.4 in the 2008 NHDR. This means that Blacks have a rate that is 9.4 times as high as Whites for this measure.

While some disparities have remained the same or have gotten worse, other disparities have shown some improvement. Some findings demonstrate progress in decreasing disparities, where gaps have actually decreased.

- From 2000 to 2005, for Blacks, the rate of deaths per 1,000 discharges with complications potentially resulting from care (failure to rescue) improved (from 159.2 to 121.8; in 2005, this rate was not significantly different from Whites). The gap between Blacks and Whites decreased to the point that Blacks have better outcomes in this measure (from a relative rate of 1.1 to 0.97).

- From 2000 to 2005, the percentage of Asian women age 40 and over who reported they had a mammogram within the last 2 years improved (approximately 4.36 million women received effective screening for breast cancer in 2005). The gap between AI/ANs and Whites who did not receive a mammogram decreased (from a relative rate of 1.8 to 1.0).
- From 2000 to 2005, the percentage of AI/AN adult surgery patients who received appropriate timing of antibiotics improved (from 52.0% to 80.8%; in 2005, this rate was not significantly different from Whites). The gap between AI/ANs and Whites not receiving appropriate timing of antibiotics decreased (from a relative rate of 1.2 to 1.0).
- From 2000 to 2005, the percentage of Hispanic children ages 3-6 who ever had their vision checked by a health provider improved (from 51.6% to 56.6%, or roughly 2.6 million Hispanic children). The gap between Hispanics and non-Hispanic Whites who did not receive a vision check decreased (from a relative rate of 1.2 to 1.1).
- From 2000 to 2005, the percentage of poor adult smokers who received smoking cessation counseling while hospitalized improved (from 57.9% to 65.5%; in 2005, this rate was not significantly different from high-income patients). The gap between poor individuals and high-income individuals who did not receive smoking cessation counseling decreased (from a relative rate of 1.3 to 1.0).

In addition to highlighting important progress, decreases in disparities that have been observed identify areas from which lessons might be learned. Each racial and ethnic group showed improvements in some areas where quality of care had improved overall. However, not all improvements closed the gap between these groups and reference groups. Innovative approaches that have contributed to reductions in the magnitude of disparities in care suggest promising practices and effective policies that may also improve care in other areas.

Some Disparities Exist Across Multiple Priority Populations

In addition to the variable distribution of disparities evident across priority populations, in some cases several different populations experience the same gaps in care as other populations due to poor quality overall or populations experiencing similar barriers. The following measures included in the NHDR illustrate disparities for two or more 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. For this measure, between 1999 and 2006, the disparity increased in all four groups (Table H.2).
- For Blacks and Hispanics, disparities grew larger in the percentage of adults with a major depressive episode in the last 12 months who received treatment for depression in the last 12 months.

- Blacks and Asians both had worsened disparities in the receipt of pneumococcal vaccination for adults age 65 and over.
- Blacks and Asians both had worsened disparities in a patient-centeredness measure of patient and provider communication.

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 received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test	*	*	*	*
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	*			*
Respiratory diseases	Adults age 65 and over who ever received pneumococcal vaccination	*	*		
Patient centeredness	Adults with poor provider-patient communication	*	*		

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

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

Overall, minorities may be less likely to access and use mental health services due to cultural beliefs related to mental health and the stigma of getting care for mental illnesses, language barriers, and poor access to mental health services. In addition, data for mental health care are limited. This lack of data is a challenge in measuring quality of mental health care and disparities among these populations, especially for small populations.

Patient experience of health care is another important indicator of health care quality. Minorities are more likely to experience poor provider-patient communication. Minority patients are more likely to receive care in clinics where providers face workplace challenges and have a more complex patient mix. Patient and provider interactions encompass various aspects of care, including whether patients can get appointments in a timely manner, whether they feel respected and listened to, and whether they understand their care. Poor provider-patient communication can result from a number of complex factors, including a provider's lack of familiarity with cultural norms, language barriers, a patient's low health literacy, a chaotic work environment, and a lack of time during a visit. Poor provider-patient communication can lead to inefficient care and medical errors. Addressing these health care disparities will require special attention to cultural attitudes and perceptions that affect health behaviors and patterns of health care access and utilization.

Measures that are improving for more than one population group may also provide additional insight toward understanding disparities. Areas of care where public policy has identified key practices that have broad and direct impact on populations have shown improvement in reducing the gap between populations. These include increasing the number of people with health insurance and improving provider awareness of recommended care and preventive care for specific conditions. Measures that showed reductions in disparities across more than one select group over time included the following:

- Among Asians and Hispanics, children who received recommended vaccines.
- Among Blacks, AI/ANs, and Hispanics, new AIDS cases.
- Among Hispanics and poor populations, smokers with heart attack who received smoking cessation counseling while hospitalized.
- Among Blacks, AI/ANs, Hispanics, and poor populations, people under age 65 with health insurance.

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 2008 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 sixth NHDR, AHRQ stands ready to contribute to efforts such as those above to encourage and support the development of national, State, Tribal, and community 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.

---

1. Swift EK, Corrigan JM, Hare HR, et al., eds. Committee on Guidance for Designing a National Healthcare Disparities Report, Board on Health Care Services. Institute of Medicine. Guidance for the National Healthcare Disparities Report. Washington, DC: National Academy Press; 2001.

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 status (SES), this directive includes a charge to examine disparities in "priority populations"—groups with unique health care needs or issues that require special focus. The National Healthcare Disparities Report (NHDR) was designed and produced by AHRQ, with support from the Department of Health and Human Services (HHS) and private-sector partners, to respond to this legislative mandate.

The first NHDR, released in 2003, 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 2008 NHDR represents the sixth 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 and reports on 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 the methodological approaches taken by AHRQ in producing the 2008 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:

- Additional data for breast cancer and colorectal cancer treatment.
- A new measure on mental health treatment for depression.
- A new measure on daily preventive asthma medication use.
- Additional discussion of patient safety measures, including:
  - Surgical discharges with catheter-associated urinary tract infection (UTI).
  - Accidental puncture or laceration.
  - Postoperative wound separation.

---

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

- Iatrogenic pneumothorax.
- Deaths in low-mortality diagnosis-related groups (DRGs).
    - A new measure on hospice care for referral to hospice at the right time.
    - Additional data on diversity of Licensed Practical Nurses and Licensed Vocational Nurses (LPNs/LVNs).
    - Additional data on Native Hawaiians and Other Pacific Islanders,[ii] including:
    - People without health insurance.
    - Influenza vaccination for older adults.
    - Pneumococcal vaccination for older adults.
- Continued expanded focus on individuals with disabilities.

As in previous years, the 2008 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.

How This Report Is Organized

The basic structure of the 2008 NHDR includes the following chapters:

- **Highlights** summarizes key themes and highlights from the 2008 report.
- **Chapter 1: Introduction and Methods** documents the organization, data sources, and methods used in the 2008 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.
    - Patient safety.
    - Timeliness.
    - Patient centeredness.

[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.

◆ **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 or special health care needs.

Appendixes are available online (www.ahrq.gov) and include:

◆ **Appendix A: Data Sources** provides information about each database analyzed for the NHDR, including data type, sample design, and primary content.

◆ **Appendix B: Detailed Methods** provides detailed methods for selected databases analyzed for the NHDR.

◆ **Appendix C: 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.

◆ **Appendix D: 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, residence location, and one or more socioeconomic variables (i.e., household income, education, insurance, and/or area income).
- Socioeconomic tables are stratified by age, gender, residence location, race, and ethnicity.

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

Presentation of the Measure Set

Core Measures

For the 2005 NHDR and NHQR, the Interagency Work Group was convened to select a group of measures from the full measure sets on which the reports would present findings each year. In 2006, the work group made additional changes to the core measure set. For some topics, the group favored 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 2007 NHDR and NHQR*	Reported in 2008 NHDR and NHQR
Breast cancer screening (mammography)	Colorectal cancer screening
Late-stage breast cancers	Advanced stage colorectal cancers
Breast cancer mortality	Colorectal cancer mortality
Children who received advice about healthy eating	Children who received advice about exercise
Children who had dental care	Children who had a vision check

*The measures listed in this column will be reported again in the 2009 reports.

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 (see 2005 NHDR Chapter 1 for core report measure selection criteria).

Table 1.2. 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*	• *Colorectal cancer diagnosed at advanced stage* • *Colorectal cancer deaths per 100,000 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 lower extremity amputations per 1,000 population age 18 and over with diabetes
Effectiveness—End Stage Renal Disease	• *Dialysis patients registered on a waiting list for transplantation*	• *Adult hemodialysis patients with adequate dialysis*
Effectiveness—Heart Disease	• Adults with obesity who ever received advice from a health provider to exercise more • *Composite: Hospital patients with heart failure who received recommended hospital care* • *Composite: Hospital patients with heart attacck who received recommended hospital care* • Adult current smokers with a checkup in the last 12 months who received advice to quit smoking	• Deaths per 1,000 adult hospital admissions with acute myocardial infarction (AMI)
Effectiveness—HIV and AIDS		• *New AIDS cases per 100,000 population age 13 and over*
Effectiveness—Maternal and Child Health	• Pregnant women who received prenatal care in the first trimester • *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	• Infant deaths per 1,000 live births, birth weight <1,500 g (no new data this year)

Table 1.2. 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
	• Children ages 3-6 who ever had their vision checked by a health provider	
Effectiveness—Mental Health and Substance Abuse	• People age 12 and over who needed treatment for illicit drug use and who received such treatment at a specialty facility in the last 12 months • Adults with a major depressive episode in the last 12 months who received treatment for depression in the last 12 months • People treated for substance abuse who completed treatment course	• Suicide deaths per 100,000 population
Effectiveness—Respiratory Diseases	• Adults age 65 and over who ever received pneumococcal vaccination • Composite: Hospital patients with pneumonia who received recommended hospital care • Visits with antibiotics prescribed for a diagnosis of common cold	• *Patients with tuberculosis who completed a curative course of treatment within 1 year of initiation of treatment*
Effectiveness—Nursing Home, Home Health, and Hospice Care	• *Long-stay nursing home residents with physical restraints*	• *High-risk, long-stay nursing home residents with pressure sores* • *Short-stay nursing home residents with pressure sores* • *Adult home health care patients whose ability to walk or move around improved* • *Adult home health care patients who were admitted to the hospital*

Table 1.2. 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
Patient Safety	• *Composite: Adult surgery patients who received appropriate timing of antibiotics* • Adults age 65 and over who received potentially inappropriate prescription medicines in the calendar year	• Composite: Adult surgery patients with postoperative complications • Composite: Bloodstream infections or mechanical adverse events per 1,000 central venous catheter placements • Deaths per 1,000 discharges with complications potentially resulting from care (failure to rescue), adults ages 18-74
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
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 with a specific source of ongoing care* • *People with a usual primary care provider* • *People without a usual source of care who indicated a financial or insurance reason for not having a source of care* • *People who were unable or delayed in receiving needed medical care, dental care, or prescription medications due to financial or insurance reasons*	

Composite Measures

Policymakers and others have voiced their support for composite measures because they can be used to facilitate understanding of information from many different measures. The effort to develop new composites is ongoing and, 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 1.3.

Composite measures in the NHDR and NHQR are created based on two different models—appropriateness model or opportunities model. 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. 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.

[iv] Go 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 used in the reports.

Table 1.3. Composite measures in the 2008 NHQR and NHDR

Composite measure	Individual measures forming composite
Receipt of three recommended diabetes services	• Adults age 40 and over with diabetes who received a hemoglobin A1c measurement in the calendar year • Adults age 40 and over with diabetes who received a dilated eye examination in the calendar year • Adults age 40 and over with diabetes who had feet checked for sores or irritation in the calendar year
Childhood immunization	• Children ages 19-35 months who received 4 doses of diphtheria-tetanus-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
Recommended hospital care for heart attack	• Hospital patients with heart attack who received aspirin within 24 hours of admission • Hospital patients with heart attack who were prescribed aspirin at discharge • Hospital patients with heart attack who received beta blocker within 24 hours of admission • Hospital patients with heart attack who were prescribed beta blocker at discharge • Hospital patients with heart attack and left ventricular systolic dysfunction who were prescribed ACE inhibitor or ARB at discharge • Smokers with heart attack who received smoking cessation counseling while hospitalized
Recommended hospital care for heart failure[a]	• 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
Recommended hospital care for pneumonia[b]	• Hospital patients with pneumonia who received the initial antibiotic dose within 4 hours of hospital arrival • Hospital patients with pneumonia who received the initial antibiotic consistent with current recommendations • Hospital patients with pneumonia who had blood cultures collected before antibiotics were administered

Table 1.3. Composite measures in the 2008 NHQR and NHDR

Composite measure	Individual measures forming composite
	• Hospital patients with pneumonia who received influenza screening or vaccination • Hospital patients with pneumonia who received pneumococcal screening or vaccination
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
Postoperative complications[c]	• Adult surgery patients with postoperative pneumonia events • Adult surgery patients with postoperaive catheter-associated urinary tract infection • Adult surgery patients with postoperative venous thromboembolic events
Complications of central venous catheters	• Bloodstream infections per 1,000 central venous catheter placements • Mechanical adverse events per 1,000 central venous catheter placements
Patients' experience of care	• Adults who had a doctor's office or clinic visit in the last 12 months whose providers sometimes or never listened carefully to them • Adults who had a doctor's office or clinic visit in the last 12 months whose providers sometimes or never explained things in a way they could understand • Adults who had a doctor's office or clinic visit in the last 12 months whose providers sometimes or never showed respect for what they had to say • Adults who had a doctor's office or clinic visit in the last 12 months whose providers sometimes or never spent enough time with them • Children who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never listened carefully • Children who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never explained things clearly • Children who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never showed respect for what they or their parents had to say • Children who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never spent enough time with them

[a] 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.

[b] Appropriate antibiotic selection was changed to exclude patients with health care-associated pneumonia from the denominator used in the calculation. 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.

[c] The individual measure for postoperative urinary tract infection was refined to include only patients with catheter-associated urinary tract infections.

Presentation of Disparities

The 2008 NHDR and its companion NHQR continue to be formatted as chartbooks. The 2008 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 2008 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] Native Hawaiians and Other Pacific Islanders (NHOPIs), American Indians and Alaska Natives (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.

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 SES 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 "Bivariate and Multivariate Analyses" below.)[viii]

Decades of Work To Reduce Disparities in Health Care Produce Limited Success—JAMA

---

[v] "Asian" includes "Asian or Pacific Islander" 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). When this is the case, 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 done as 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 area 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 2008 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 2008 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% when the measures are framed as a favorable outcome or as an adverse outcome.

Only changes over time that meet these two criteria are discussed in the 2008 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.

[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. See 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).

- Core measures for which the relative differences are becoming smaller at a rate of more than 1% per year are identified as improving.
- Core 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.

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 "Native Hawaiian or Other Pacific Islander." In addition, individuals could report more than one race. This change results in underestimates for the "American Indian and Alaska Native" category, since a large proportion of this group identifies as mixed race. In contrast, effects on estimates for Whites, Blacks, and Hispanics were proportionately much smaller. Therefore, the 2008 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 SES. These analyses appear in Chapter 3, Access to Health Care, and in the section on low-income groups in Chapter 4, Priority Populations. This year, the NHDR also examines the interrelationship between insurance status and income for quality of care in more depth for some selected measures through the use of bivariate analyses in Chapter 4, Priority Populations.

In multivariate models, estimates for a measure are controlled for multiple factors, including race, ethnicity, income, education, insurance, age, gender, and residence location, to show the extent to which these factors affect an outcome. To account for Medicare, the analyses were done separately for people under age 65 and age 65 years and over. 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 odds ratios are shown to quantify the relative magnitude of disparities after controlling for a number of confounding factors. Two selected measures—one quality measure (obese adults given advice about exercise) and one access measure (persons who have a usual primary care provider)—were selected to conduct multivariate analyses.

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.[xi] 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. As noted above, 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 faced by specific groups. 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. 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 2008.

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.

[xi] 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.

- 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

Non-core measures are measures identified by the Interagency Work Group to provide additional information in the NHDR to fill a specific data gap in a particular topic area. Each year, the NHDR features non-core measures in special focus sections of the report. The following new non-core measures have been included in the 2008 NHDR to fill identified gaps:

- One measure of workforce diversity from the American Community Survey (ACS):
  - U.S. LPNs/LVNs by race and ethnicity.
- A refined measure of mental health treatment for depression from the Collaborative Psychiatric Epidemiology Surveys:
  - Receipt of minimally adequate treatment by adults with mental disorders.
- One measure of hospice care quality from the National Hospice and Palliative Care Organization Family Evaluation of Hospice Care:
  - Referral to hospice at the right time.
- Five additional measures of patient safety highlighted from the NHDR noncore measure set:
  - Postoperative wound separation.
  - Reclosure of postoperative abdominal incisional separation.
  - Accidental puncture or laceration during procedures.
  - Iatrogenic pneumothorax.
  - Deaths per 1,000 admissions in low-mortality DRGs.

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 2008 Reports

Table 1.4 lists the databases used in the 2008 reports. This year the Collaborative Psychiatric Epidemiology Surveys (CPES) is added to the set of databases that were used in the 2007 reports.

Table 1.4. Databases used in the 2008 reports (new databases in italics)

Survey data collected from populations

- AHRQ, Medical Expenditure Panel Survey (MEPS), 2002-2005
- CAHPS® (Consumer Assessment of Healthcare Providers and Systems) Hospital Survey, 2008
- Centers for Disease Control and Prevention (CDC), Behavioral Risk Factor Surveillance System (BRFSS), 2001-2006
- CDC-National Center for Health Statistics (NCHS), National Health and Nutrition Examination Survey (NHANES), 1999-2006
- CDC-NCHS, National Health Interview Survey (NHIS), 1998-2006
- CDC-NCHS/National Immunization Program, National Immunization Survey (NIS), 1998-2006
- Centers for Medicare & Medicaid Services (CMS), Medicare Current Beneficiary Survey (MCBS), 1998-2004
- National Center for Education Statistics, National Assessment of Adult Literacy (NAAL), Health Literacy Component, 2003
- National Hospice and Palliative Care Organization, Family Evaluation of Hospice Care (FEHC), 2005-2007
- *National Institutes of Health (NIH), National Institute of Mental Health (NIMH), Collaborative Psychiatric Epidemiology Surveys (CPES), 2001-2003*
- Substance Abuse and Mental Health Services Administration (SAMHSA), National Survey on Drug Use and Health (NSDUH), 2002-2006
- U.S. Census Bureau, American Community Survey (ACS), 2006

Data collected from samples of health care facilities and providers

- American Cancer Society and American College of Surgeons, National Cancer Data Base (NCDB), 1999-2005
- CDC-NCHS, National Ambulatory Medical Care Survey (NAMCS), 1997-2006
- CDC-NCHS, National Hospital Ambulatory Medical Care Survey-Emergency Department (NHAMCS-ED), 1997-2006

- CDC-NCHS, National Hospital Ambulatory Medical Care Survey-Outpatient Department (NHAMCS-OPD), 1997-2006
- CDC-NCHS, National Hospital Discharge Survey (NHDS), 1998-2006
- CMS, End Stage Renal Disease Clinical Performance Measures Project (ESRD CPMP), 2001-2006

Data extracted from data systems of health care organizations

- AHRQ, Healthcare Cost and Utilization Project (HCUP) State Inpatient Databases disparities analysis file,[a] 2001-2005
- CMS, Home Health Outcomes and Assessment Information Set (OASIS), 2002-2006
- CMS, Hospital Compare, 2006
- CMS, Medicare Patient Safety Monitoring System (MPSMS), 2003-2006
- CMS, Nursing Home Minimum Data Set (MDS), 2002-2006
- CMS, Quality Improvement Organization (QIO) program, Hospital Quality Alliance (HQA) measures, 2002-2006
- HIV Research Network (HIVRN) data, 2003-2005
- Indian Health Service, National Patient Information Reporting System (NPIRS), 2002-2005
- National Committee for Quality Assurance, Health Plan Employer Data and Information Set (HEDIS®), 2001-2005
- NIH, United States Renal Data System (USRDS), 1998-2004
- 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, 2000-2004
- CDC-National Center for HIV, STD, and TB Prevention, TB Surveillance System, 1999-2004
- CDC, National Program of Cancer Registries (NPCR), 2000-2005
- CDC-NCHS, National Vital Statistics System (NVSS), 1999-2005
- NIH-National Cancer Institute, Surveillance, Epidemiology, and End Results (SEER) program, 2000-2005

[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 23 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, Vermont, and Wisconsin.

Expanded Analysis of Trends in Disparities

Starting with the 2007 NHDR, an additional dimension of trends is emphasized in the reports. In previous years, the NHDR included discussion of change over time for each population from baseline to most recent data year, where available. The NHDR also reported separately on statistically significant differences between a comparison group and reference group. The 2008 NHDR continues to combine the discussion of change over time and differences between groups by focusing on the change over time in the difference between groups. Thus, the NHDR shows not only where disparities exist in health care quality and access to health care, but also how disparities have changed over time.

The change over time in the disparity between the comparison group and reference group is reported if the following two criteria are met:

- There is a statistically significant difference between the estimate for the baseline year and the most recent data year for at least one group.
- There is a statistically significant difference between a comparison group and reference group at baseline year, at most recent data year, or at both baseline year and most recent data year.

The change is reported as increased if the absolute difference in the gap between the comparison group and reference group in the most recent data year is greater than the gap in the baseline year. The change is reported as decreased if the absolute difference in the gap between the comparison group and reference group in the most recent data year is less than the gap in the baseline year. Change is not reported if there is no change in either the comparison group or the reference group, if both the reference group and the comparison group show significant differences between the baseline year and the most recent data year, or if data are not available for more than one data year.

No statistical test was performed on the change from the baseline year to the most recent data year in the difference between the comparison group and the reference group. Since most differences are relatively small, performing an additional statistical test would eliminate most reports of change in disparities.

The NHDR continues to report statistically significant differences between the comparison group and reference group where data are available for the most recent data year. Since the NHDR now contains estimates for several data years for most of the measures, for simplification in reporting on disparities, only the most recent data year is discussed.[xii]

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

---

[xii] For estimates from prior years, go to Appendix D: Data Tables for previous releases of the NHDR.

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 (ICF) separation of activities and participation domains. These two categories are not mutually exclusive; persons may have both limitations in basic activities and limitations in 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. Available at http://www.cdc.gov/nchs/hus.htm. Accessed November 6, 2008.

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 status (SES). These disparities have been confirmed in previous releases of the National Healthcare Disparities Report.

Components of Health Care Quality

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

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

Effectiveness of care is presented in Chapter 2 in eight clinical condition or care setting areas: cancer; diabetes; end stage renal disease (ESRD); heart disease; HIV and AIDS; mental health and substance abuse; respiratory diseases; and nursing home, home health, and hospice care. Maternal and child health is discussed in Chapter 4, Priority Populations.

As in previous NHDRs, this chapter's discussion of quality of care focuses on disparities in quality related to race, ethnicity, and SES 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 SES, 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 particularly difficult to categorize when prevention, treatment, and management all play important roles. For the purposes of this report, however, measures are placed into categories that best fit the general descriptions below:

- **Prevention**—Caring for healthy people is an important component of health care. Educating people about healthy behaviors can help to postpone and avoid illness and disease. Additionally, detecting health problems at an early stage increases the chances of effectively treating them, often reducing suffering and expenditures.
- **Treatment**—Even when preventive care is ideally implemented, it cannot entirely avert the need for acute care. Delivering optimal treatments for acute illness can help reduce the consequences of illness and promote the best recovery possible.
- **Management**—Some diseases, such as diabetes and 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 normal, healthy living and frequent medical problems.

Note that findings for women and children, which parallel those presented in the NHQR for maternal and child health, are presented in the sections on women and children in Chapter 4. Effectiveness measures presented in this section are organized within the categories of prevention, treatment, and management. For findings related to all core measures of effectiveness, go to Tables 2.1a and 2.1b.

Section	Measure
Prevention	
Cancer	Colorectal cancer screening
Cancer	Advanced stage colorectal cancer patients*
Heart disease	Counseling obese adults about overweight*
Heart disease	Counseling obese adults about exercise
Respiratory diseases	Pneumococcal vaccination
Maternal and child health (women)	Prenatal care/maternal health
Maternal and child health (women)	Obese adults advised about exercise
Maternal and child health (children)	Early childhood vaccinations
Maternal and child health (children)	Counseling about physical activity*
Maternal and child health (children)	Vision screening
Treatment	
Cancer	Recommended care for breast and colorectal cancer*
Heart disease	Receipt of recommended hospital care for heart failure
Mental health and substance abuse	Receipt of needed treatment for illicit drug use
Mental health and substance abuse	Receipt of treatment for depression
Mental health and substance abuse disorders	Receipt of minimally adequate treatment for mental
Respiratory diseases	Receipt of recommended care for pneumonia
Maternal and child health (women)	Mortality rate for acute myocardial infarction
Maternal and child health (women)	Recommended hospital care for heart attack
Management	
Diabetes	Receipt of three recommended diabetes services
Diabetes	Lower extremity amputations
Diabetes	Controlled hemoglobin, cholesterol, and blood pressure
End stage renal disease	Patients with adequate hemodialysis
End stage renal disease	Registration for transplantation
HIV and AIDS	New AIDS cases
HIV and AIDS	PCP and MAC prophylaxis*
Respiratory diseases	Daily asthma medication

Section	Measure
Nursing home, home health, and hospice care	Use of physical restraints on nursing home residents
Nursing home, home health, and hospice care	Presence of pressure sores in nursing home residents
Nursing home, home health, and hospice care	Improvement by home health care patients in walking or moving around
Nursing home, home health, and hospice care	Acute care hospitalization of home health care patients
Nursing home, home health, and hospice care	Hospice care*,[i]
Maternal and child health (women)	New AIDS cases

---

* 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 did not receive the right amount of medicine for pain and hospice patients who did not receive end-of-life care consistent with their stated wishes.

Effectiveness

Cancer

Number of deaths (2008 est.)	565,650[3]
Cause of death rank (2005)	2nd[4]
Number of living Americans who have been diagnosed with cancer (2005 est.)	11,098,450[5]
New cases of cancer (2008 est.)	1,437,180[3]
New cases of colorectal cancer (2008 est.)	148,810[3]
Total cost[ii] (2007)	$219.2 billion[6]
Direct costs[iii] (2007)	$89.0 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]

Note: Statistics may vary from previous years due to revised and updated source statistics or addition of data sources.

Prevention: Colorectal 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 colorectal cancer; findings for breast cancer are found in the 2007 NHDR. Screening for colorectal cancer—including fecal occult blood test (FOBT), sigmoidoscopy, colonoscopy, and proctoscopy—is an effective way of reducing new cases of late-stage disease and mortality caused by this cancer.

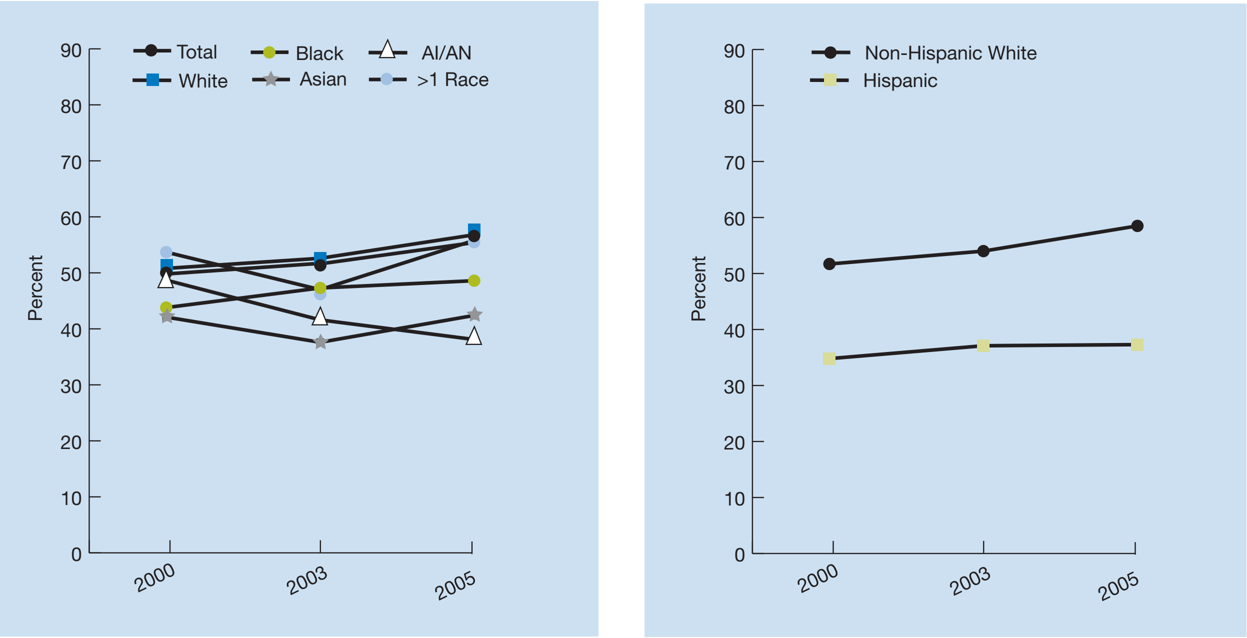
Colorectal cancer is the third most common cancer in adults.

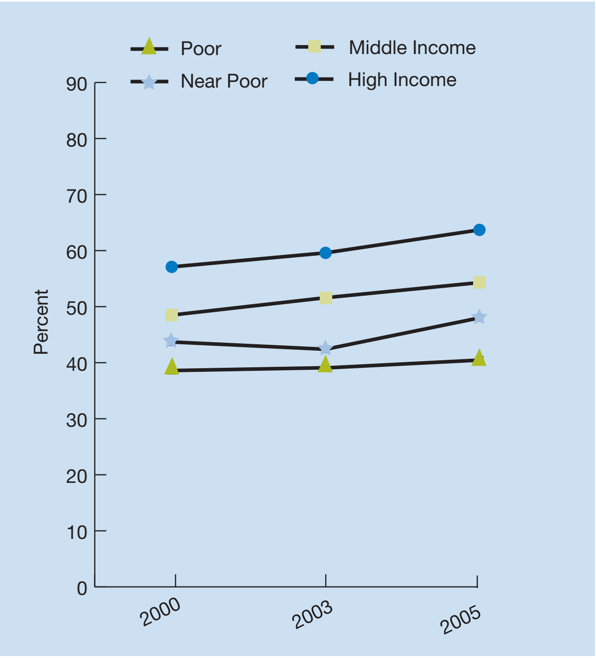
[ii] Total cost is composed of the cost of medical care itself (direct cost) and the economic costs of morbidity and mortality (indirect cost).

[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."[6]

[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. For example, the net cost for colorectal cancer screening ranges from $0 to $14,000 for each QALY saved.

Figure 2.1. Composite measure: Adults age 50 and over who received colorectal cancer screening (colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test [FOBT]), by race (left), ethnicity (top right), and income (bottom left), 2000-2005





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

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2000, 2003, and 2005.

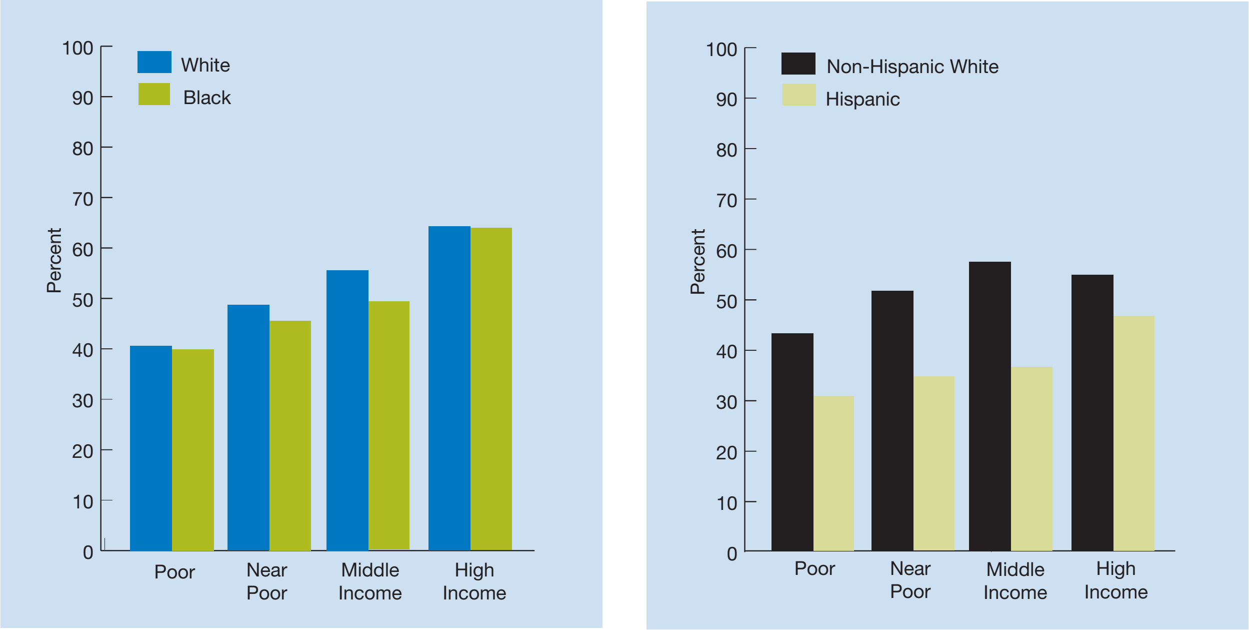
Reference population: Civilian noninstitutionalized population age 50 and over.

Note: Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders.

- Overall, the percentage of adults age 50 and over who received colorectal cancer screening increased from 2000 to 2005 (49.8% to 55.5%; Figure 2.1).
- From 2000 to 2005, the gap between Blacks and Whites in the percentage of adults age 50 and over who received colorectal cancer screening increased. In 2005, Blacks were less likely than Whites to receive a colonoscopy, sigmoidoscopy, or proctoscopy or an FOBT (48.6% compared with 56.8%).
- The gap between Asians and Whites increased. In 2005, Asians were less likely than Whites to receive colorectal cancer screening (42.4% compared with 56.8%).
- The gap between American Indian/Alaska Natives (AI/ANs) and Whites remained the same. In 2005, AI/ANs were less likely than Whites to receive a colorectal cancer screening (38.1% compared with 56.8%).
- The gap between Hispanics and non-Hispanic Whites increased. In 2005, Hispanics were less likely than non-Hispanic Whites to receive colorectal cancer screening (37.3% compared with 58.5%).

Racial and ethnic minorities are disproportionately of lower SES. To distinguish the effects of race, ethnicity, income, and education on cancer screening, this measure is stratified by income (Figure 2.2) and education level (Figure 2.3).

Figure 2.2. Composite measure: Adults age 50 and over who received colorectal cancer screening (colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test [FOBT]), by race (left) and ethnicity (right), stratified by income, 2005

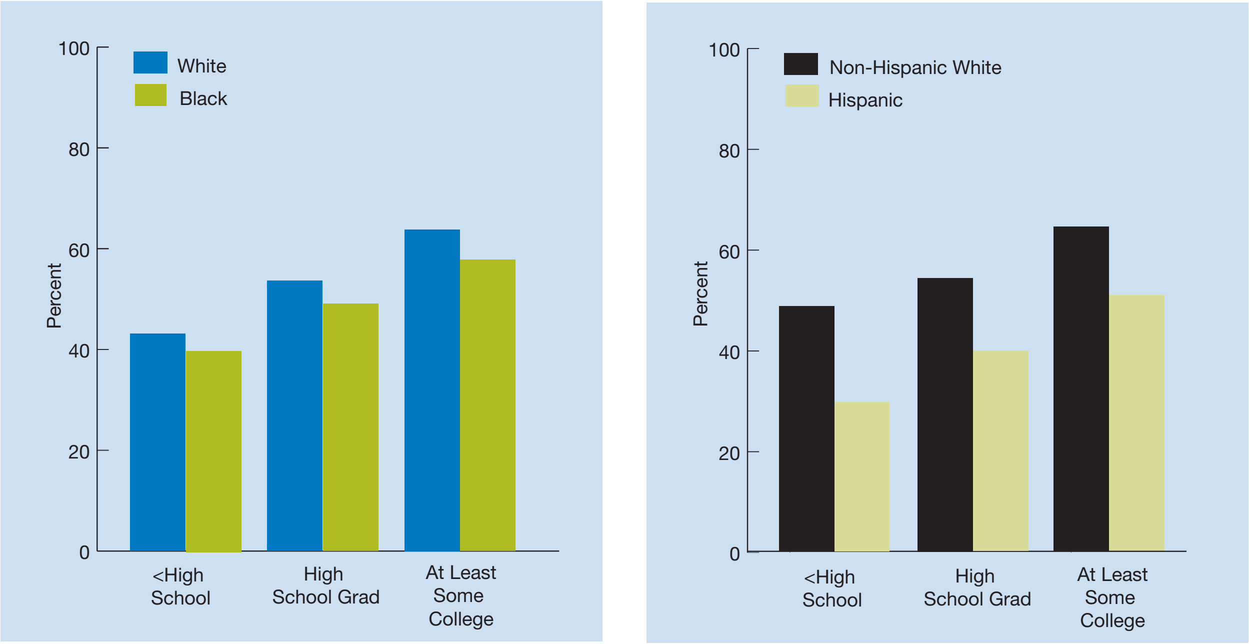


Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2005.

Reference population: Civilian noninstitutionalized population age 50 and over.

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

Figure 2.3. Adults age 50 and over who received a colonoscopy, sigmoidoscopy, or proctoscopy or a fecal occult blood test (FOBT), by race (left) and ethnicity (right), stratified by education, 2005



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2005.

Reference population: Civilian noninstitutionalized population age 50 and over.

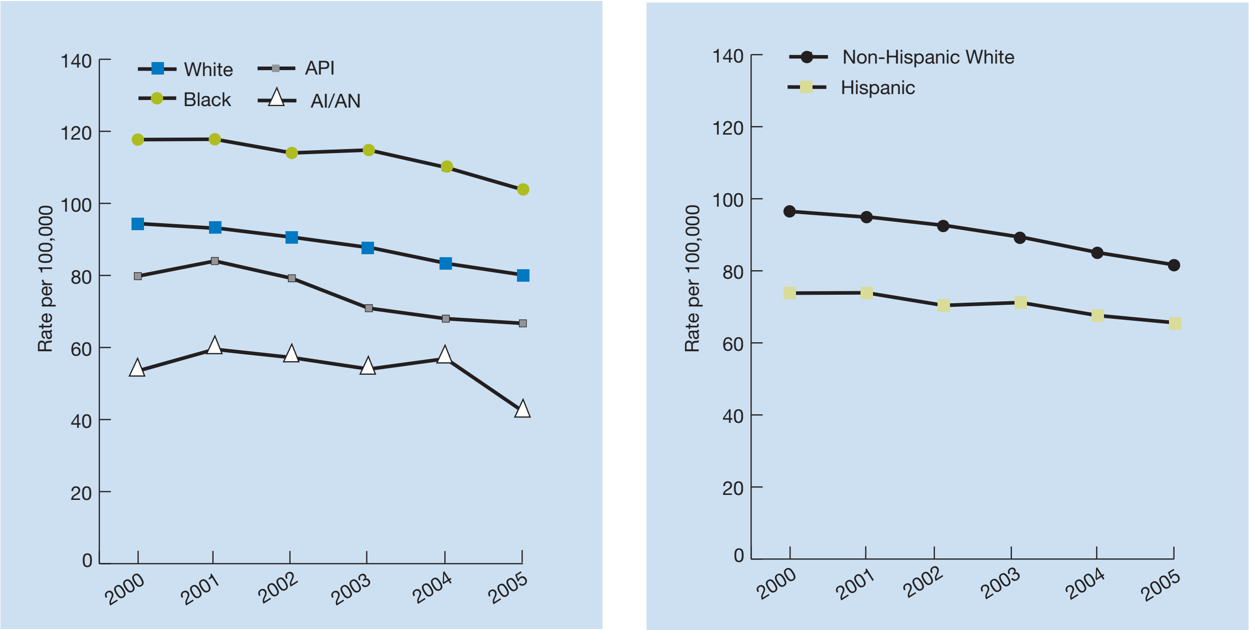
Note: Data were insufficient for this analysis for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

- After controlling for income, there were no statistically significant differences between Blacks and Whites in the percentage of adults age 50 and over who received colorectal cancer screening (Figure 2.2).
- There were no statistically significant differences between Blacks and Whites of the same education level except among college-educated adults. Blacks with at least some college education were less likely than Whites to receive colorectal cancer screening (57.8% compared with 63.8%; Figure 2.3).
- Both before and after controlling for income and education, Hispanics were less likely than non-Hispanic Whites to receive colorectal cancer screening at all income and education levels.

Prevention: Advanced Stage Colorectal 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 prevalence.

Figure 2.4. Colorectal cancer diagnosed at advanced stage (tumors diagnosed at regional or distant stage) per 100,000 population age 50 and over, by race (left) and ethnicity (right), 2000-2005



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

Source: National Cancer Institute, Surveillance, Epidemiology, and End Results program, 2000-2005.

Reference population: Men and women age 50 and over.

Note: Rates are age adjusted.

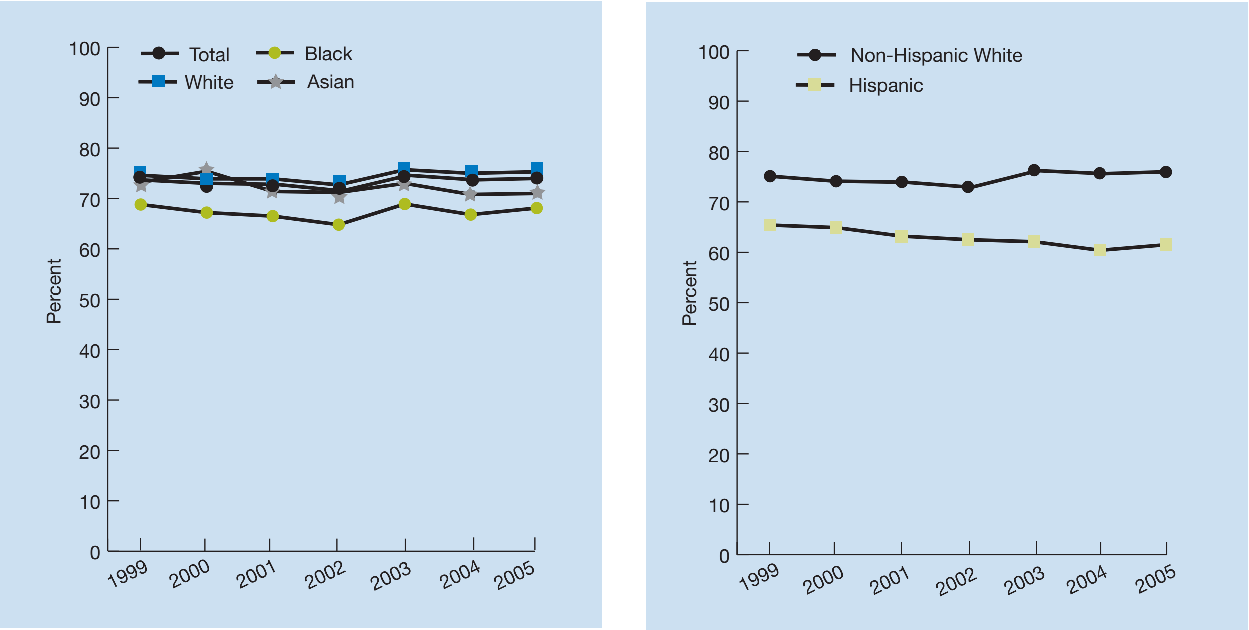
- From 2000 to 2005, the total rate of diagnosis for advanced stage colorectal cancer decreased (from 95.2 per 100,000 to 80.8 per 100,000; data not shown). The rate decreased for all groups except AI/ANs, for whom the change was not statistically significant.
- From 2000 to 2005, the gap between Blacks and Whites remained the same. In 2005, Blacks were more likely to be diagnosed at advanced stage with colorectal cancer than Whites (103.8 per 100,000 compared with 80.0 per 100,000).
- APIs were less likely than Whites to be diagnosed at advanced stage with colorectal cancer (66.7 per 100,000 compared with 80.0 per 100,000).
- From 2000 to 2005, there was no statistically significant change in the rate for AI/ANs, who were less likely than Whites to be diagnosed at advanced stage with colorectal cancer (42.3 per 100,000 compared with 80.0 per 100,000).
- Hispanics were less likely than non-Hispanic Whites to be diagnosed at advanced stage with colorectal cancer (65.6 per 100,000 compared with 81.5 per 100,000).

Treatment: Recommended Care for Breast and Colorectal 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 is performed (e.g., to remove colon cancer).

Among women diagnosed with breast cancer who receive surgical therapy, approximately 63% undergo breast-conserving surgery.[9] Randomized controlled trials have shown that women who undergo breast-conserving surgery and postoperative radiation therapy significantly reduce local recurrence rates.[10,11,12]

Figure 2.5. 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 (left) and ethnicity (right), 1999-2005



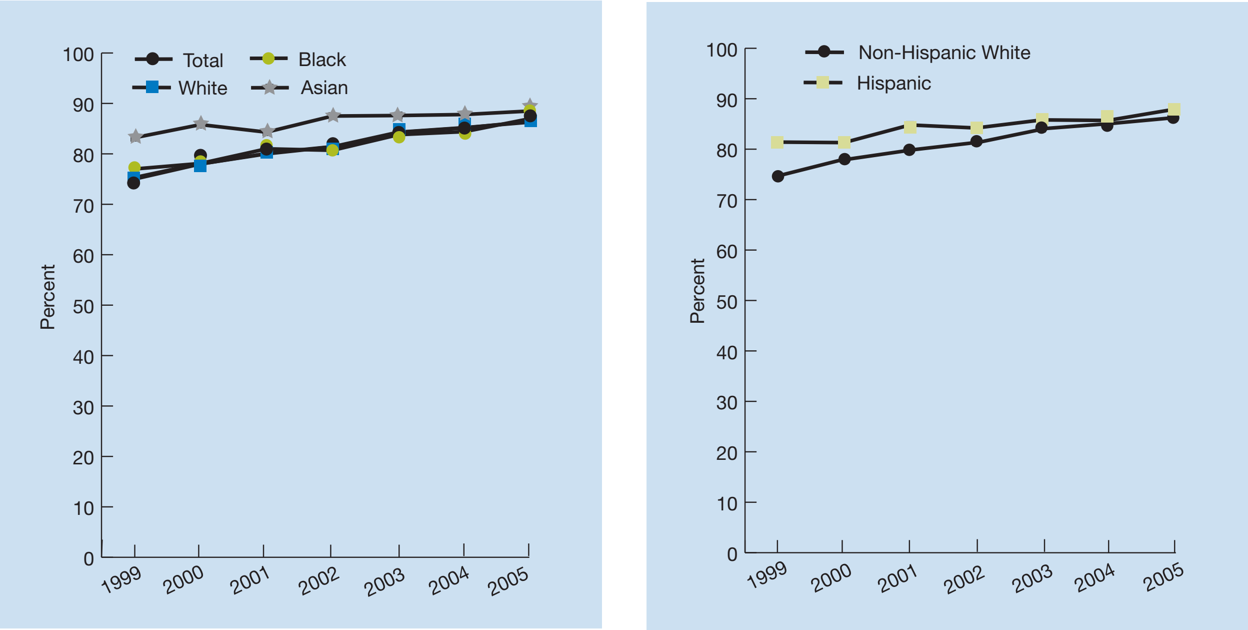
* American Joint Committee on Cancer Stage I, II, or III, primary invasive epithelial breast cancer.

Source: Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base, 1999-2005.

Reference population: U.S. population, women.

- From 1999 to 2005, the gap between Blacks and Whites remained the same. In 2005, Black patients with breast cancer were less likely than Whites to receive radiation therapy to the breast within 1 year of diagnosis (68.1% compared with 75.3%; Figure 2.5).
- From 1999 to 2005, the gap between Hispanics and non-Hispanic Whites increased. In 2005, Hispanic patients with breast cancer were less likely than non-Hispanic Whites to receive radiation therapy to the breast within 1 year of diagnosis (61.5% compared with 76.0%).

Figure 2.6. Women with Stage I-IIb breast cancer who received axillary node dissection or sentinel lymph node biopsy (SLNB) at the time of surgery (lumpectomy or mastectomy), by race (left) and ethnicity (right), 1999-2005



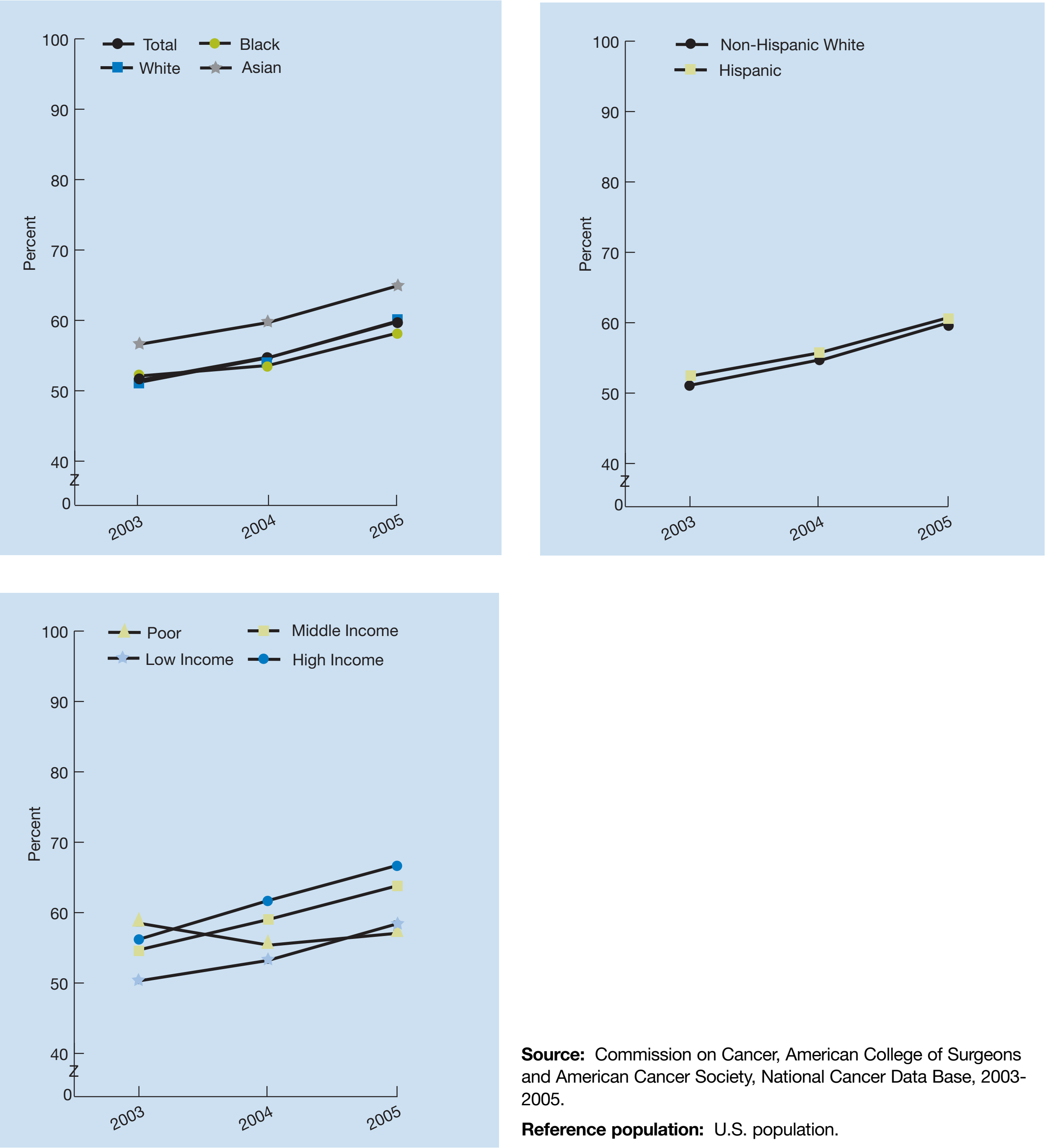
Source: Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base, 1999-2005.

Reference population: U.S. population, women.

- From 1999 to 2005, overall there was improvement in the percentage of women with Stage I-IIb breast cancer who received an axillary node dissection or sentinel lymph node biopsy at the time of surgery (from 75.3% to 86.5%; Figure 2.6).
- There were no statistically significant differences by race or ethnicity (Figure 2.6) or income (data not shown).

Lymph nodes must be examined to accurately stage colon cancers and guide adjuvant therapy treatment decisions.[13,14] The quality measure of the percentage of colon cancer patients who have had at least 12 lymph nodes examined is endorsed by the National Quality Forum and is intended to be a benchmark for hospital quality improvement initiatives.

Figure 2.7. Patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined, by race (top left), ethnicity (top right), and income (bottom left), 2003-2005



Source: Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base, 2003-2005.

Reference population: U.S. population.

- From 2003 to 2005, there was improvement among racial and ethnic groups in the percentage of patients with colon cancer who received recommended care (Figure 2.7).
- During this period, the gap between Asians and Whites remained the same. In 2005, Asians with colon cancer were more likely than Whites to receive recommended care for colon cancer (64.9% compared with 59.9%).
- During this period, the gap between poor people and high-income people increased. In 2005, poor people with colon cancer were much less likely than high-income people to receive recommended care for colon cancer (57.1% compared with 66.7%).

Diabetes

Number of deaths (2005)	75,119[4]
Cause of death rank (2005)	6th[4]
Total number of Americans with diabetes (2007)	23.6 million[15]
Number of people with diagnosed diabetes (2007)	17.9 million[15]
Number of people with undiagnosed diabetes (2007)	5.7 million[15]
New cases (age 20 and over, 2007)	1.6 million[15]
Total cost (2007)	$174 billion[16]
Direct medical costs (2007)	$116 billion[16]

Note: Statistics may vary from previous years due to revised and updated source statistics or addition of data sources.

Management: Receipt of Three Recommended Diabetes Services

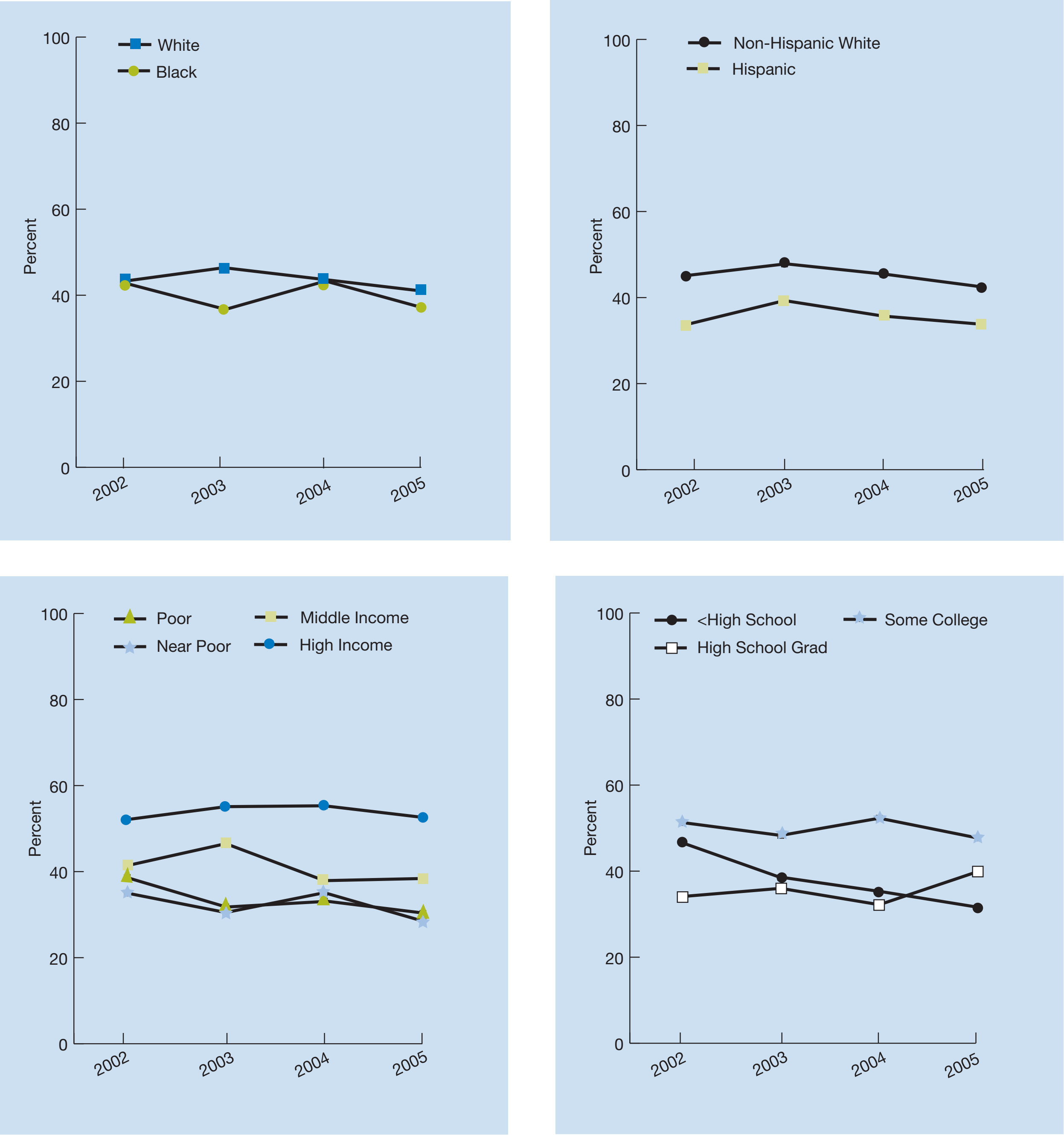
Effective management of diabetes includes hemoglobin A1c (HbA1c)[v] testing, eye examination, and foot examination, as well as appropriate influenza immunization and lipid management.[17,18,19]

> *Rate of Hispanic diabetics' foot amputations soar—DailyGazette.com (Schenectady, NY), March 24, 2008*

---

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

Figure 2.8. Composite measure: Adults age 40 and over with diagnosed diabetes who received all three recommended services for diabetes in the calendar year, by race (top left), ethnicity (top right), family income (bottom left), and education (bottom right), 2002-2005



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2005.

Reference population: Civilian noninstitutionalized population age 40 and over.

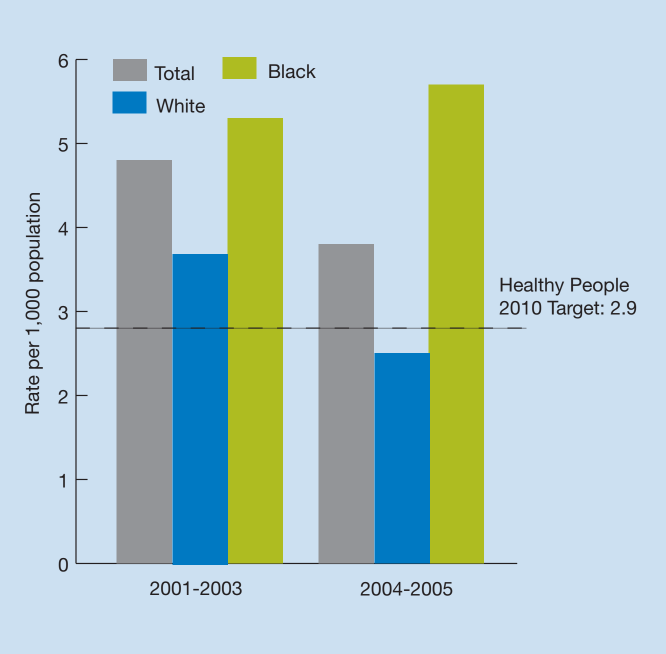
Note: Recommended services for diabetes are: (1) HbA1c testing, (2) retinal eye examination, and (3) foot examination. Data include people with both type 1 and type 2 diabetes. Rate is age adjusted to the 2000 U.S. standard population. Data were insufficient for this analysis for Native Hawaiians and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

- From 2002 to 2005, the gap remained the same between Blacks and Whites in the percentage of adults age 40 and over with diabetes who received three recommended services (Figure 2.8). In 2005, there were no statistically significant differences between Blacks and Whites for this measure (37% compared with 41%).
- The gap increased between Hispanics and non-Hispanic Whites in the percentage of adults age 40 and over with diabetes who received three recommended services. In 2005, this percentage was significantly lower for Hispanics than for non-Hispanic Whites (33.8% compared with 42.4%).
- From 2002 to 2005, the gap between poor people and high-income people remained the same. In 2005, this percentage was significantly lower for poor (30.3%), near-poor (28.5%), and middle-income people (38.4%) than for high-income people (52.6%).
- The gap remained the same between people with less than a high school education and people with at least some college education. In 2005, 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 (31.5%) and high school graduates (39.9%) than for people with at least some college (47.7%).

Management: Lower Extremity Amputations

Although diabetes is the leading cause of lower extremity amputations, amputations can be avoided through proper care on the part of patients and providers. Hospital admissions for lower extremity amputations for patients with diagnosed diabetes reflect poorly controlled diabetes. Better management of diabetes would prevent the need for lower extremity amputations.

Figure 2.9. Hospital admissions for lower extremity amputations per 1,000 population age 18 and over with diabetes, by race, 2001-2003 and 2004-2006



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Discharge Survey and National Health Interview Survey, 2001-2003 and 2004-2006.

Note: Data years were combined to create sufficient sample sizes for this analysis.

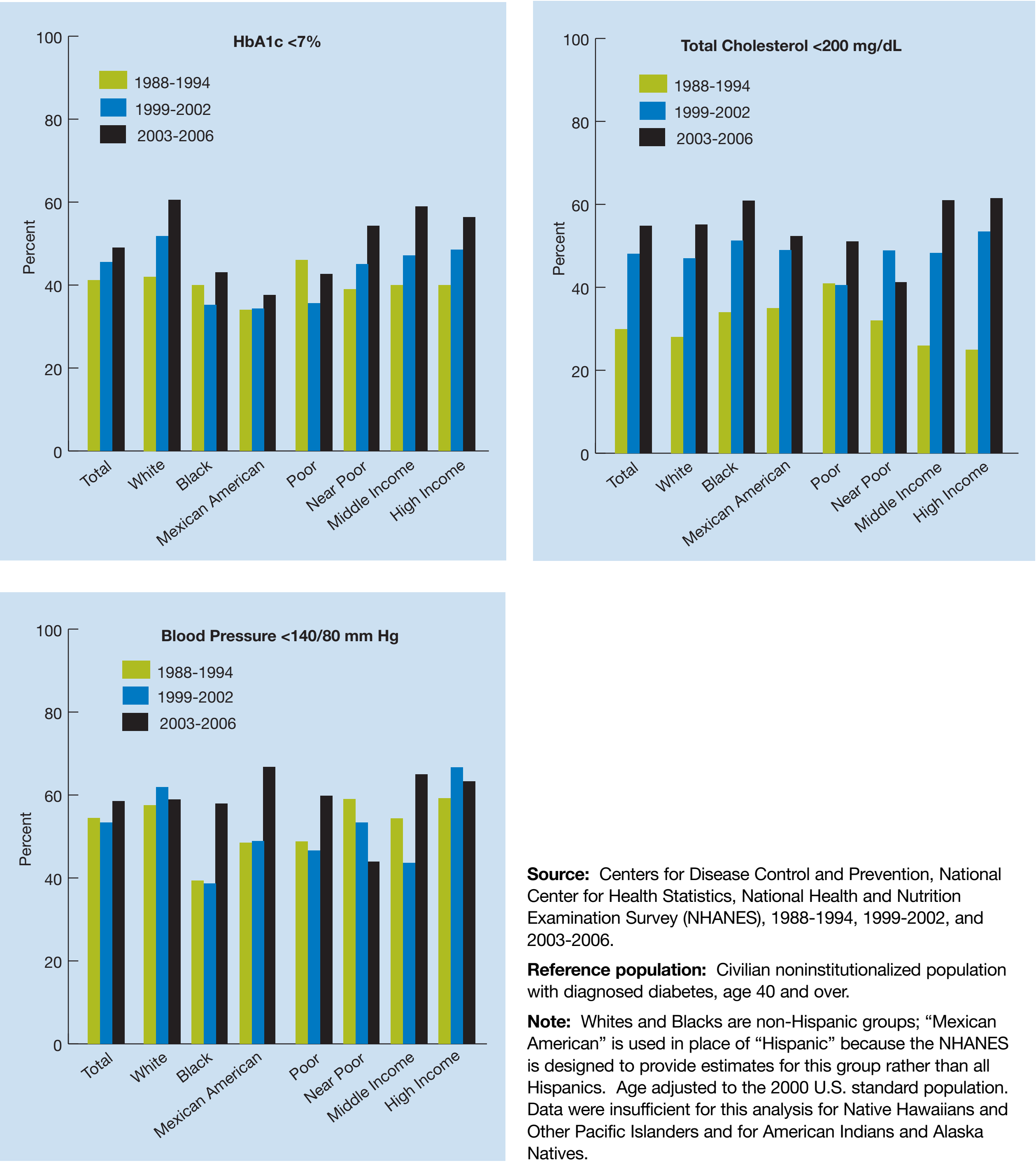
- While the rate of hospitalizations for lower extremity amputations improved overall from 2001-2003 to 2004-2006, the gap between Blacks and Whites increased. The percentage of hospitalizations for lower extremity amputations among diabetes patients remained higher for Blacks than Whites (5.7 admissions per 1,000 population with diagnosed diabetes compared with 2.5 admissions per 1,000 population with diagnosed diabetes; Figure 2.9).
- Women with diabetes were less likely than men with diabetes to be hospitalized for lower extremity amputation (2.3 per 1,000 compared with 5.4 per 1,000; data not shown).
- The Healthy People 2010 target rate of 2.9 lower extremity amputations in adults with diagnosed diabetes per 1,000 population has not been met by any group except Whites.

Management: Controlled Hemoglobin, Cholesterol, and Blood Pressure

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

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

Figure 2.10. Adults age 40 and over with diagnosed diabetes with HbA1c (top left), total cholesterol (top right), and blood pressure (bottom left) under control, by race/ethnicity and income, 1988-1994, 1999-2002, and 2003-2006



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey (NHANES), 1988-1994, 1999-2002, and 2003-2006.

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

Note: Whites and Blacks are non-Hispanic groups; “Mexican American” is used in place of “Hispanic” because the NHANES is designed to provide estimates for this group rather than all Hispanics. Age adjusted to the 2000 U.S. standard population. Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders and for American Indians and Alaska Natives.

HbA1c under control

- From the 1988-1994 to 2003-2006 periods, the percentage of adults with diagnosed diabetes who had their HbA1c under optimal control improved (Figure 2.10). However, in 2003-2006, only 54.6% of adults with diagnosed diabetes had their HbA1c under optimal control.
- The gap between Blacks and Whites increased. In 2003-2006, the rate was significantly lower for Blacks than Whites (43.0% compared with 60.5%).
- The gap between Mexican Americans and Whites increased. In 2003-2006, the rate was significantly lower for Mexican Americans than Whites (37.6% compared with 60.5%).
- In 2003-2006, there were no statistically significant differences among income groups.

Total cholesterol under control

- From the 1988-1994 to 2003-2006 periods, the percentage of adults with diagnosed diabetes who had their total cholesterol under control increased significantly. However, in 2003-2006, only 54.9% of adults with diagnosed diabetes had their total cholesterol under control.
- In 2006, there were no statistically significant differences across racial groups and income groups.

Blood pressure under control

- From the 1988-1994 to 2003-2006 periods, the percentage of adults with diagnosed diabetes who had their blood pressure under control did not change. In 2003-2006, only 58.5% of adults with diagnosed diabetes had their blood pressure under control.
- The gap between Blacks and Whites decreased. In 2003-2006, there was no significant difference between Blacks, Mexican Americans, and Whites for this measure.
- The gap between poor people and high-income people remained the same. In 2003-2006, the rate was significantly lower for poor than for high-income people (59.8% compared with 63.3%).

End Stage Renal Disease (ESRD)

Total ESRD deaths (2005)	85,790[20]
Total cases (2005)	485,012[21]
New cases (2005)	106,912[21]
Total Medicare program expenditure for ESRD (2005)	$19.3 billion[21]

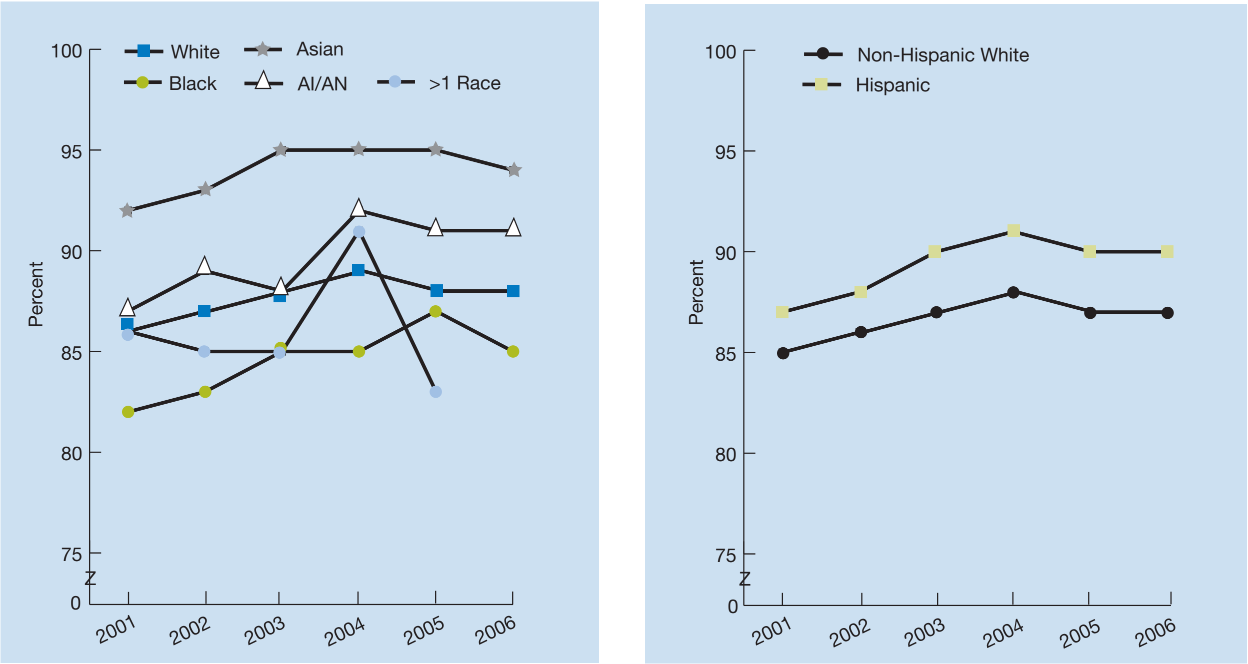
Note: Statistics may vary from previous years due to revised and updated source statistics or addition of data sources.

Management: Patients With 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 2.11. Adult hemodialysis patients with adequate dialysis (urea reduction ratio 65% or greater), by race (left) and ethnicity (right), 2001-2006

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



Source: Centers for Medicare & Medicaid Services, End Stage Renal Disease (ESRD) Clinical Performance Measures Project, 2001-2006.

Reference population: ESRD hemodialysis patients age 18 and over.

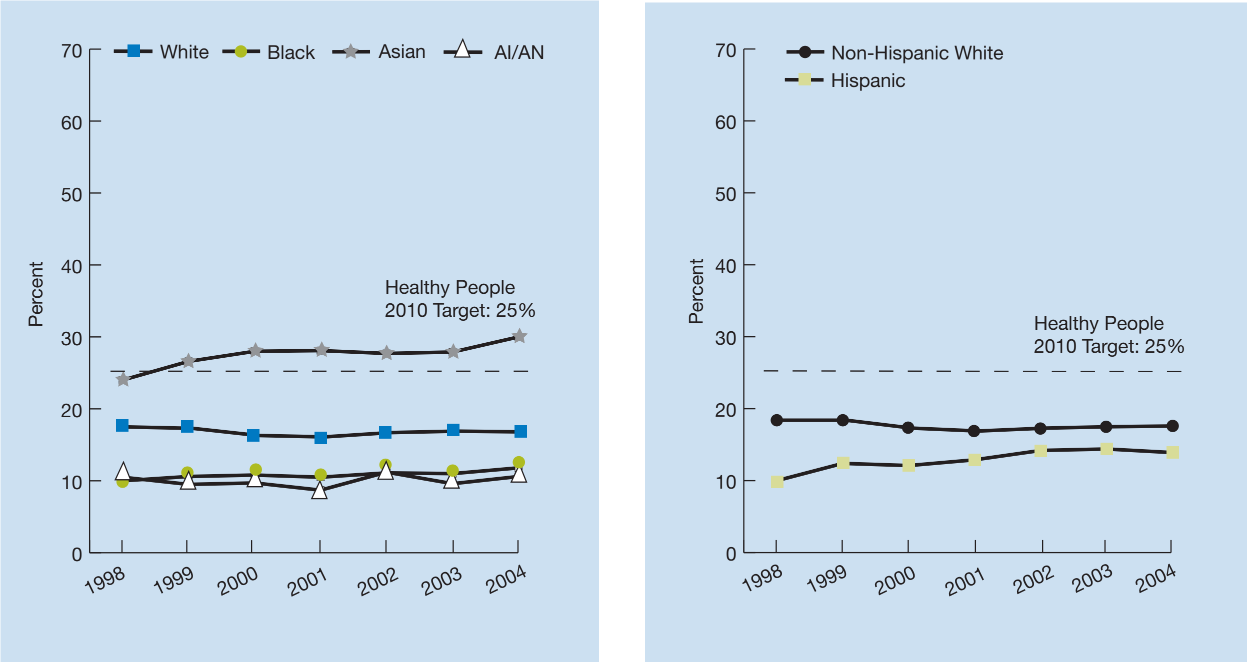
Note: Data were not available for Native Hawaiians and Other Pacific Islanders, and in 2006 for people of multiple race.

- From 2001 to 2006, the gap decreased between Blacks and Whites in hemodialysis patients with adequate dialysis. However, in 2006 Blacks were less likely than Whites to have adequate dialysis (85% compared with 88%; Figure 2.11).
- From 2001 to 2006, the gap between Asians and Whites remained the same. In 2006, the percentage with adequate dialysis continued to be higher for Asians than for Whites (94% compared with 88%).
- The percentage with adequate dialysis improved for Hispanics (from 87% to 90%) and for non-Hispanic Whites (from 85% to 87%).
- In 2006, women were more likely than men to have adequate dialysis (92% compared with 83%; 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.[21] It is important that persons with ESRD 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.[22] 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.[20]

Figure 2.12. Dialysis patients under age 70 who were registered on a waiting list for transplantation, by race (left) and ethnicity (right), 1998-2004



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

Source: U.S. Renal Data System, 1998-2004.

Reference population: End stage renal disease hemodialysis patients and peritoneal dialysis patients under age 70.

Note: Data were not available for Native Hawaiians and Other Pacific Islanders.

- From 1998 to 2004, the gap between Blacks and Whites in the percentage of dialysis patients registered for transplantation remained the same. In 2004, Blacks were still less likely to be registered for transplantation than Whites (11.8% compared with 16.8%; Figure 2.12).
- The gap between AI/ANs and Whites decreased. However, in 2004, AI/ANs were still less likely to be registered for transplantation than Whites (10.6% compared with 16.8%).
- The gap between Asians and Whites registered for transplantation increased. In 2004, this percentage was higher for Asians than for Whites (30.0% compared with 16.8%).
- The gap between Hispanics and non-Hispanic Whites decreased. However, in 2004, this percentage was still lower for Hispanics than for non-Hispanic Whites (13.9% compared with 17.6%).
- From 1998 to 2004, only Asians achieved the Healthy People 2010 target of 30%.

Heart Disease

Number of deaths (2005)	652,091[4]
Cause of death rank (2005)	1st[4]
Number of cases of coronary heart disease (2005)	16.0 million[23]
Number of cases of heart failure (2005)	5.3 million[23]
Number of cases of high blood pressure (2005)	73.0 million[23]
Number of heart attacks (2005)	8.1 million[24]
Number of new cases of congestive heart failure (2005)	366,815[23]
Total cost of cardiovascular disease (2008 est.)	$448.5 billion[6]
Total cost of congestive heart failure (2008 est.)	$34.8 billion[23]
Direct medical costs of cardiovascular disease (2008 est.)	$296.4 billion[6]
Cost-effectiveness of hypertension screening	$14,000-$35,000/QALY[7]
Cost-effectiveness of aspirin chemoprophylaxis	cost savings[7,vii]

Note: Statistics may vary from previous years due to revised and updated source statistics or addition of data sources.

Prevention: Counseling Obese Adults About Overweight

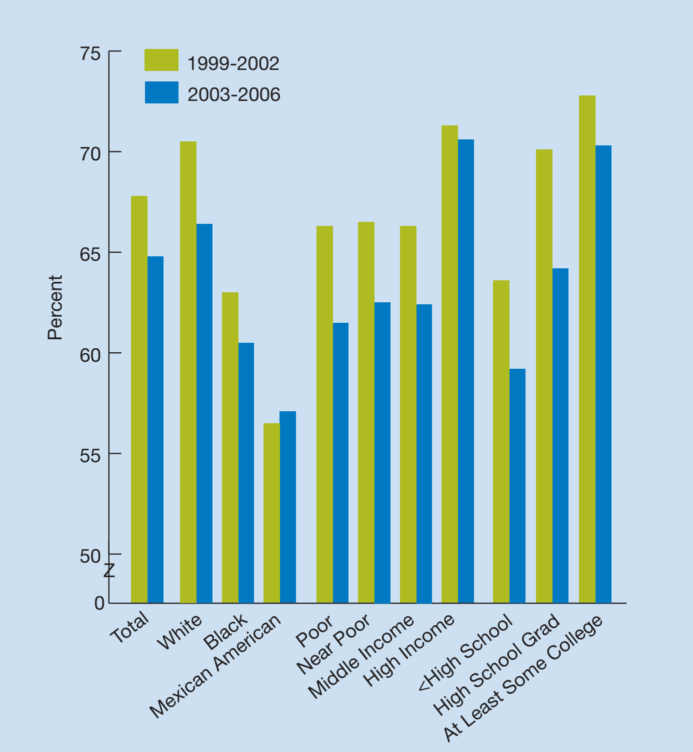
As in the 2005 report, measures related to overweight and obesity are presented in the NHDR. In this section, measures for counseling obese adults about overweight and exercise are presented. In Chapter 4, Priority Populations, a measure for counseling children about overweight is presented in the section on children.

More than 34% of adults age 20 and over in the United States are obese (defined as having a body mass index of 30 or higher),[25,viii] putting them at increased risk for many chronic, often deadly, conditions, such as hypertension, cancer, diabetes, and coronary heart disease.[26] Reducing obesity is a major objective in preventing heart disease and stroke.[27] Although physician guidelines recommend that health care providers screen all adult patients for obesity,[28] obesity remains underdiagnosed in U.S. adults.[29] 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.

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

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

Figure 2.13. Adults with obesity age 20 and over who were told by a doctor they were overweight, by race/ethnicity, income, and education, 1999-2002 and 2003-2006



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey (NHANES), 1999-2002 and 2003-2006.

Reference population: Civilian noninstitutionalized population age 20 and over.

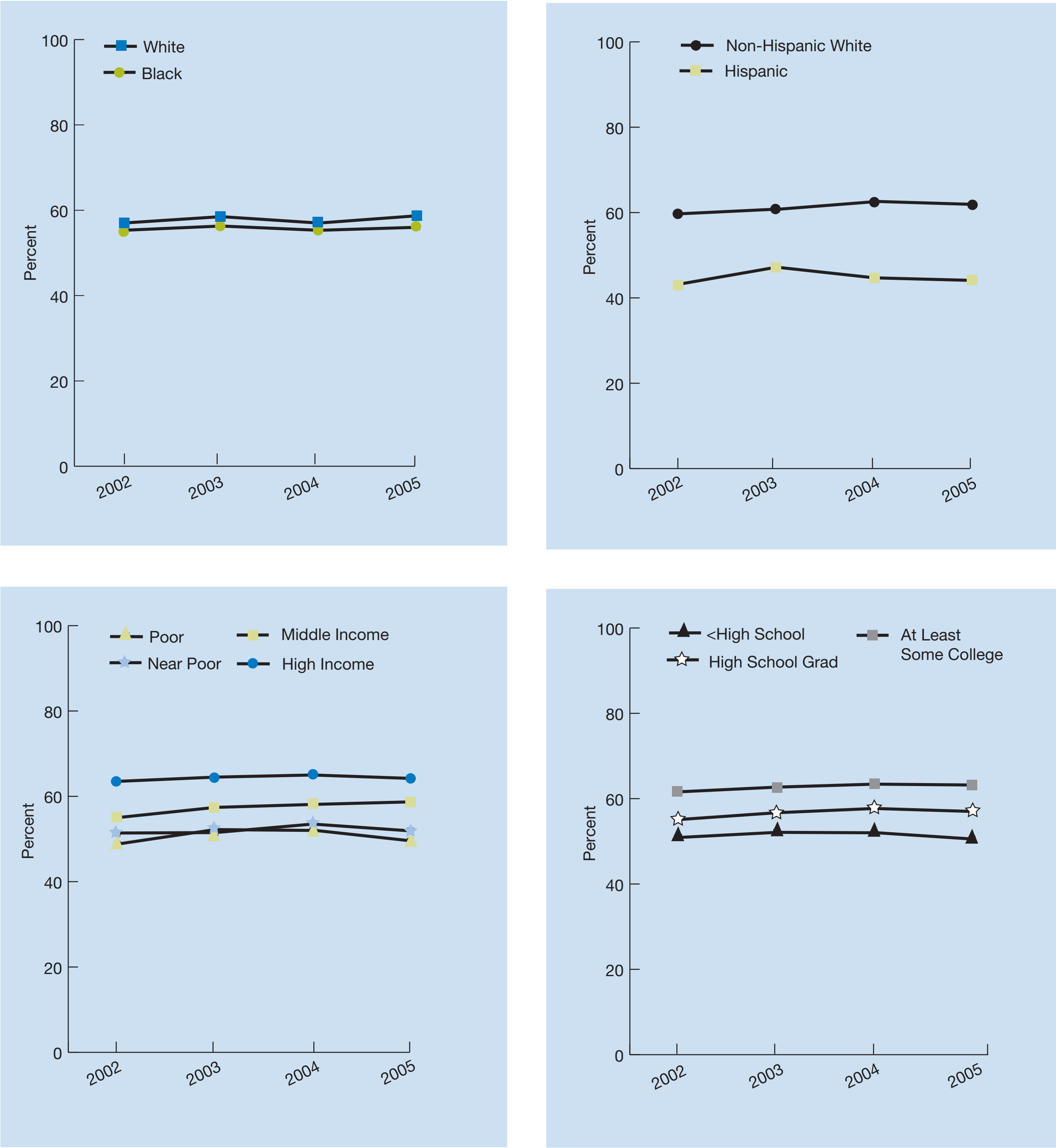
Note: Obesity is defined as a body mass index of 30 or higher. "Mexican American" is used in place of "Hispanic" because the NHANES is designed to provide estimates for this group rather than all Hispanics. Education groups are for adults age 25 and over only. Rates other than the total are age adjusted to the 2000 standard population. Data were not available for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

- There were no statistically significant changes from 1999-2002 to 2003-2006 in the percentage of obese adults told that they were overweight.
- During this period, trends were different for men and women. The percentage of obese women who were told they were overweight increased (from 63.1% to 69.8%; data not shown), while the percentage decreased for men (from 71.9% to 59.6%; data not shown).
- The percentage of obese adults told that they were overweight was significantly lower for Blacks (60.5%) and Mexican Americans (57.1%) compared with Whites (66.4%); for poor (61.5%), near-poor (62.5%), and middle-income (62.4%) people compared with high-income people (70.6%); and for adults with less than a high school education (59.2%) and high school graduates (64.2%) compared with adults with any college education (70.3%) (Figure 2.13).

Prevention: Counseling Obese Adults About Exercise

Exercise counseling within the clinical setting is an important component of effective weight loss interventions.[28] Regular exercise aids in weight loss and blood pressure control efforts, reducing the risk of heart disease, stroke, diabetes, and other diseases.

Figure 2.14. Adults with obesity who ever received advice from a health provider to exercise more, by race (top left), ethnicity (top right), income (bottom left), and education (bottom right), 2002-2005



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2005.

Reference population: 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.

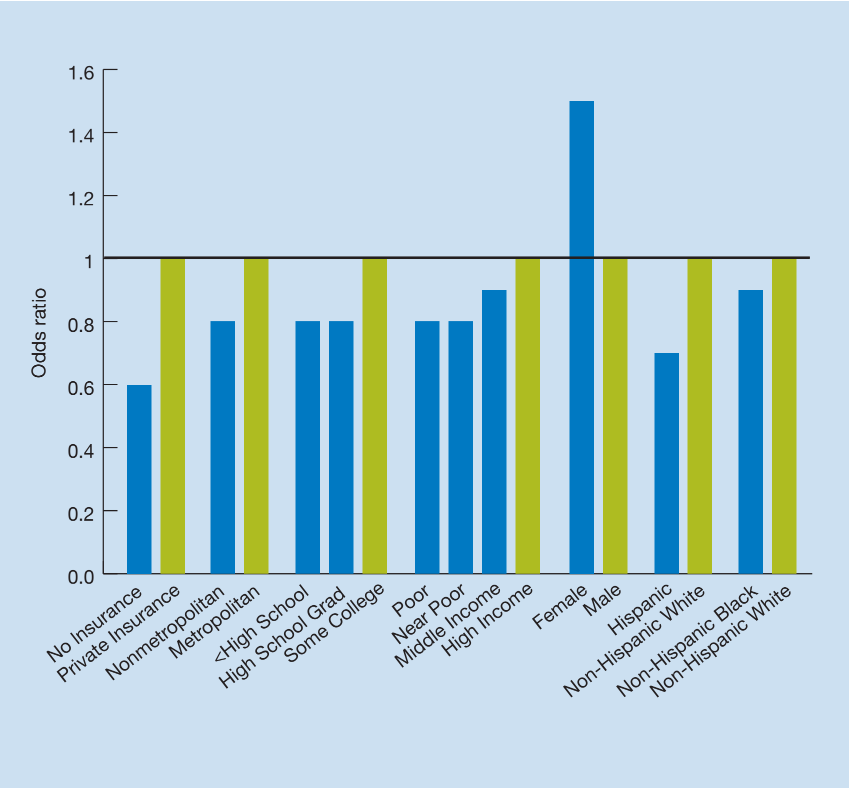
- From 2002 to 2005, there were no statistically significant changes in the percentage of obese adults who were given advice about exercise (Figure 2.14).
- During the same period, there was no statistically significant gap between Blacks and Whites on this measure.
- From 2002 to 2005, the gap between Hispanics and non-Hispanic Whites increased. In 2005, this percentage was significantly lower for Hispanics than for non-Hispanic Whites (44.1% compared with 61.9%).
- The gap between poor people and high-income people remained the same. In 2005, this percentage was significantly lower for poor people compared with high-income people (49.5% compared with 64.2%).
- The gap between people with less than a high school education and people with at least some college education remained the same. In 2005, the percentage of obese adults who were given advice about exercise was significantly lower for people with less than a high school education than for people with at least some college education (50.5% compared with 63.2%).

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

To identify the independent effects of socioeconomic factors on obese (BMI of 30 or higher) adults ages 18-64 given advice by a doctor or health professional about exercise, logistic regressions were run using pooled 2002-2005 MEPS data. The predictive variables included race, ethnicity, income, education, age, gender, insurance, and residence location. White, non-Hispanic White, high income, some college, private insurance, ages 45-64, male, and metropolitan were used as reference groups (odds ratio = 1). The odds ratios estimate the ratios of probability of received advice by each covariate group over the reference group and are reported in Figure 2.15. A lower odds ratio indicates that the group is less likely to receive advice.

Heart disease is the leading cause of death in the United States for both men and women.

Figure 2.15. Adults with obesity who ever received advice from a health provider to exercise more: Adjusted odds ratios, 2002-2005



Key: 🟩 = reference group.

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2005.

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

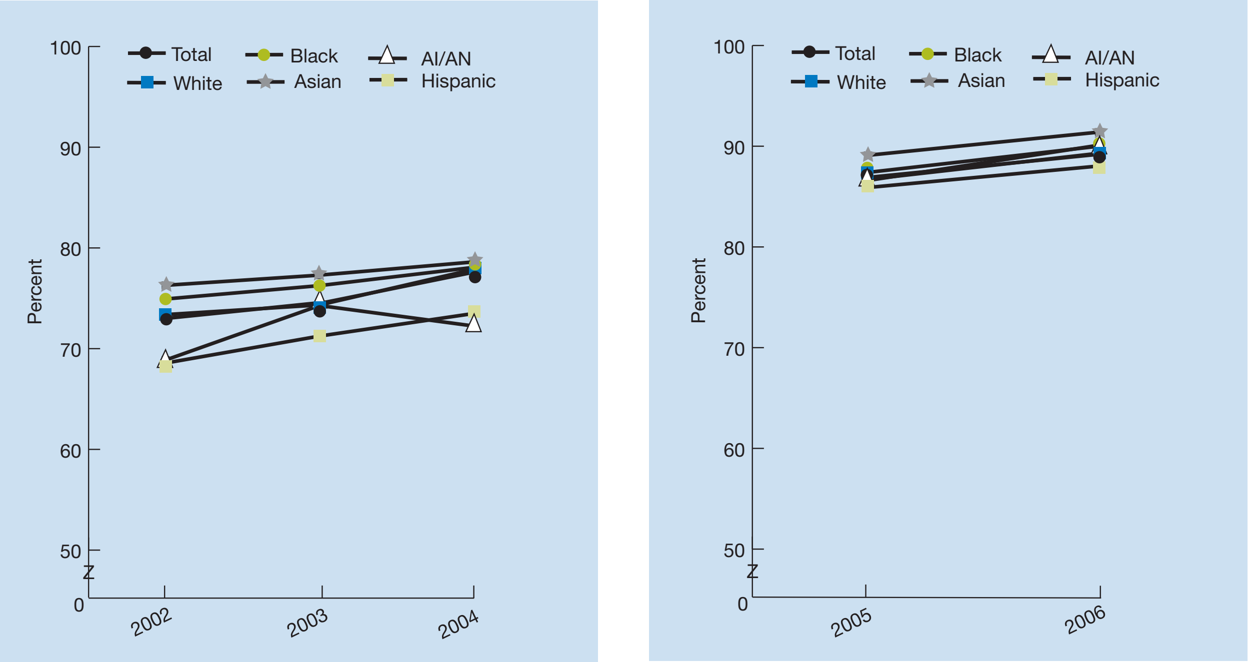
Note: Obesity is defined as a body mass index of 30 or higher. Adjusted odds ratios are calculated from logistic regression models controlling for race, ethnicity, income, education, age, gender, insurance, and residence location. White, non-Hispanic White, male, high income, some college, metropolitan, and private insurance are reference groups with odds ratio = 1; odds ratios <1 indicate that a group is less likely to receive a service than the reference group. For example, compared with obese adults with private insurance, obese adults with no insurance had 0.6 times the odds of receiving advice about exercise after controlling for other factors. Data were insufficient for this analysis for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

- In multivariate models controlling for race, ethnicity, income, education, insurance, age, gender, and residence location, obese Hispanics had 0.7 times the odds of receiving advice about exercise compared with non-Hispanic Whites (Figure 2.15).
- In this multivariate model, poor individuals had 0.8 times the odds compared with high-income individuals. Individuals with less than a high school education had 0.8 times the odds compared with individuals with some college education.
- Obese individuals with no health insurance had 0.6 times the odds compared with individuals with private insurance to receive advice about exercise.
- In this multivariate model, obese individuals within nonmetropolitan areas had 0.8 times the odds of being given advice about exercise compared with individuals within metropolitan areas.
- In this multivariate model, obese females had 1.5 times the odds of being given advice about exercise compared with obese males.

Treatment: Receipt of Recommended Hospital Care for Heart Failure

Recommended hospital care for heart failure includes evaluation of the left ventricular ejection fraction and 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.

Figure 2.16. Composite measure: Hospital patients with heart failure who received recommended hospital care, Medicare only by race/ethnicity, 2002-2004 (left) and All payer, 2005-2006 (right)



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

Source: Centers for Medicare & Medicaid Services, Medicare Quality Improvement Organization Program, 2002-2006.

Denominator: Patients hospitalized for heart failure, all ages.

Note: Whites, Blacks, AI/ANs, and Asians are non-Hispanic groups. Composite incorporates the following measures: (1) receipt of evaluation of left ventricular ejection fraction and (2) receipt of ACE inhibitor for left ventricular systolic dysfunction. Composite is calculated by averaging the percentage of the population that received each of the two incorporated components of care. For further details on composite measures, go to Chapter 1, Introduction and Methods. Data for 2002-2004 and 2005-2006 differ due to modification of the ACE inhibitor measure in 2005 to include receipt of ARBs as an acceptable alternative to ACE inhibitors and the data collection method change made in 2005 from the abstraction of randomly selected medical records for Medicare beneficiaries to the receipt of hospital self-reported data for all payer types. Data were not available for Native Hawaiians and Other Pacific Islanders.

- In 2006, the percentage of patients with heart failure who received recommended hospital care was higher for Blacks than for Whites (91.4% compared with 90.0%; Figure 2.16).
- In 2006, the percentage of patients with heart failure who received recommended hospital care was lower for AI/ANs than Whites (86.3% compared with 90.0%).
- From 2002 to 2004, the overall percentage of Medicare patients with heart failure who received recommended hospital care improved from 73.4% to 77.7% (Figure 2.16; 2005-2006 data not comparable to this time period).
- During the same period, this percentage was significantly lower for Hispanics compared with Whites. In 2004, the percentage was also significantly lower for AI/ANs compared with Whites (72.3% compared with 77.9%).
- From 2002 to 2004, the percentage of Medicare patients with heart failure who received recommended hospital care improved significantly for the total population and for Whites, Blacks, and Hispanics.

HIV and AIDS

Number of people in the United States living with HIV (2006)	226,477[30]
Number of people in the United States living with AIDS (2006)	436,693[30]
Number of deaths among people with AIDS (2006)	14,627[30]
Number of new HIV cases (2006)	56,300[31]
Number of new AIDS cases (2006)	37,852[32]
Federal spending on domestic HIV/AIDS care, cash and housing assistance, and prevention and research (fiscal year 2008 est.)	$18.2 billion[32]

Note: Statistics may vary from previous years due to revised and updated source statistics or addition of data sources.

Changes in HIV infection rates reflect changes in behavior by at-risk individuals that may only partly be influenced by the health care system. However, individual and community programs have shown progress in influencing behavior change. Changes in the incidence of new AIDS cases are affected by changes in HIV infection rates and by the availability of appropriate treatments for HIV-infected individuals. Improved treatments that extend life for those with the disease are reflected in the fact that the number of deaths due to AIDS fell from about 18,000 to 14,600 between 2002 and 2006, after showing no change for the previous 3 years.[33]

The impact of human immunodeficiency virus (HIV) infection and its late-stage manifestation, acquired immune deficiency syndrome (AIDS), is disproportionately higher for racial and ethnic minorities and persons of lower socioeconomic position. While access to care has improved, research shows that Blacks, Latinos, women, and uninsured people with HIV remain less likely to have access to care and less likely to have optimal patterns of care.[34]

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 related to factors faced by many African Americans, including poverty, high-risk behaviors related to sexually transmitted diseases, and stigma (negative attitudes, beliefs, and actions directed at people living with HIV/AIDS or directed at people who do things that might put them at risk for HIV).[35]

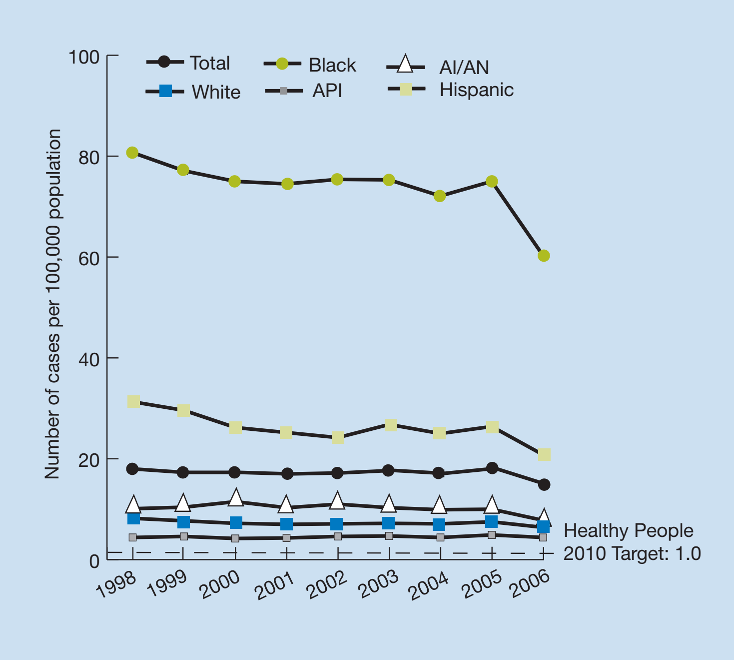
The HIV/AIDS epidemic is also a serious threat to the Hispanic/Latino community. According to current surveillance data, 39% of Latinos who are newly diagnosed with HIV infection progress to an AIDS diagnosis within 1 year.35 In addition to being a population seriously affected by HIV, Hispanics/Latinos continue to face challenges in accessing health care, prevention services, and HIV treatment. In 2005, HIV/AIDS was the fourth leading cause of death among Hispanic/Latino men and women ages 35-44.[36] While having Medicaid insurance and a usual source of care decreased the likelihood of delaying care for HIV, research shows that delay in care is still greater for Latinos and African Americans.[37]

Although the number of cases of HIV and AIDS from 2001 through 2005 decreased (by 1% for men and 19% for women),[38] HIV and AIDS are having an increasing impact on women of color, particularly on African-American women (68.7% of estimated AIDS cases among adult women were Black).[39] Women with HIV and AIDS face particular challenges to accessing care. Women are often the primary caregivers in their families, thus making their own health a lesser priority. Risk behaviors such as drug use and sex trading also put HIV-infected women at higher risk for depression, violence, family problems, and inadequate social support.[40]

Management: New AIDS Cases

Currently, comprehensive data on HIV infection rates across the Nation are lacking; however, early and appropriate treatment of HIV disease can delay progression to AIDS. Improved management of chronic HIV disease has likely contributed to declines in new AIDS cases. For example, as the use of highly active antiretroviral therapy (HAART) to treat HIV infection became widespread in the mid-1990s, rates of new AIDS cases declined.[41,42]

Figure 2.17. New AIDS cases per 100,000 population age 13 and over, by race/ethnicity, 1998-2006



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, 1998-2006.

Reference population: 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 2006, the overall rate of new AIDS cases decreased to about 15 cases per 100,000 population (Figure 2.17).
- From 1998 to 2006, the rate of new AIDS cases decreased for Blacks (from 80.7 to 60.3 per 100,000), Hispanics (from 31.3 to 20.8 per 100,000), and Whites (from 8.2 to 6.4 per 100,000).
- During this period, the gap between Blacks and Whites decreased. However, in 2006, the rate of new AIDS cases was still almost 10 times higher (60.3 per 100,000 compared with 6.4 per 100,000) for Blacks than for Whites.

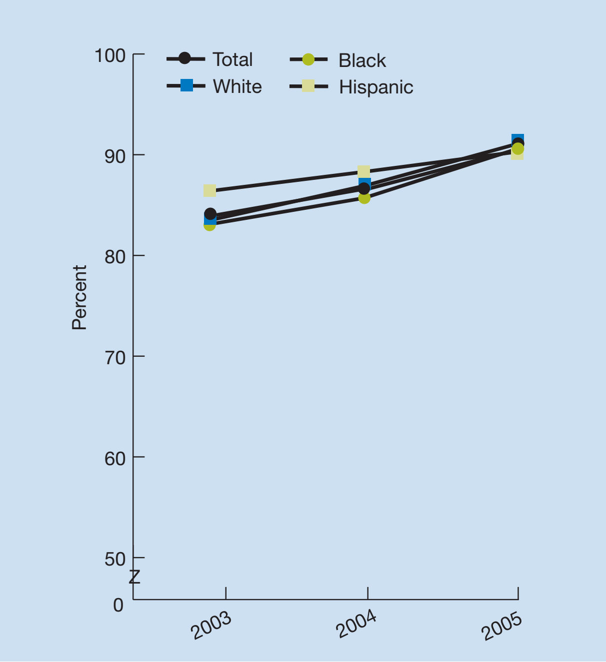
- From 1998 to 2006, the gap between Hispanics and non-Hispanic Whites decreased. However, in 2006, the rate of new AIDS cases was still more than three times higher for Hispanics than for Whites (20.8 per 100,000 compared with 6.4 per 100,000).
- In 2006, the rate of new AIDS cases was almost three times higher for men compared with women (22.4 per 100,000 compared with 7.8 per 100,000; data not shown)
- No group has reached the Healthy People 2010 target of 1.0 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,[ix] HIV measures tracked in the NHDR come from the HIV Research Network. 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, 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.[43]

Figure 2.18. Adult patients with HIV and CD4 count <200 who received PCP prophylaxis in the calendar year, by race/ethnicity, 2003-2005



Source: Agency for Healthcare Research and Quality, Center for Delivery, Organization, and Markets, HIV Research Network, 2003-2005.

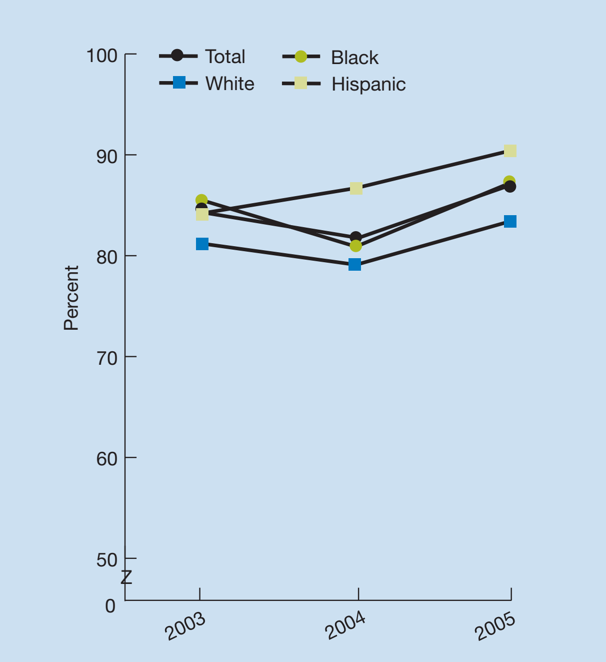
Reference population: HIV patients age 18 and over receiving care from HIV Research Network providers.

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.

[ix] 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.

- From 2003 to 2005, the overall percentage of HIV patients with CD4 cell count <200 who received PCP prophylaxis increased. The percentage was not significantly different for any racial or ethnic group compared with Whites (Figure 2.18).
- During this period, the gap between men and women increased for HIV patients with CD4 cell count <200 who received PCP prophylaxis. In 2005, women were less likely than men to receive PCP prophylaxis treatment (86.5% compared with 91.9%; data not shown).

Figure 2.19. Adult patients with HIV and CD4 count <50 who received MAC prophylaxis in the past year, by race/ethnicity, 2003-2005



Source: Agency for Healthcare Research and Quality, Center for Delivery, Organization, and Markets, HIV Research Network, 2003-2005.

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

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 2003 to 2005, the overall percentage of HIV patients with CD4 cell count <50 who received MAC prophylaxis remained the same.
- During this period, the gap between Hispanics and non-Hispanic Whites remained the same. In 2005, the percentage of HIV patients with CD4 cell count <50 who received MAC prophylaxis was higher for Hispanics than for Whites (90.4% compared with 83.4%; Figure 2.19).
- From 2003 to 2005, the gap between men and women in the percentage of HIV patients with CD4 cell count <50 who received MAC prophylaxis remained the same. However, in 2005, women were still less likely than men to receive MAC prophylaxis treatment (85.3% compared with 87.7%; data not shown).

Mental Health and Substance Abuse

Highest cause of death rank-suicide (2005)	11th[4]
Adults age 18 and over with any mental disorder or substance disorder in past year (2001-2003)	32.4%[44,x]
Alcohol-related motor vehicle deaths (2006)	17,602[45]
People age 12 and over with alcohol and/or illicit drug dependence or abuse (2006)	22.6 million (9.2%)[46]
Adults age 18 and over with serious psychological distress (2006)	24.9 million[46]
Youths ages 12-17 with a major depressive episode during the past year (2006)	2.0 million (7.9%)[46]
Adults age 18 and over with a major depressive episode during the past year (2006)	15.8 million (7.2%)[46]
Adults with history of major depressive disorder (2006)	30.4 million (13.9%)[46]
Total medical expenditures for substance abuse and mental disorders (2003 est.)	$121 billion[47]
Cost-effectiveness of problem drinking screening and brief counseling	$ 14,000-$ 35,000/QALY[7]

Note: Statistics may vary from previous years due to revised and updated source statistics or addition of data sources.

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.[48] In a cross-national survey of adults in 14 countries (8 developed, 6 less developed) conducted from 2001 to 2003, the United States had the highest rate of any mental disorders, including substance abuse.[49,x] 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[xi]), 13.4%.

Socioeconomic factors and cultural factors can affect mental health. For example, poverty is both a risk factor for poor mental health and can be a consequence of poor mental health. 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.

---

[x] To some extent, this finding may be attributable to cross-national differences in how people respond to the mental health assessment tool used.

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

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 and present significant barriers to treatment. These include cost of care, social stigma, fragmented organization of services, discrimination,[xii] racism, and mistrust. One way to help meet the needs of racial and ethnic populations is to engage representatives from the community being served in the design, planning, and implementation of services. Providing services to meet the cultural and linguistic needs of more diverse populations may demand more of an initial investment than continuing services as usual. To date, there are no cost-effectiveness studies that provide information on the benefits of providing or failing to provide culturally and linguistically appropriate services.[50]

In rural and remote areas, many people with mental illnesses have inadequate access to care, 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 dearth of culturally and linguistically competent providers. Finally, of the 1,669 federally designated mental health professional shortage areas, more than 85% are rural areas.[51]

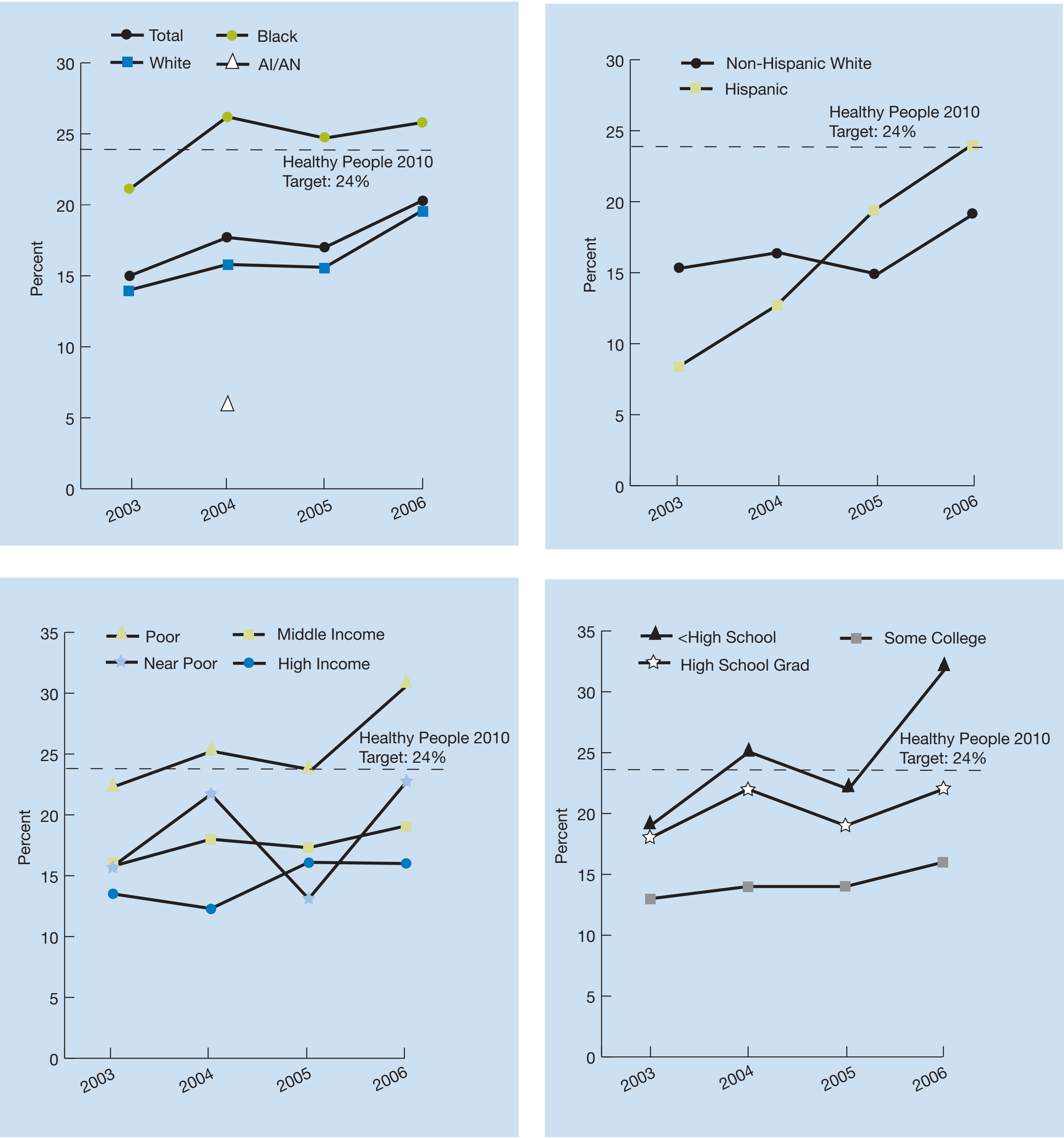
Treatment: Receipt of Needed Treatment for Illicit Drug Use

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

[xii] The Office for Civil Rights (OCR) (http://www.hhs.gov/ocr/) is the sole 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.

[xiii] Illicit drugs included in this measure are marijuana/hashish, cocaine (including crack), inhalants, hallucinogens, heroin, and prescription-type psychotherapeutic drugs (nonmedical use).

Figure 2.20. People age 12 and over who needed treatment for illicit drug use and who received such treatment at a specialty facility in the last 12 months, by race (top left), ethnicity (top right), income (bottom left), and education (bottom right), 2003-2006



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

Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2006.

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

Note: Estimates by education were available only for persons age 18 and over. "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 past year: (1) dependent on any illicit drug; (2) abuse of any illicit drug; or (3) received treatment for an illicit drug problem at a specialty facility (drug and alcohol rehabilitation facilities [inpatient or outpatient], hospitals [inpatient only], and mental health centers). Data were insufficient for this analysis for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

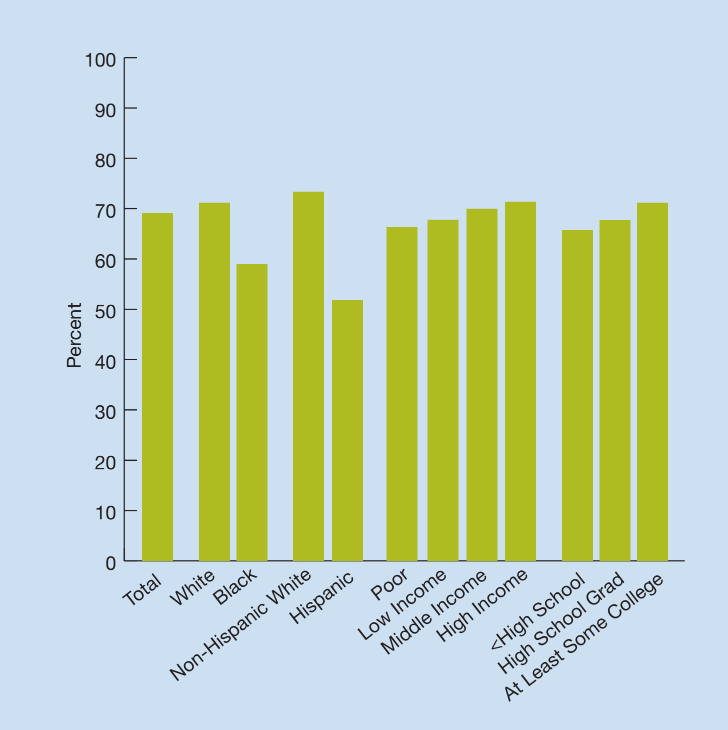
- From 2003 to 2006, the gap between Blacks and Whites decreased. In 2006, the disparity was eliminated between these groups in the percentage of people age 12 and over who needed treatment for illicit drug use and received it at a specialty facility in the past year (Figure 2.20); there was no statistically significant difference.
- From 2003 to 2006, the gap between Hispanics and non-Hispanic Whites decreased. In 2006, the disparity between these groups in those who needed and received treatment for illicit drug use was eliminated; there was no statistically significant difference.
- From 2003 to 2006, the gap between poor and high-income people remained the same. In 2006, a higher percentage of poor people needed and received treatment for illicit drug use than high-income people (30.8% compared with 16.5%).
- From 2003 to 2006, the gap between people with less than a high school education and people with some college education decreased. In 2006, people with less than a high school education who needed treatment were significantly more likely to receive treatment for illicit drug use than people with some college education (31.7% compared with 15.9%).
- In 2006, Blacks, Hispanics, poor people, and people with less than a high school education achieved the Healthy People 2010 target of 24% of people age 12 and over who needed treatment for illicit drug use actually receiving such treatment.

> *Nearly 30% of adults with mood, anxiety, or impulse control disorders received minimally adequate treatment.*

Treatment: Receipt of Treatment for Depression

Treatment for depression is an effective way to reduce the chances of future major depressive episodes. However, many people face significant barriers to treatment for depression, such as cost of care, societal stigma, and fragmented organization of services.[50]

Figure 2.21. 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, and education, 2006



Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2006.

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

Note: Major depressive episode is defined as a period of at least 2 weeks when a person experienced a depressed mood or loss of interest or pleasure in daily activities and had a majority of the symptoms for depression described in the 4th 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 (58.9% compared with 71.1%) and lower for Hispanics than for non-Hispanic Whites (51.8% compared with 73.3%; Figure 2.21).
- There were no statistically significant differences by income level or education level for this measure.

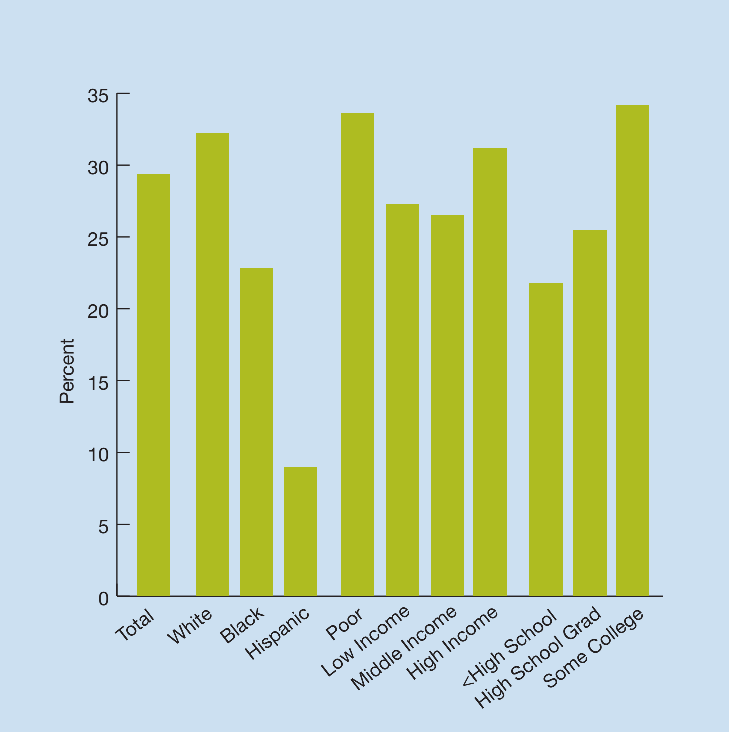
Treatment: Receipt of Minimally Adequate Treatment for Mental Disorders

Receipt of any treatment for a major depressive episode is a relatively low standard against which to assess quality of mental health care. The Collaborative Psychiatric Epidemiology Surveys (CPES) allow more detailed examination of mental health care. The CPES join together three nationally representative surveys, the National Comorbidity Survey Replication (NCS-R), the National Survey of American Life

(NSAL), and the National Latino and Asian American Study (NLAAS). Together, these surveys provide national estimates of mental disorders and mental health care for majority and minority populations in the United States in much greater detail than other data sources.

To better assess quality of mental health care, a higher standard of care, minimally adequate treatment, has been specified using the CPES. This measure defines minimally adequate treatment as pharmacotherapy, including at least 60 days of an appropriate medication and 4 visits to a physician; or psychotherapy, including at least 8 visits to a health care or human services professional lasting an average of 30 minutes or more.[52]

Figure 2.22. Adults with a mood, anxiety, or impulse control disorder in the last 12 months who received minimally adequate treatment, by race/ethnicity, income, and education, 2001-2003



Source: National Institute of Mental Health, Collaborative Psychiatric Epidemiology Surveys, 2001-2003.

Reference population: U.S. population age 18 and over who had a mood, anxiety, or impulse control disorder in the past year.

Note: White and Black are non-Hispanic groups. Data for Asians and Pacific Islanders and American Indians and Alaska Natives were not statistically reliable for this analysis. The Composite International Diagnostic Interview (CIDI) was used to make psychiatric diagnoses consistent with the 4th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV). "Minimally adequate treatment" is defined as at least 60 days of an appropriate medication and 4 visits to a physician OR at least 8 visits to a health care or human services professional lasting an average of 30 minutes or more in the past year.

- Nearly 30% of adults with mood, anxiety, or impulse control disorders received minimally adequate treatment (Figure 2.22).
- The percentage of adults who received minimally adequate treatment was lower among Blacks and Hispanics compared with Whites, with Hispanics having the lowest percentage of all groups.
- The percentage of adults who received minimally adequate treatment was also lower among individuals with less than a high school education and high school graduates compared with those with some college education.
- There were no statistically significant differences by household income for this measure.

Respiratory Diseases

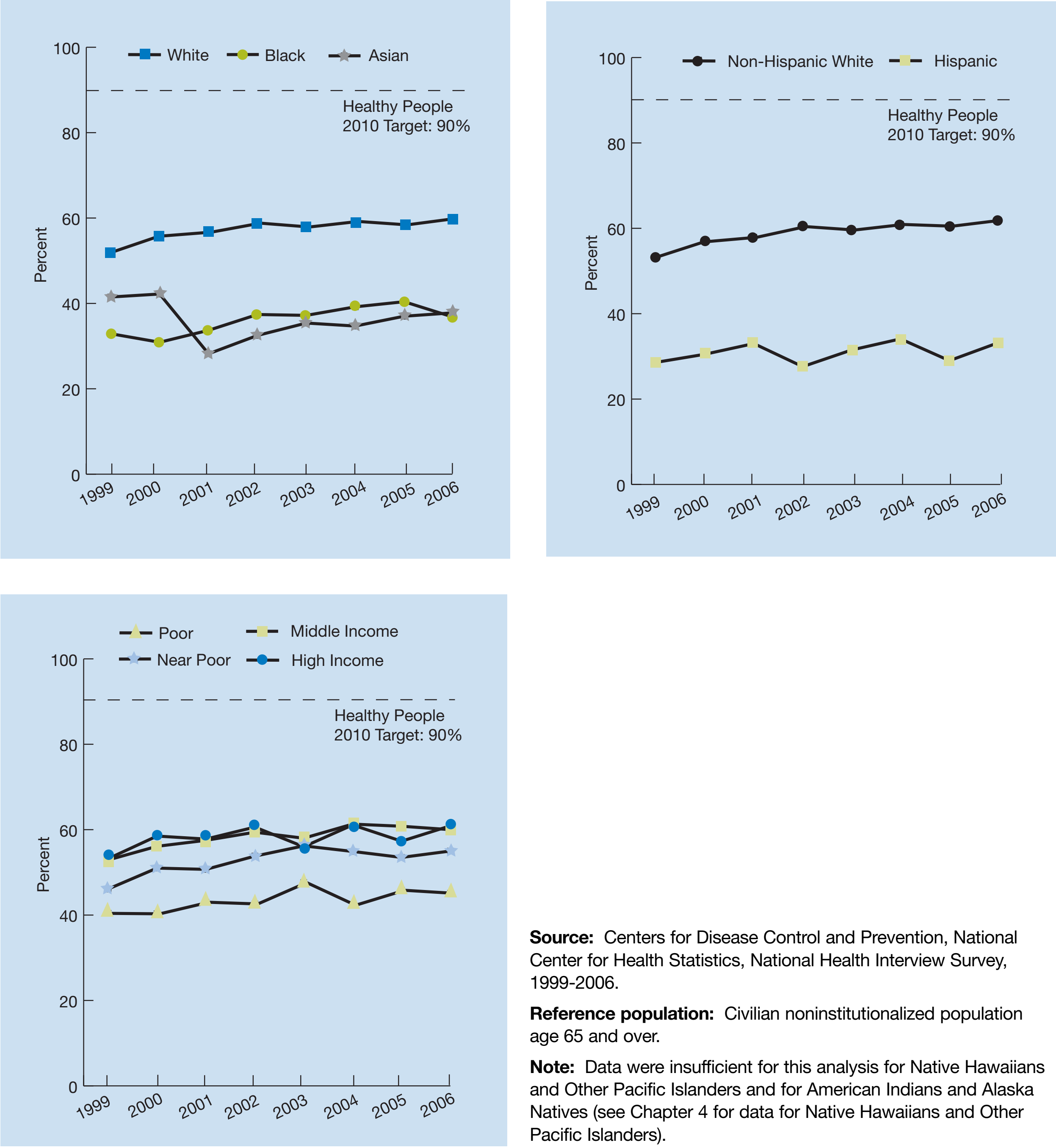
Number of deaths due to lung diseases (2004)	226,379[53]
Number of deaths, influenza and pneumonia combined (2005)	63,00[14]
Cause of death rank, influenza and pneumonia combined (2005)	8th[4]
People age 18 and over with current asthma (2006)	16 million[54]
People under age 18 with an asthma attack in past 12 months (2004)	5.9 million[55]
Annual number of cases of the common cold (est.)	>1 billion[56]
Number of discharges attributable to pneumonia (2003 est.)	1.4 million[57]
Total cost of lung diseases (2007 est.)	$153.6 billion[6]
Direct medical costs of lung diseases (2007 est.)	$94.8 billion[6]
Total approximate cost of upper respiratory infections (annual)	$40 billion[58]
Total cost of asthma (2007)	$19.7 billion[53]
Direct medical costs of asthma (2007)	$14.7 billion[53]
Cost-effectiveness of influenza immunization	$0-$14,000/QALY[7]

Note: Statistics may vary from previous years due to revised and updated source statistics or addition of data sources.

Prevention: Pneumococcal Vaccination

Vaccination is an effective strategy for reducing illness, death, and disparities associated with pneumococcal disease and influenza.[59,60]

Figure 2.23. Adults age 65 and over who ever received pneumococcal vaccination, by race (top left), ethnicity (top right), and income (bottom left), 1999-2006



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 1999-2006.

Reference population: Civilian noninstitutionalized population age 65 and over.

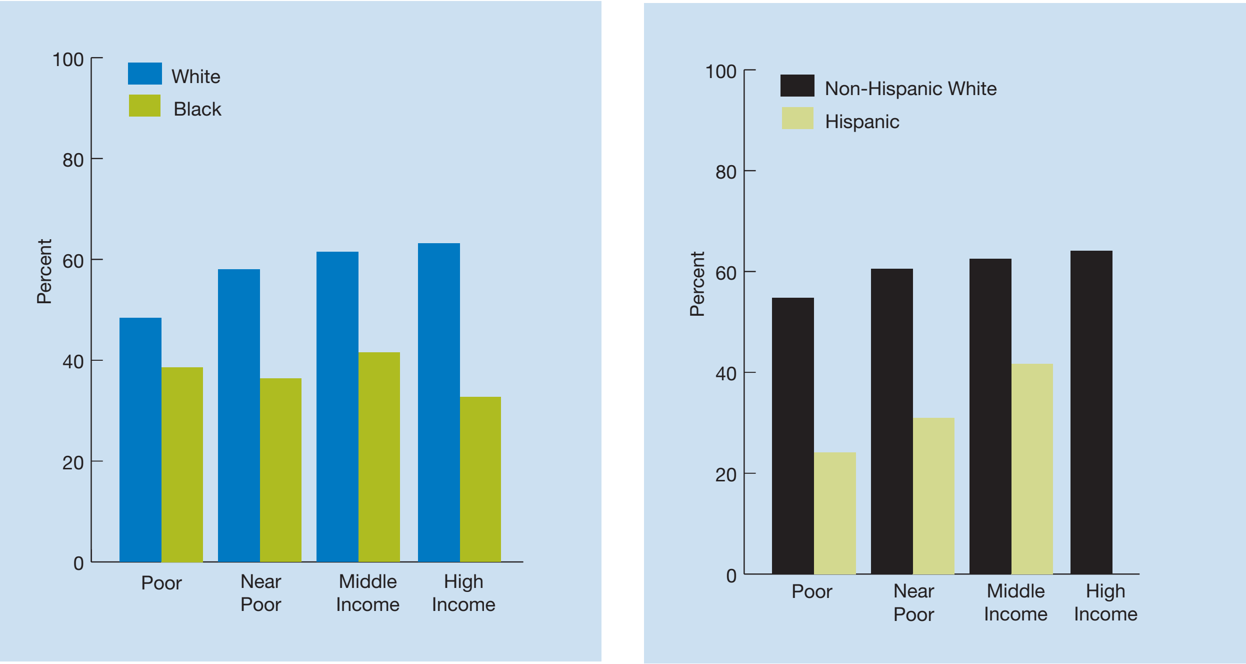
Note: Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders and for American Indians and Alaska Natives (see Chapter 4 for data for Native Hawaiians and Other Pacific Islanders).

- From 1999 to 2006, the overall percentage of adults age 65 and over who had received pneumococcal vaccination improved significantly, from 49.9% to 57.3% (data not shown). Improvements were observed for Whites, Hispanics (Figure 2.23), and people with less than a high school education (data not shown).

- The gap between Blacks and Whites increased. In 2006, the percentage of adults age 65 and over who ever had pneumococcal vaccination was significantly lower for Blacks than for Whites (36.8% compared with 59.9%).
- From 1999 to 2006, the gap between Hispanics and non-Hispanic Whites decreased. However, in 2006, the percentage of Hispanic adults age 65 and over who ever had pneumococcal vaccination was still about half that of non-Hispanic Whites (33.2% compared with 61.9%).
- The gap between poor and high-income people remained the same. In 2006, the percentage was significantly lower for poor older adults than for high-income older adults (45.1% versus 60.9%).
- In 2006, as in 2005, no group achieved the Healthy People 2010 target of 90% of adults age 65 and over having received pneumococcal vaccination.

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

Figure 2.24. Adults age 65 and over who ever received pneumococcal vaccination, by race (left) and ethnicity (right), stratified by income, 2006

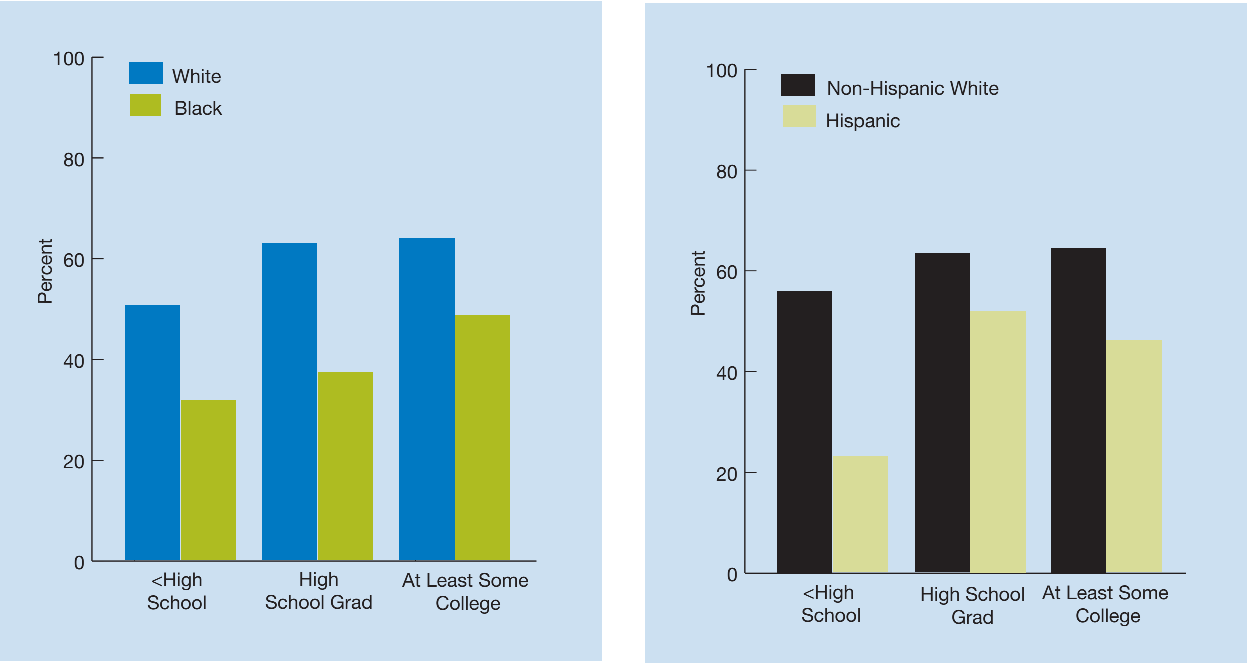


Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2006.

Reference population: 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, American Indians and Alaska Natives, and high-income Hispanics.

Figure 2.25. Adults age 65 and over who ever received pneumococcal vaccination, by race (left) and ethnicity (right), stratified by education, 2006



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2006.

Reference population: Civilian noninstitutionalized population age 65 and over.

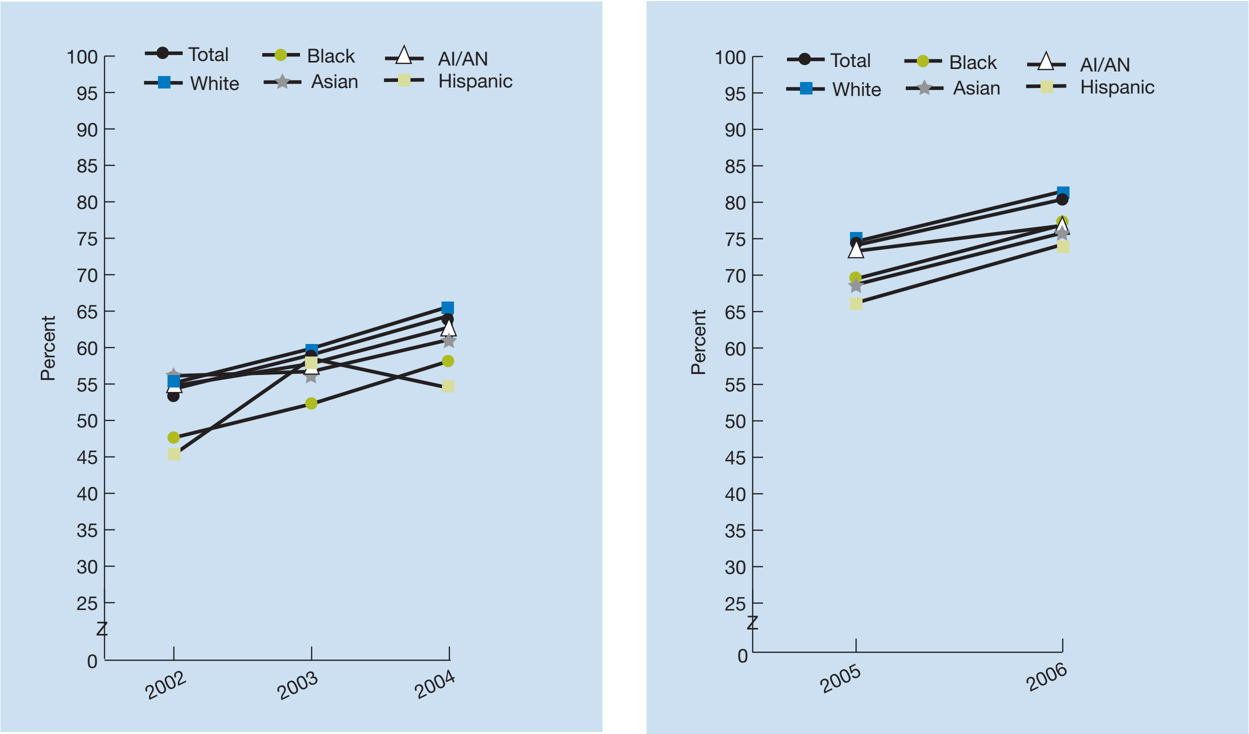
Note: Age adjusted to the 2000 U.S. standard population. Data were insufficient for this analysis for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

- With the exception of the poor group, Blacks at all income levels were less likely than Whites of the same income level to ever have had a pneumococcal vaccination (Figure 2.24). High-income Blacks were almost half as likely as Whites of the same income level to receive this preventive care.
- Hispanics at all income levels were less likely than non-Hispanic Whites of the same income level to have ever had a pneumococcal vaccination. Poor Hispanics were less than half as likely as Whites of the same income level to receive this preventive care.
- With the exception of Hispanic high school graduates, Blacks and Hispanics at all education levels were less likely than Whites to have ever had a pneumococcal vaccination (Figure 2.25).

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 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.[57] The Centers for Medicare & Medicaid Services tracks a set of measures for quality of pneumonia care for hospitalized patients from the CMS Quality Improvement Organization (QIO) program. This set of measures has been adopted by the Hospital Quality Alliance (HQA).

Figure 2.26. Composite measure; Hospital patients with pneumonia who received recommended hospital care, by race/ethnicity, Medicare only, 2002-2004 (left) and All payer, 2005-2006 (right)



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

Source: Centers for Medicare & Medicaid Services, Quality Improvement Organization Program, 2002-2006.

Denominator: Patients with pneumonia who are hospitalized, all ages.

Note: Whites, Blacks, Asians, and AI/ANs are non-Hispanic groups. Composite includes the following five measures: (1) receipt of antibiotics within 4 hours, (2) receipt of appropriate antibiotics, (3) receipt of blood culture before antibiotics, (4) receipt of influenza screening (i.e., person is assessed as to whether he or she would be a good candidate for vaccination) or vaccination, and (5) receipt of pneumococcal screening or vaccination. Composite is calculated by averaging the percentage of opportunities for care in which the patient received all five incorporated components of care. For further details on composite measures, go 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 all 3 years, from 2002 to 2004, the percentage of patients with pneumonia who received recommended hospital care[xiv] was significantly lower for Blacks and Hispanics compared with Whites (Figure 2.26). In 2004, the percentage was also significantly lower for Asians compared with Whites.
- In 2006, the percentage was lower for Blacks (76.9%), Asians (75.8%), and Hispanics (74.2%) than for Whites (81.5%) (Figure 2.26).
- From 2002 to 2004 and from 2005 to 2006, the percentage of patients with pneumonia who received recommended hospital care improved significantly for the total population and for all racial and ethnic groups.

[xiv] "Recommended hospital care" is a composite of five separate measures (the note for Figure 2.25 lists these measures). For further details on composite measures, go to Chapter 1, Introduction and Methods.

Management: Daily Asthma Medication

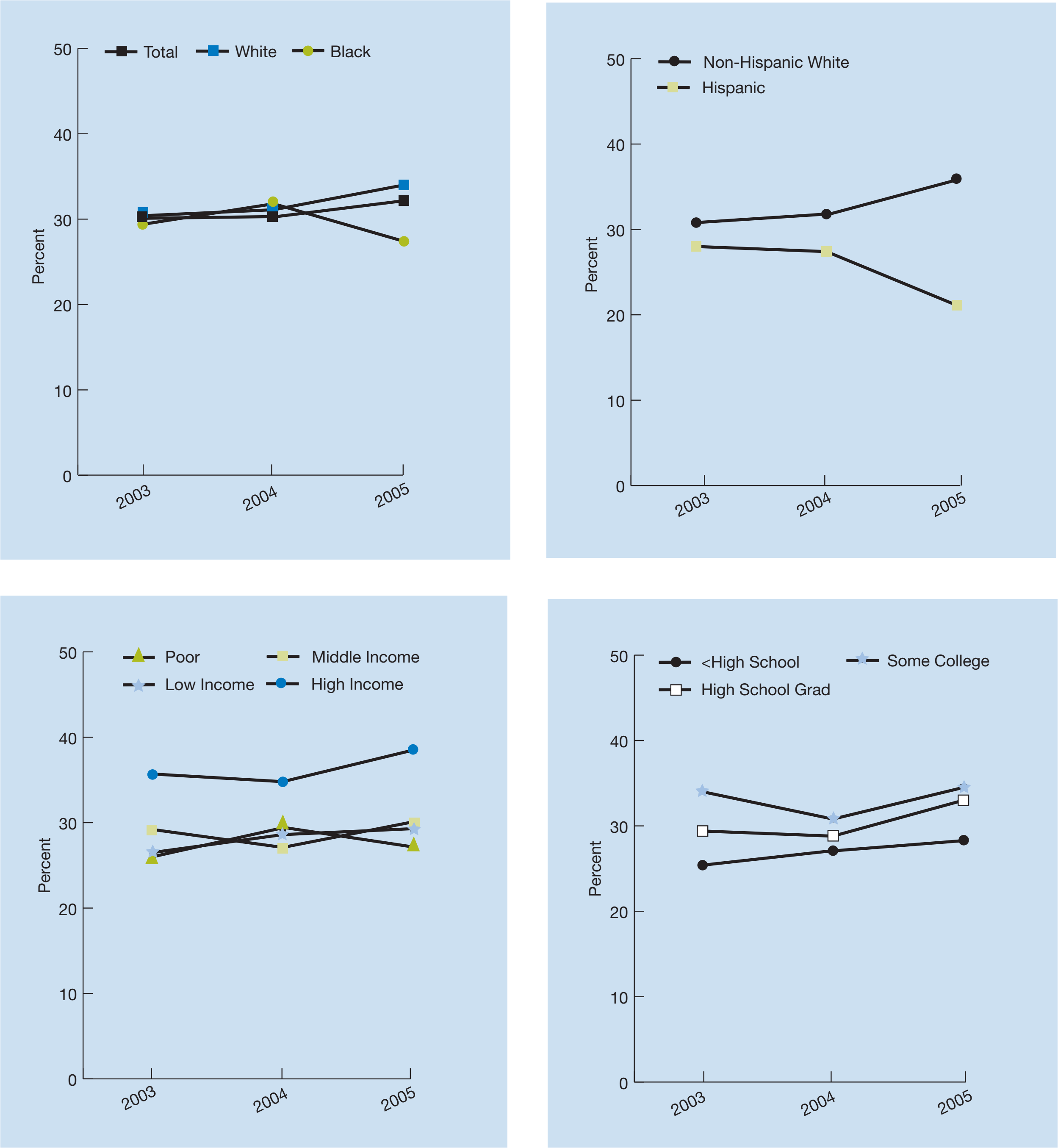
Improving quality of care for people with asthma can reduce the occurrence of asthma attacks and avoidable hospitalizations. The National Asthma Education and Prevention Program, coordinated by the National Heart, Lung, and Blood Institute, develops and disseminates science-based guidelines for the diagnosis and management of asthma.[61] 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.[62]

Daily long-term control medication is necessary to prevent exacerbations and chronic symptoms for all patients with persistent asthma. Appropriate controller medications for people with mild persistent asthma[63,xv] include inhaled corticosteroids, cromolyn, nedocromil, theophylline, and leukotriene modifiers.[64]

Blacks with current asthma were less likely than Whites with current asthma to take daily preventive medicine.

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

Figure 2.27. People with current asthma who are now taking preventive medicine daily or almost daily (either oral or inhaler), by race (top left), ethnicity (top right), income (bottom left), and education (bottom right), 2003-2005



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

Reference population: Noninstitutionalized population with asthma as defined below.

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2003-2005.

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 Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives for this analysis.

- From 2003 to 2005, there were no statistically significant changes over time in the percentage of people with current asthma who are taking daily preventive medicine for any group except for non-Hispanic Whites (Figure 2.27).
- From 2003 to 2005, the gap between Blacks and Whites remained the same. In 2005, Blacks with current asthma were less likely than Whites with current asthma to take daily preventive medicine (27.4% compared with 34.0%).
- From 2003 to 2005 the gap between Hispanics and non-Hispanic Whites increased. In 2005, Hispanics with current asthma were less likely than non-Hispanic Whites with current asthma to take daily preventive medicine (21.1% compared with 35.9%).
- From 2003 to 2005, there were no statistically significant changes overall by income or education status in the percentage of people with current asthma who took daily preventive medicine (Figure 2.26).
- In 2005, people with current asthma who were poor (27.1%), low income (29.3%), and middle income (30.1%) were less likely than high-income people (38.5%) to take daily preventive medicine.
- There were no statistically significant differences by education status in 2005.

Nursing Home, Home Health, and Hospice Care

Number of nursing home residents ever admitted during the calendar year (2006)	3,176,119[65]
Medicare fee-for-service (FFS) admissions to skilled nursing facilities (2005)	2,543,133[66]
Number of Medicare FFS home health patients (2006)	3,031,814[67]
Number of Medicare FFS beneficiaries using Medicare hospice services (2006)	935,565[68]
Total costs of nursing home care (2006)	$124.9 billon[69]
Medicare expenditures for nursing home care (2006)	$20.8 billion[69]
Total costs of home health care (2006)	$52.7 billion[69]
Medicare expenditures for home health care (2006)	$19.8 billion[69]
Medicare FFS payments for hospice services (2006)	$9.2 billion[70]

Note: Statistics may vary from previous years due to revised and updated source statistics or addition of data sources. Cost estimates for nursing home and home health services include costs only for freestanding skilled nursing facilities, nursing homes, and home health agencies, and not facilities that are hospital based.

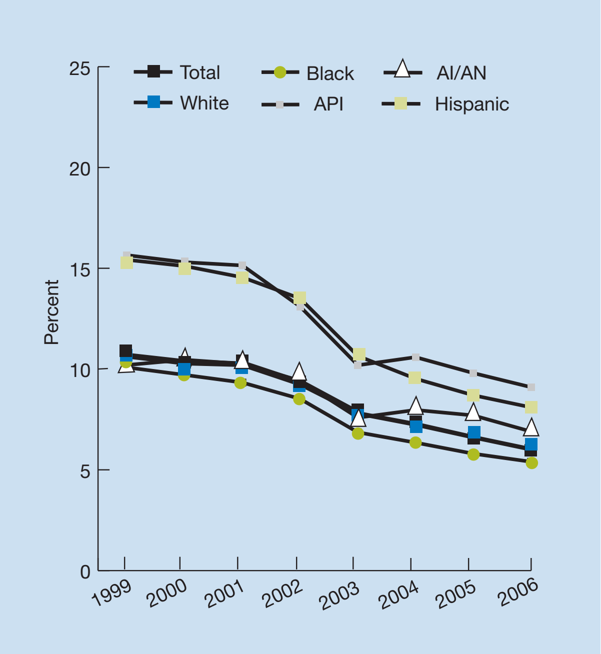
This section highlights two core measures of nursing home quality of care—use of physical restraints and presence of pressure sores—and two measures of home health care quality—improvement in walking or moving around and episodes with acute care hospitalization. In addition, this section includes supplemental measures on management of pain in hospice care, receipt of care consistent with patient's stated end-of-life wishes, and referral to hospice at the right time.

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.

> *Use of physical restraints on patients declines in nursing homes—Associated Press*

Figure 2.28. Long-stay nursing home residents with physical restraints, by race/ethnicity, 1999-2006



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

Source: Centers for Medicare & Medicaid Services, Minimum Data Set, 1999-2006. Data are from the third quarter of each calendar year.

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

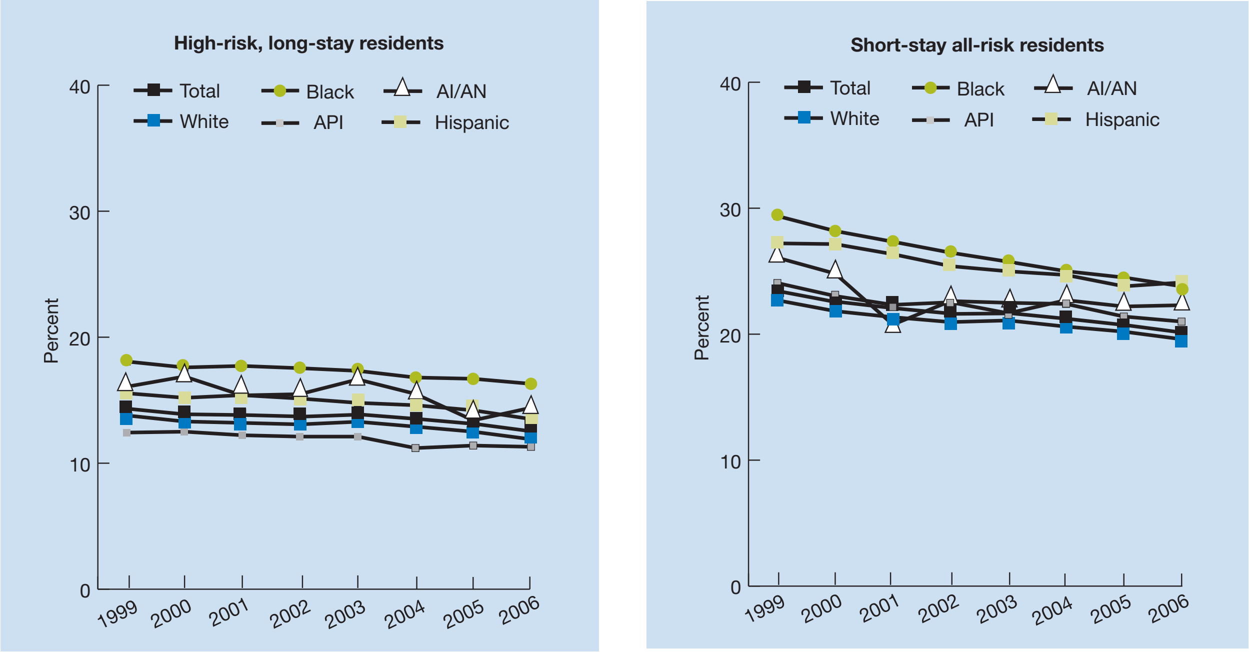
Note: White, Black, API, and AI/AN are non-Hispanic groups. Long-stay residents are people in an extended/permanent nursing home stay.

- From 1999 to 2006, the percentage of residents who were physically restrained decreased from 10.7% to 6.0% (Figure 2.28).
- From 1999 to 2006, the gap between APIs and Whites in the percentage of residents who were physically restrained decreased. However, in 2006 the percentage of residents who were physically restrained was higher for APIs than for Whites (9.1% compared with 6.0%).
- From 1999 to 2006, the gap between Hispanics and Whites decreased. However, in 2006, the percentage of residents who were physically restrained was still higher for Hispanics than for Whites (8.1% compared with 6.0%).

Management: Presence of 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, 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 2.29. High-risk, long-stay nursing home residents (left), and short-stay residents (right) with pressure sores, by race/ethnicity, 1999-2006



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

Source: Centers for Medicare & Medicaid Services, Minimum Data Set, 1999-2006. 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 1999 to 2006, the percentage of high-risk,[xvi] long-stay residents who developed pressure sores decreased from 14.3% to 12.5% (Figure 2.29). While improvements were observed for all groups except for AI/ANs, the gap between Blacks, AI/ANs, and Hispanics compared with Whites remained the same.
- In 2006, the percentage of high-risk, long-stay residents who developed pressure sores was significantly higher for Blacks (16.3%), AI/ANs (14.4%), and Hispanics (13.5%) than for Whites (11.9%).

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

- In 2006, the percentage of high-risk, long-stay residents who developed pressure sores was significantly higher for males than females (15.4% compared with 11.5%; data not shown).

Short-stay nursing home residents

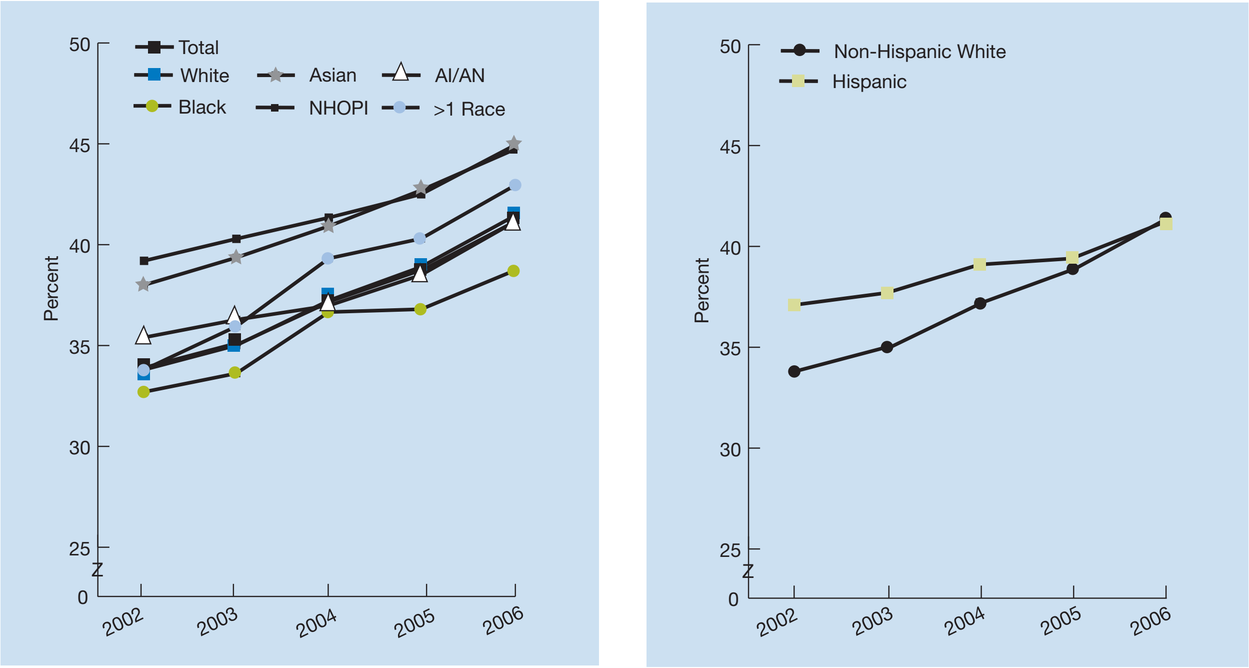
- From 1999 to 2006, the percentage of short-stay residents who had pressure sores decreased significantly for all groups (Figure 2.29).
- From 1999 to 2006, the gap between Blacks and Whites decreased. However, in 2006, Black short-stay residents were still more likely than Whites to have pressure sores (23.8% compared with 19.6%).
- From 1999 to 2006, the gap between APIs and Whites increased. In 2006, API short-stay residents were still more likely than Whites to have pressure sores (22.3% compared with 19.6%).
- From 1999 to 2006, the gap between AI/ANs and Whites decreased. There were no statistically significant differences between AI/ANs and Whites in 2006.
- From 1999 to 2006, the gap between Hispanics and Whites remained the same. In 2006, Hispanic short-stay residents were still more likely than Whites to have pressure sores (24.1% compared with 19.6%).
- In 2006, the percentage of short-stay residents who had pressure sores was higher for males than for females (22.4% compared with 19%; data not shown).

Management: Improvement by Home Health Care Patients in Walking or Moving Around

How well a patient improves in ability level while getting home health care is a reflection of the provider's quality of service; 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.[xvii]

[xvii] 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.

Figure 2.30. Adult home health care patients whose ability to walk or move around improved, by race (left) and ethnicity (right), 2002-2006



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

Source: Centers for Medicare & Medicaid Services, Outcome and Assessment Information Set, 2002-2006.

Denominator: Episodes for adult nonmaternity patients receiving at least some skilled home health care.

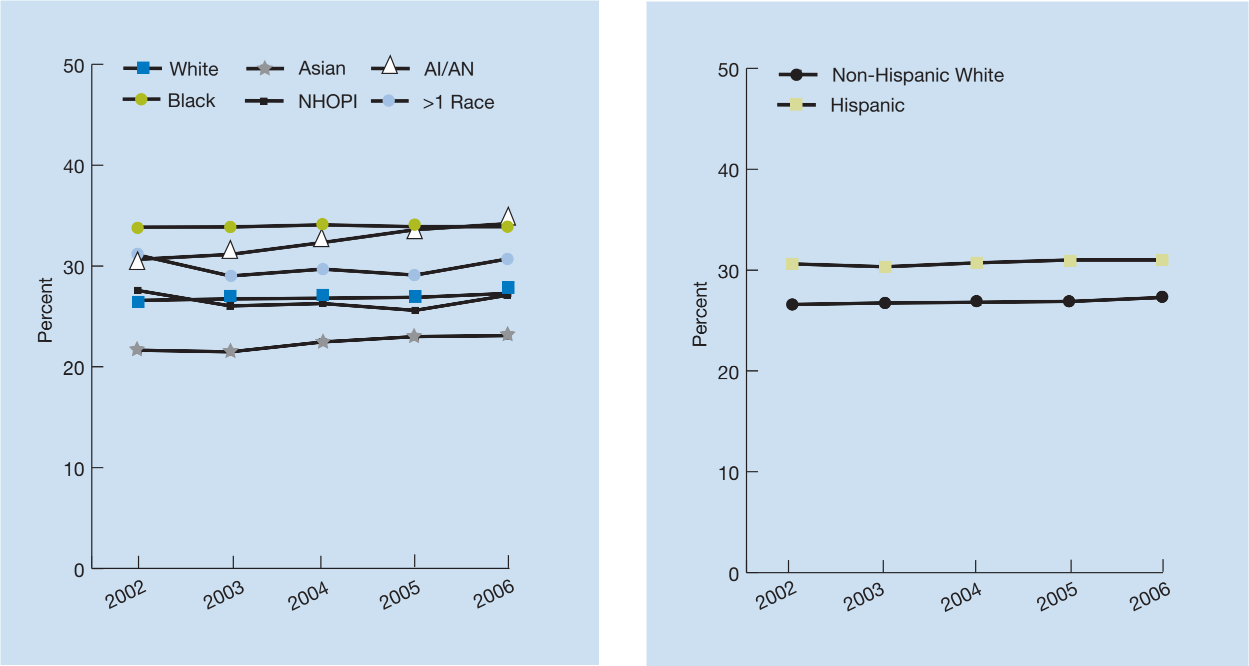
Note: An episode is a 60-day period during which a patient is under the direct care of a home health agency. It starts with the beginning/resumption of care and finishes when the patient is discharged from home health care or is transferred to an inpatient facility. Some patients have multiple episodes in a year. Data are reported only for those patients who were not already performing at the highest level of ambulation.

- From 2002 to 2006, the percentage of home health care patients who got better at walking and moving around improved for Whites (from 33.8% to 41.4%; Figure 2.30) and the total population (from 33.9% to 41.2%). There were no statistically significant changes for other groups.
- In 2006, there were no statistically significant differences between minority groups and Whites (Figure 2.30).

Management: 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 the desirable outcome. 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 go into the hospital while they are getting 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 (left) and ethnicity (right), 2002-2006



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

Source: Centers for Medicare & Medicaid Services, Outcome and Assessment Information Set, 2002-2006.

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.

- From 2002 to 2006, the gap between Blacks and Whites in the percentage of home health care patients who were admitted to the hospital remained the same. In 2006, the percentage was higher for Blacks than for Whites (33.9% compared with 27.3%; Figure 2.31).
- The gap between AI/ANs and Whites in the percentage of home health care patients who were admitted to the hospital increased. In 2006, the percentage was higher for AI/ANs than for Whites (34.2% compared with 27.3%).
- The gap between Asians and Whites in the percentage of home health care patients who were admitted to the hospital remained the same. In 2006, the percentage was lower for Asians than for Whites (23.1% compared with 27.3%).
- During the same period, the gap between Hispanics and non-Hispanic Whites in the percentage of home health care patients who were admitted to the hospital remained the same. In 2006, the percentage was higher for Hispanics than for non-Hispanic Whites (31.0% compared with 27.3%).

Management: Hospice Care

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 patient’s and families’ wishes; and reasonably consistent with clinical, cultural, and ethical standards.”[71] 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.[xviii] 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.[72]

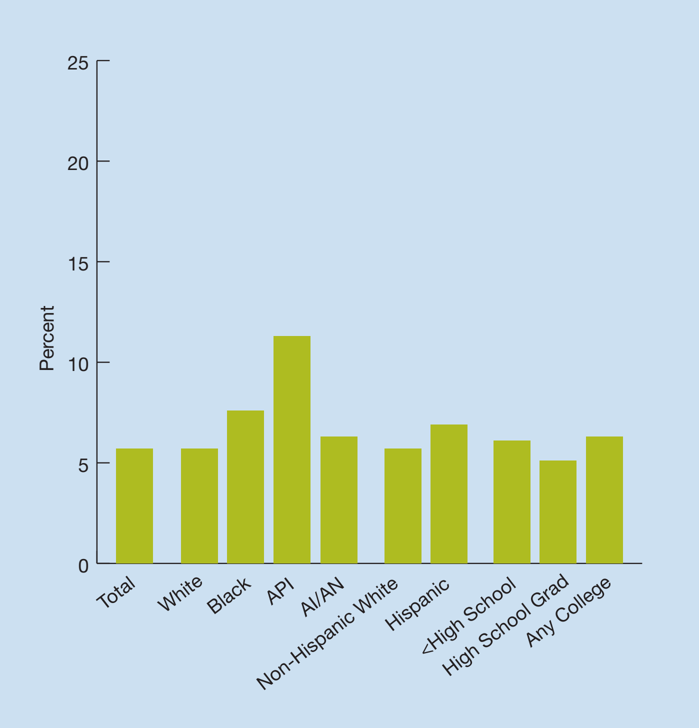
Pain management

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

[xviii] 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.

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

Figure 2.32. Hospice patients who did NOT receive the right amount of medicine for pain, by race, ethnicity, and education, 2007



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, 2007.

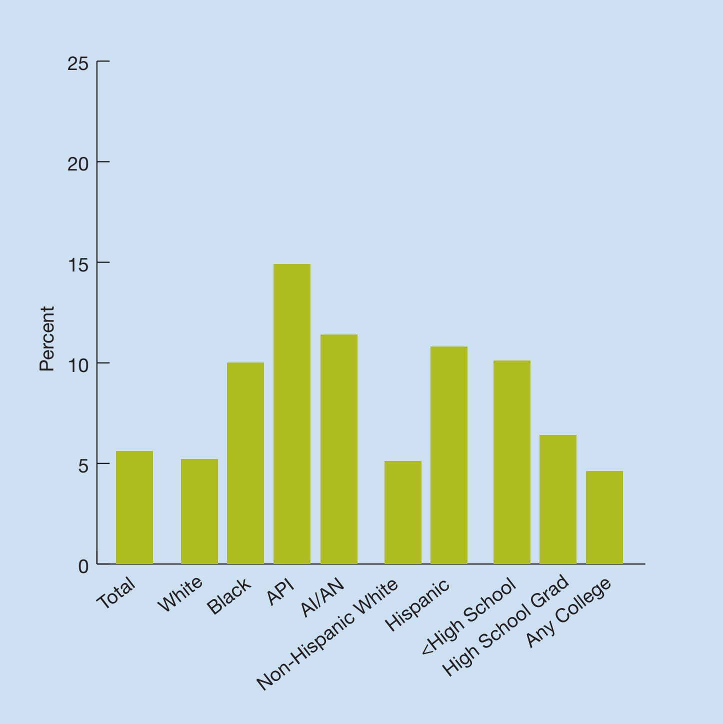
Denominator: Adult hospice patients.

- The percentage of hospice patients whose families reported that they did not receive the right amount of medicine for pain was 5.7% in 2007 (Figure 2.32).
- 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 (7.6%) and APIs (11.3%) than for Whites (5.7%).
- 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 (6.9% compared with 5.7%).

End-of-life care

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

Figure 2.33. Hospice patients age 18 and over who did NOT receive care consistent with their stated end-of-life wishes, by race, ethnicity, and education, 2007



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, 2007.

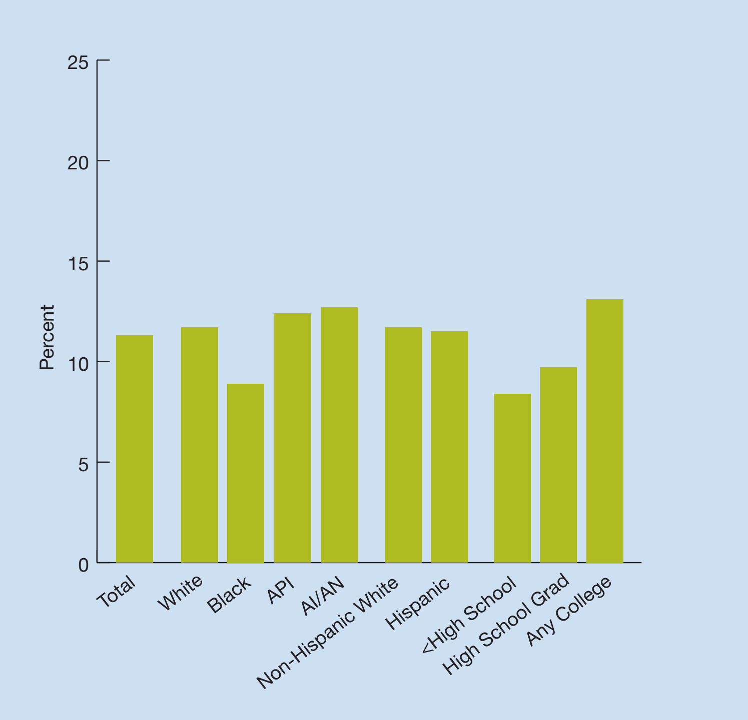
Denominator: Adult hospice patients.

- The overall percentage of hospice patients whose families reported that they did not receive end-of-life care consistent with their wishes was 5.6% in 2007 (Figure 2.33).
- The percentage whose families reported that they did not receive care consistent with their wishes was almost two times higher for Blacks (10.0%), almost three times higher for APIs (14.9%), and more than two times higher for AI/ANs (11.4%) compared with Whites (5.2%).
- This percentage was more than two times higher for Hispanics than for non-Hispanic Whites (10.8% compared with 5.1%).
- The percentage of patients whose families reported that they did not receive care consistent with their wishes was higher for hospice patients with less than a high school education compared with those who had any college education (10.1% compared with 4.6%).

Timeliness of hospice care

Research suggests that late referral to hospice results in unmet needs for some patients and caregivers.[73] Therefore, the perception of timeliness of referral is an indicator of adequacy of access to hospice care.

Figure 2.34 Hospice patient caregivers who perceived patient was NOT referred to hospice at the right time, by race, ethnicity, and education, 2007



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, 2007.

Denominator: Adult hospice patients.

Note: Caregivers were family members who interacted with hospice providers.

- Overall in 2007, 11.3% of hospice patient caregivers perceived hospice care was not referred at the right time (Figure 2.34).
- The percentage of caregivers who perceived hospice care was not referred at the right time was lower for Blacks than for Whites (8.9% compared with 11.7%).
- The percentage of caregivers who perceived hospice care was not referred at the right time was higher for AI/ANs than for Whites (12.7% compared with 11.7%).
- 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 (8.4%) and high school education (9.7%) than for caregivers with any college education (13.1%).
- The percentage of caregivers who perceived hospice care was not referred at the right time was higher for females than for males (12.7% compared with 8.8%; data not shown).

Patient Safety

Number of Americans who die each year from medical errors (1999 est.)	44,000-98,000[74]
Number of Americans who die in the hospital each year due to 18 types of medical injuries (2000 est.)	at least 32,000[75]
Rate of adverse drug reactions during hospital admissions	2.0%-6.7%[76,77,78,79]
Rate of adverse drug events among Medicare beneficiaries in ambulatory settings	50 per 1,000 person-years
Percentage of serious, life-threatening, or fatal events deemed preventable	40%
Cost (in lost income, disability, and health care costs) attributable to medical errors (1999 est.)	$17 billion-$29 billion74
Groups with higher rates of some adverse safety events	racial minorities[80,81]

Note: Statistics may vary from previous years due to revised and updated source statistics or addition of data sources.

In 1999, the IOM published *To Err Is Human*, which called for a national effort to reduce medical errors and increase patient safety.[74] The IOM defines patient safety as freedom from accidental injury due to medical care or medical errors.[74] In response to the IOM's report on patient safety, the President signed the Patient Safety and Quality Improvement Act of 2005 (Patient Safety Act) to spur the development of voluntary, provider-driven initiatives to improve the quality, safety, and outcomes of patient care. The act addresses many of the current barriers to improving patient care.

Measuring patient safety is complicated by difficulties assessing and ensuring the systematic reporting of medical errors and patient safety events. All too often, patient safety event reporting systems are laborious and cumbersome. Health care providers may also fear that if they participate in the analysis of medical errors or patient care processes, the findings may be used against them in court or harm their professional reputations. Many factors limit the ability to aggregate data in sufficient numbers to rapidly identify prevalent risks and hazards in the delivery of patient care, their underlying causes, and practices that are most effective in mitigating them. These include difficulties 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.[82]

This section highlights 10 measures of patient safety in three areas:

- Surgical complications.
- Other complications of hospital care.
- Complications of medications.

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

Surgical Complications

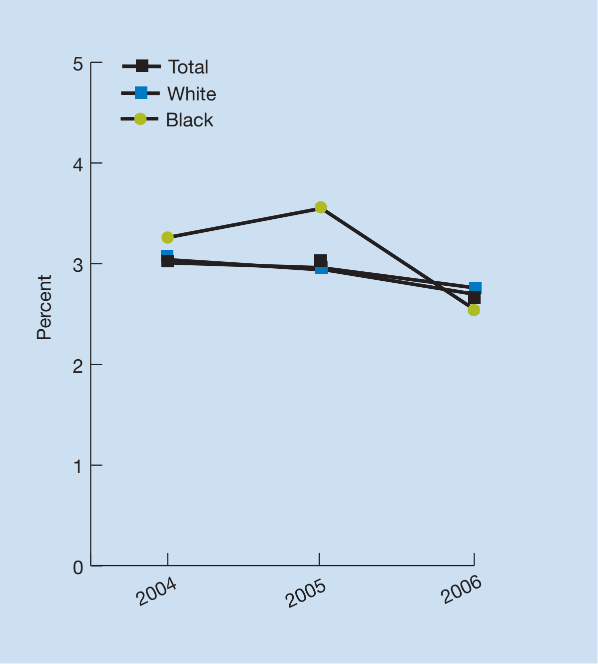
Adverse health events can occur during episodes of care, especially during and right after surgery. Although some surgical complications may be related to a patient's underlying condition, many can be avoided if adequate care is provided.

> *Safety improving but gains hard to measure: AHRQ—Modern Healthcare Daily Dose, March 3, 2008*

Postoperative Complications

Patients are vulnerable to a variety of complications soon after they undergo surgery. Complications may include, but are not limited to, pneumonia, urinary tract infection, and blood clots.

Figure 2.35. Composite measure: Medicare surgery patients with postoperative complications, by race, 2004-2006



Source: Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System, 2004-2006.

Denominator: Hospitalized Medicare patients having surgery, all ages.

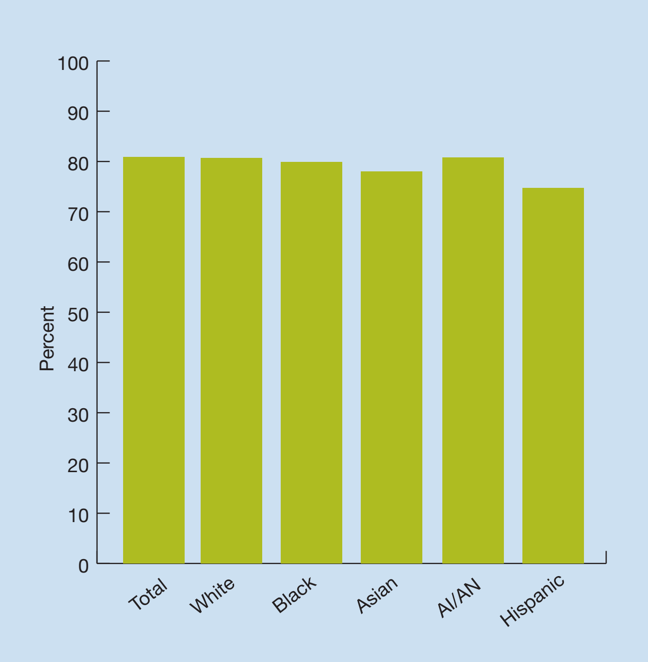
Note: Postoperative care complications included in this composite are postoperative pneumonia and venous thromboembolic event (blood clot). Note that this composite measure changed from 2004 to 2005, with the alteration of the complications of urinary tract infections being changed to catheter-associated urinary tract infections. Catheter-associated urinary tract infections was removed from this composite for 2006 data. Sensitivity analysis carried out on the composite shows that this change does not significantly alter the composite estimate. Data were unavailable for Asians, Native Hawaiians and Other Pacific Islanders, and American Indians and Alaska Natives.

- There were no statistically significant differences between Blacks and Whites in the percentage of hospital surgical patients with postoperative care complications (Figure 2.35).

Postoperative Wound Infections

Infections acquired during hospital stays (nosocomial infections) are among the most serious safety concerns. A common hospital-acquired infection is a wound infection following surgery. Hospitals can reduce the risk of wound infection after surgery by making sure patients get the right antibiotics at the right time on the day of their surgery. 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 a composite of two measures: receipt of antibiotics within 1 hour prior to surgical incision and discontinuation of antibiotics within 24 hours after end of surgery.

Figure 2.36. Composite measure: Adult surgery patients who received appropriate timing of antibiotics, by race/ethnicity, 2006



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

Source: Centers for Medicare & Medicaid Services, Medicare Quality Improvement Organization Program, 2006.

Denominator: Medicare patients age 18 and over having surgery.

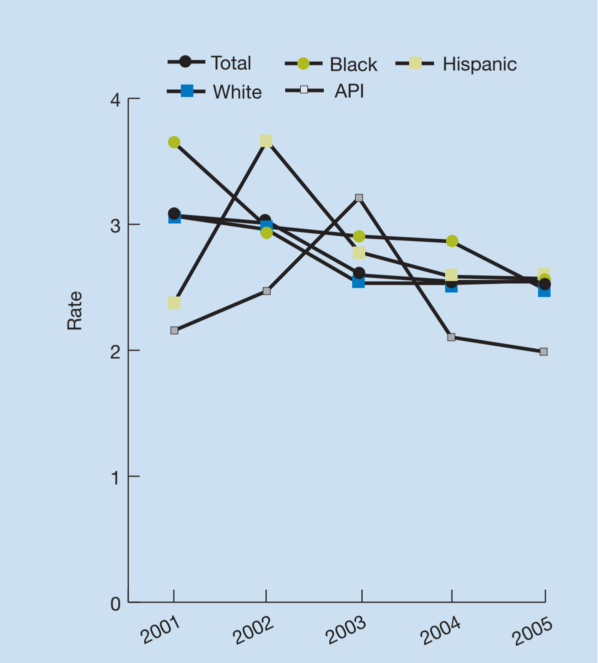
Note: Whites, Blacks, Asians, and AI/ANs are non-Hispanic groups. Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders. Appropriate timing of antibiotics received by adult surgical patients for all payers included in this composite are: (1) antibiotics started within 1 hour of surgery, and (2) antibiotics stopped within 24 hours after surgery.

- The percentage of appropriately timed antibiotics provided to surgery patients was significantly lower for Asians (78.0%) and Hispanics (74.7%) than for Whites (80.7%; Figure 2.36). There were no statistically significant differences for other groups.

Postoperative Wound Separation

Possible complications of abdominal and pelvic surgery include wound separation or rupture, involving all layers of the abdominal wall and the need for surgical reclosure. This can occur within 30 days of the procedure, typically between days 5 and 8. Separation is more likely to occur if wound infection is present and can lead to prolonged hospitalization and death.

Figure 2.37. Reclosure of postoperative abdominal wound separation per 1,000 abdominopelvic-surgery hospital discharges, adults age 18 and over, by race/ethnicity, 2001-2005



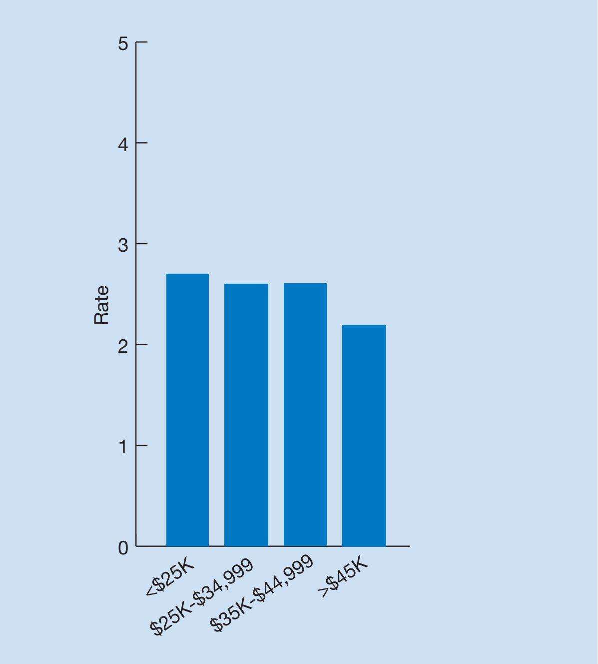
Key: API = Asian or Pacific Islander.

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2001-2005.

Denominator: Inpatient hospital abdominopelvic-surgery discharges, excluding obstetric conditions.

Note: White, Black, and API are non-Hispanic. 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 23 States that have 63% of the U.S. resident population.

Figure 2.38. Reclosure of postoperative abdominal wound separation per 1,000 abdominopelvic-surgery hospital discharges, adults age 18 and over, by income, 2005



Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, State Inpatient Databases disparities analysis file, 2001-2005.

Denominator: Inpatient hospital abdominopelvic-surgery discharges, excluding obstetric conditions.

Note: 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 23 States that have 63% of the U.S. resident population.

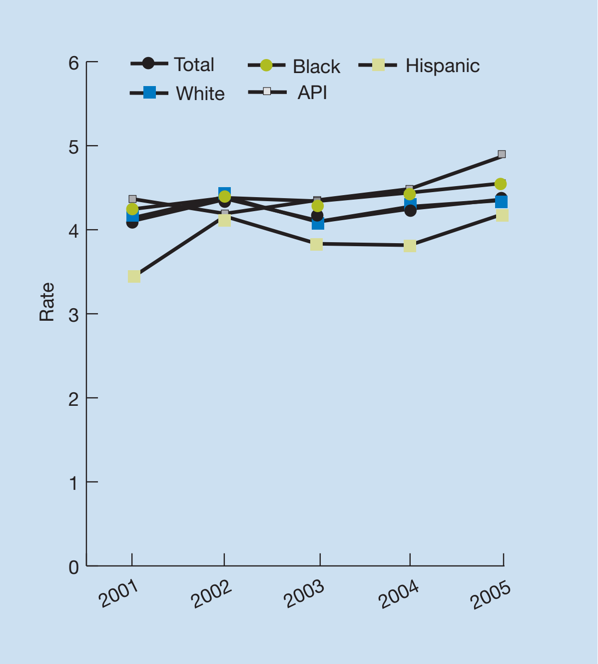
- From 2001 to 2005, the rate of postoperative abdominal wound separation during initial admissions decreased overall (Figure 2.37).

- There were no statistically significant differences between Whites and any racial or ethnic groups.
- There were also no statistically significant differences between high-income and other income groups.

Accidental Puncture or Laceration

Adverse events are possible during any surgery or procedure, including the nicking or cutting of bodily organs and blood vessels. This may be especially true in emergent situations, when, according to an expert panel review, some of these occurrences are not preventable. Puncture or laceration can lead to serious complications.

Figure 2.39. Accidental puncture or laceration during procedure per 1,000 discharges, adults age 18 and over, by race/ethnicity, 2001-2005



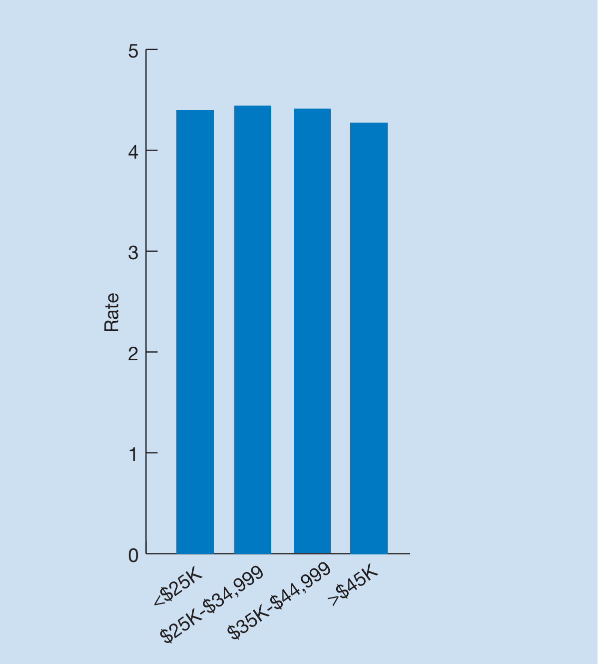
Key: API = Asian or Pacific Islander.

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2001-2005.

Denominator: Hospital medical and surgical discharges, excluding obstetric admissions.

Note: White, Black, and API are non-Hispanic. 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 23 States that have 63% of the U.S. resident population.

Figure 2.40. Accidental puncture or laceration during procedure per 1,000 discharges, adults age 18 and over, by income, 2005



Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2005.

Denominator: Hospital medical and surgical discharges, excluding obstetric admissions.

Note: 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 23 States that have 63% of the U.S. resident population.

- Overall, from 2001 to 2005, the rate of accidental puncture or laceration during a procedure increased (Figure 2.39). The rate increased for all racial and ethnic groups except non-Hispanic Whites.
- In 2005, the percentage of discharges of adults with accidental puncture or laceration during procedure was higher for APIs (4.9 per 1,000) than for non-Hispanic Whites (4.4 per 1,000).
- There were no statistically significant differences by income in the rate of accidental puncture or laceration (Figure 2.40).

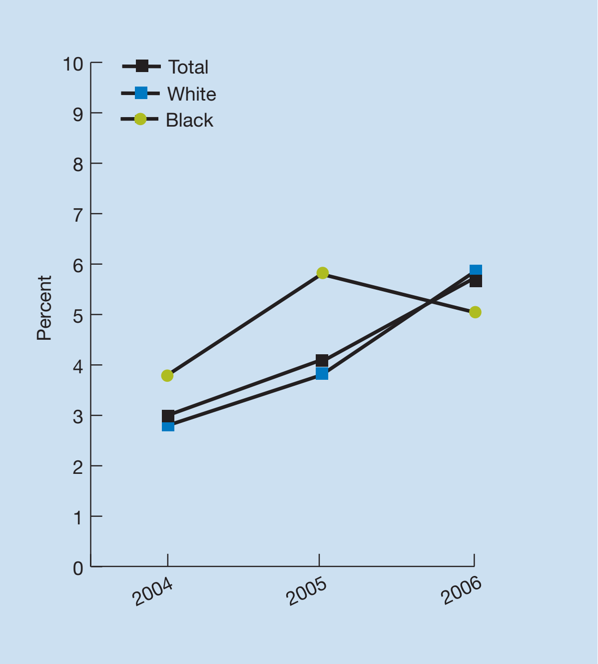
Other Complications of Hospital Care

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

Adverse Events Associated With Central Venous Catheters

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

Figure 2.41. Composite measure: Bloodstream infections (BSIs) or mechanical adverse events per 1,000 central venous catheter (CVC) placements, Medicare hospital patients, by race, 2004-2006



Source: Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System, 2004-2006.

Denominator: Hospitalized Medicare patients 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.

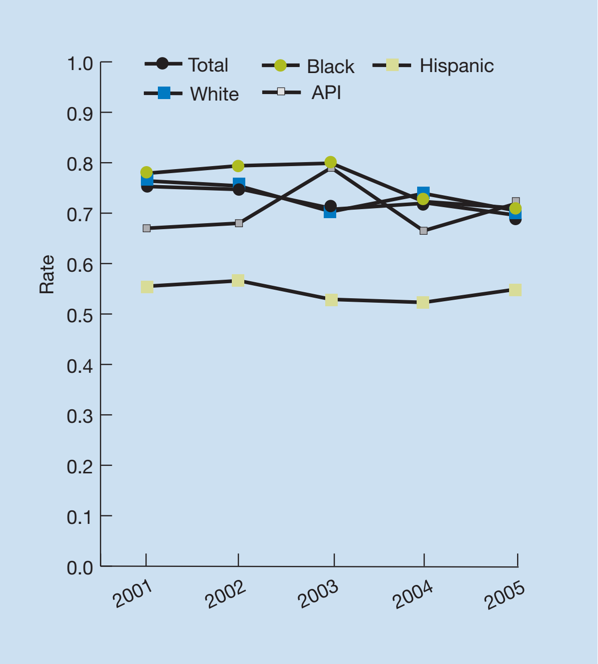
- No statistically significant disparities were observed between Blacks and Whites in rates of central venous catheter complications among hospital patients (Figure 2.41).
- From 2004 to 2006, the rate of central venous catheter complications increased significantly overall (from 3.0% to 5.8%).

Iatrogenic Pneumothorax

Iatrogenic pneumothorax is a partial or complete collapse of a lung, due to an accumulation of air in the pleural space (between the lungs and the chest wall) caused by medical care. This condition can be life threatening. This indicator is intended to track cases of pneumothorax caused by medical care.

Gap between Blacks and Whites in the rates of in-hospital death following complications of care decreased.

Figure 2.42. Iatrogenic pneumothorax per 1,000 hospital discharges, adults age 18 and over, by race/ethnicity, 2001-2005



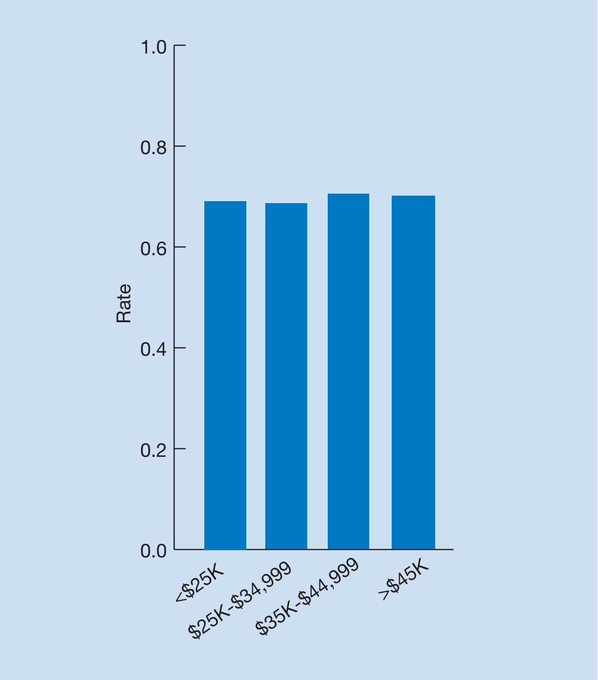
Key: API = Asian or Pacific Islander.

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2001-2005.

Denominator: All nonmaternity medical and surgical hospital discharges, excluding patients with trauma, thoracic surgery, lung or pleural biopsy, or cardiac surgery.

Note: White, Black, and API are non-Hispanic. 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 23 States that have 63% of the U.S. resident population.

Figure 2.43. Iatrogenic pneumothorax per 1,000 hospital discharges, adults age 18 and over, by income, 2005



Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2005.

Denominator: All nonmaternity medical and surgical hospital discharges, excluding patients with trauma, thoracic surgery, lung or pleural biopsy, or cardiac surgery.

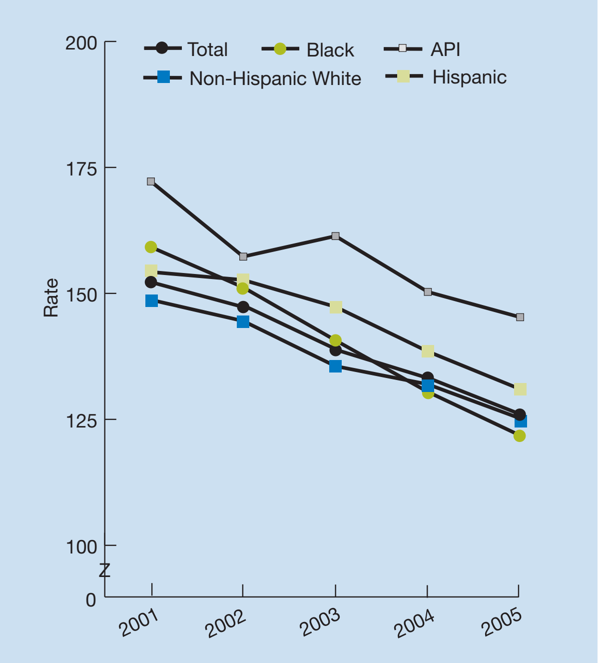
Note: Data are adjusted for age, gender, and diagnosis-related group clusters. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 23 States that have 63% of the U.S. resident population.

- From 2001 to 2005, the overall rate of iatrogenic pneumothorax decreased (Figure 2.42). The rate decreased for all groups except for Hispanics and Asians and Pacific Islanders. There were no statistically significant changes for income groups (data not shown).
- From 2001 to 2005, the gap between Hispanics and non-Hispanic Whites remained the same. In 2005, the percentage of hospital discharges for adults with iatrogenic pneumothorax remained lower for Hispanics than for non-Hispanic Whites (0.55 per 1,000 compared with 0.71 per 1,000).
- There were no other statistically significant differences by race or income (Figure 2.43).

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 2.44. Deaths per 1,000 discharges with complications potentially resulting from care (failure to rescue), adults ages 18-74, by race/ethnicity, 2001-2005



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, 2001-2005.

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. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 23 States that have 63% of the U.S. resident population.

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 23 States that have 63% of the U.S. resident population.

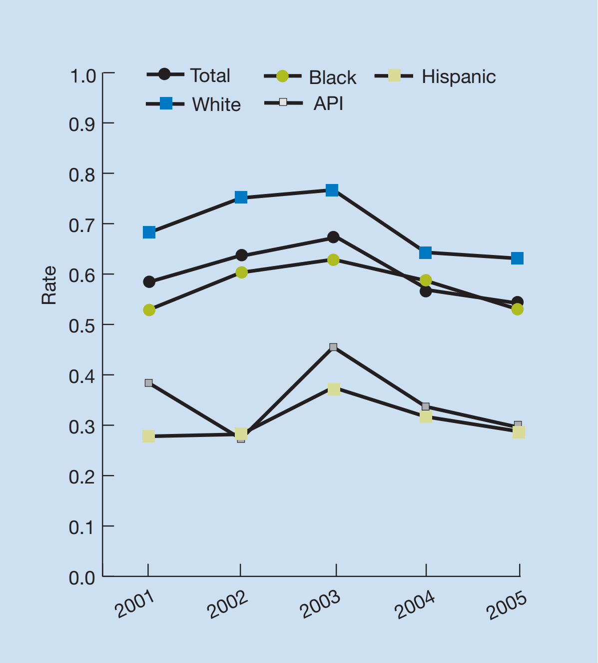
- From 2001 to 2005, there was significant improvement overall in the rates of in-hospital deaths following complications of care (from 152.2 per 1,000 in 2001 to 125.8 per 1,000 in 2005; Figure 2.44).

- During this period, the gap between Blacks and non-Hispanic Whites in the rates of in-hospital deaths following complications of care decreased. In 2005, there was no statistically significant difference between Blacks and non-Hispanic Whites.
- The gap between Hispanics and non-Hispanic Whites stayed the same. In 2005, Hispanics had a higher rate of in-hospital deaths following complications of care than non-Hispanic Whites (131.0 per 1,000 compared with 125.2 per 1,000).
- In 2005, there was no statistically significant difference between people living in communities with median household incomes of less than $25,000 and people living in communities with median household incomes of greater than $45,000 in the rate of deaths following complications of care (data not shown).

Deaths in Low-Mortality Diagnosis-Related Groups

Health care errors are more likely responsible for in-hospital deaths of patients admitted for low-risk illnesses or procedures than for deaths of high-risk patients.

Figure 2.45. Deaths per 1,000 admissions in low-mortality DRGs, adults age 18 and over, by race/ethnicity, 2001-2005



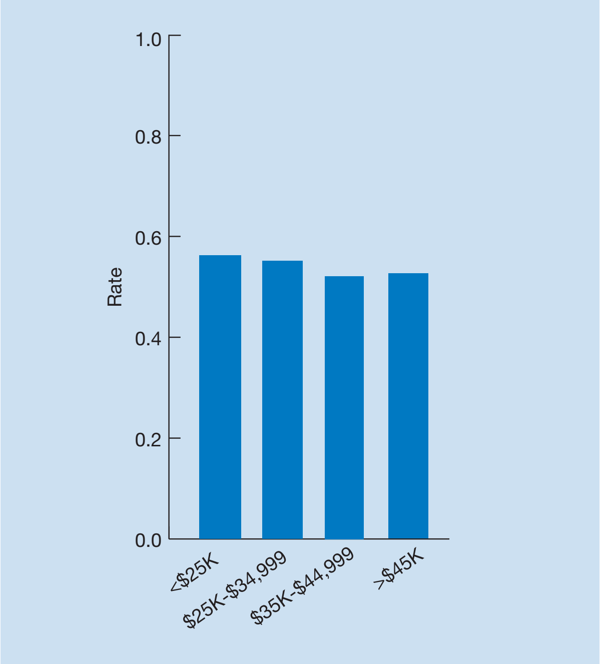
Key: API = Asian or Pacific Islander; DRG = diagnosis-related group.

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2001-2005.

Denominator: Hospital admissions in low-mortality diagnosis-related groups (DRGs), excluding trauma, immunocompromised, and cancer patients.

Note: White, Black, and API are non-Hispanic. Data are adjusted for age, gender, and DRG clusters. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 23 States that have 63% of the U.S. resident population.

Figure 2.46. Deaths per 1,000 admissions in low-mortality DRGs, adults age 18 and over, by income, 2005



Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2005.

Denominator: Hospital admissions in low-mortality diagnosis-related groups (DRGs), excluding trauma, immunocompromised, and cancer patients.

Note: Data are adjusted for age, gender, and DRG clusters. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 23 States that have 63% of the U.S. resident population.

- From 2001 to 2005, there were no statistically significant changes in the rate of deaths in low-mortality diagnosis-related groups (DRGs) (Figure 2.45).
- In 2005, the rate of deaths in low-mortality DRGs was lower for Hispanics than for non-Hispanic Whites (0.29 per 1,000 compared with 0.63 per 1,000).
- While APIs have consistently had a lower rate of deaths in low-mortality DRGs, these were not significantly different from Whites.
- There were no other statistically significant differences by race or income (Figure 2.46).

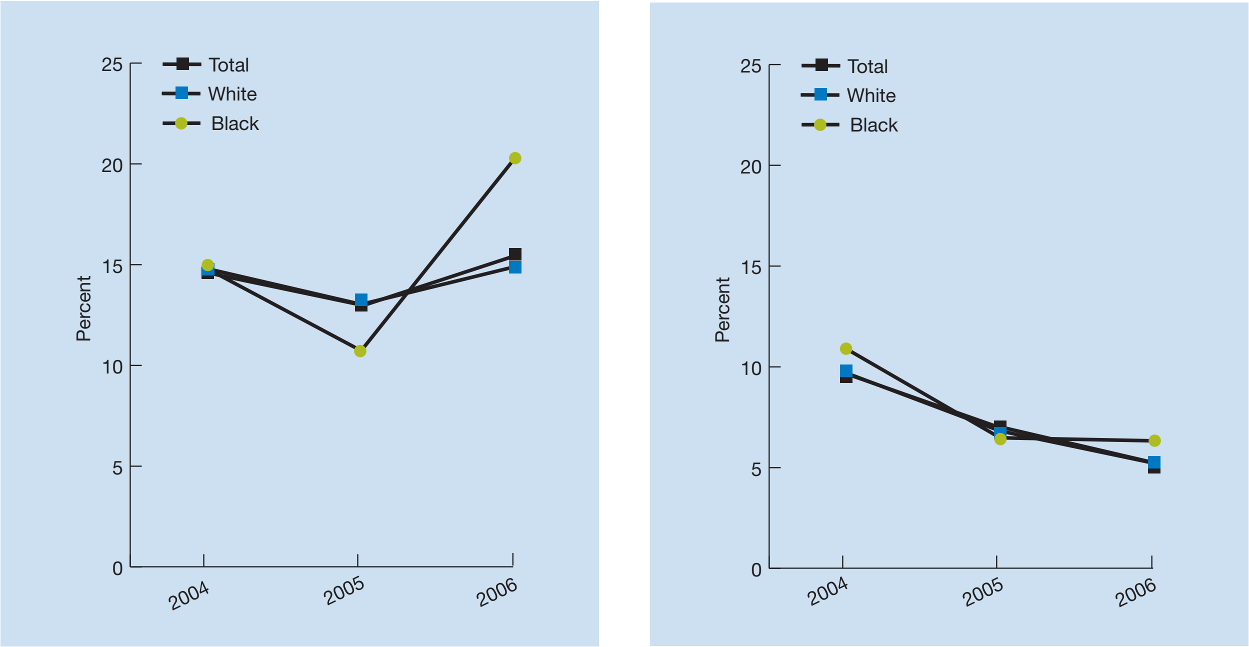
Complications of Medications

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.

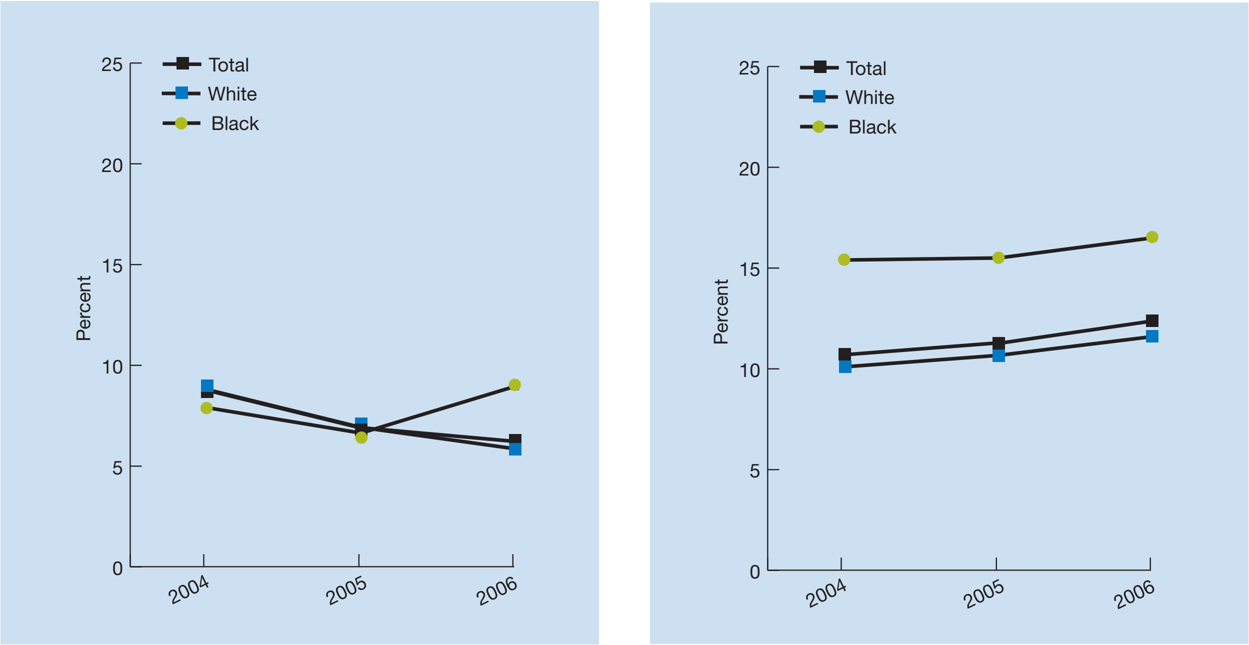
Adverse Drug Events in the Hospital

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 2.47. Medicare hospital patients with medication-related adverse drug events, by race, 2004-2006


Intravenous heparin

Low-molecular-weight heparin


Warfarin

Insulin

Source: Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System, 2004-2006.

Denominator: Random sample of Medicare medical records of patients receiving 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 2006, between 5.2% and 15.5% of hospitalized Medicare patients overall experienced an adverse drug event in the hospital, depending on the type of drug (Figure 2.47).
- From 2004 to 2006, there was no change in the percentage of patients taking intravenous heparin who experienced an adverse drug event. There was also no statistically significant difference between Blacks and Whites.
- From 2004 to 2006, the percentage of patients taking low-molecular-weight heparin who experienced an adverse drug event decreased for all groups. However, Blacks were still more likely than Whites to have an adverse event (6.3% compared with 5.2%).
- From 2004 to 2006, the percentage of patients taking warfarin who experienced an adverse drug event decreased overall except for Blacks. Blacks were more likely to experience an adverse drug event than Whites (9.0% compared with 5.9%).
- From 2004 to 2006, the percentage of patients taking insulin or hypoglycemics who experienced an adverse drug event increased. There was no statistically significant difference between Blacks and Whites.

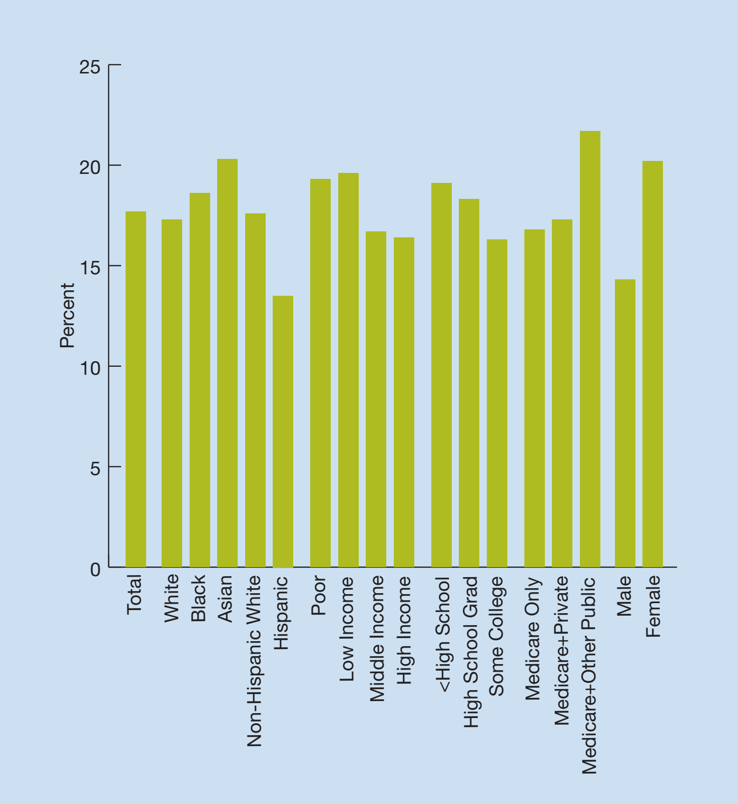
Potentially Inappropriate Medication Prescriptions for Older Patients

Some drugs that are appropriate for some patients are considered potentially harmful for older patients but are still prescribed to them.[83,xx] Inappropriate medication use by older patients includes drugs that should often be avoided for these patients.

> *Quarter of disabled seniors use risky medications—HealthDay, May 7, 2008*

[xx] Eleven drugs that should always be avoided for older patients include barbiturates, flurazepam, meprobamate, chlorpropamide, meperidine, pentazocine, trimethobenzamide, belladonna alkaloids, dicyclomine, hyoscyamine, and propantheline. Twenty-two drugs that should often 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.

Figure 2.48. Adults age 65 and over who received potentially inappropriate prescription medicines in the calendar year, by race, ethnicity, income, education, insurance status, and gender, 2005



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2005.

Reference population: Civilian noninstitutionalized population age 65 and over.

Note: Data were insufficient for this analysis for Native Hawaiians 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 2005, older Asians were more likely than older Whites to have inappropriate drug use (20.3% compared with 17.3%; Figure 2.48).
- Older Hispanics were less likely than older non-Hispanic Whites to have inappropriate drug use (13.5% compared with 17.6%).
- Older women were more likely than older men to have inappropriate drug use (20.2% compared with 14.3%).
- There were no statistically significant differences by income or education.

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.[84,85] For example, stroke patients' mortality and long-term disability are largely influenced by the timeliness of therapy.[86,87] Timely delivery of appropriate care can also help reduce mortality and morbidity for chronic conditions such as chronic kidney disease,[88] and timely antibiotic treatments are associated with improved clinical outcomes.[89] 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.[90]

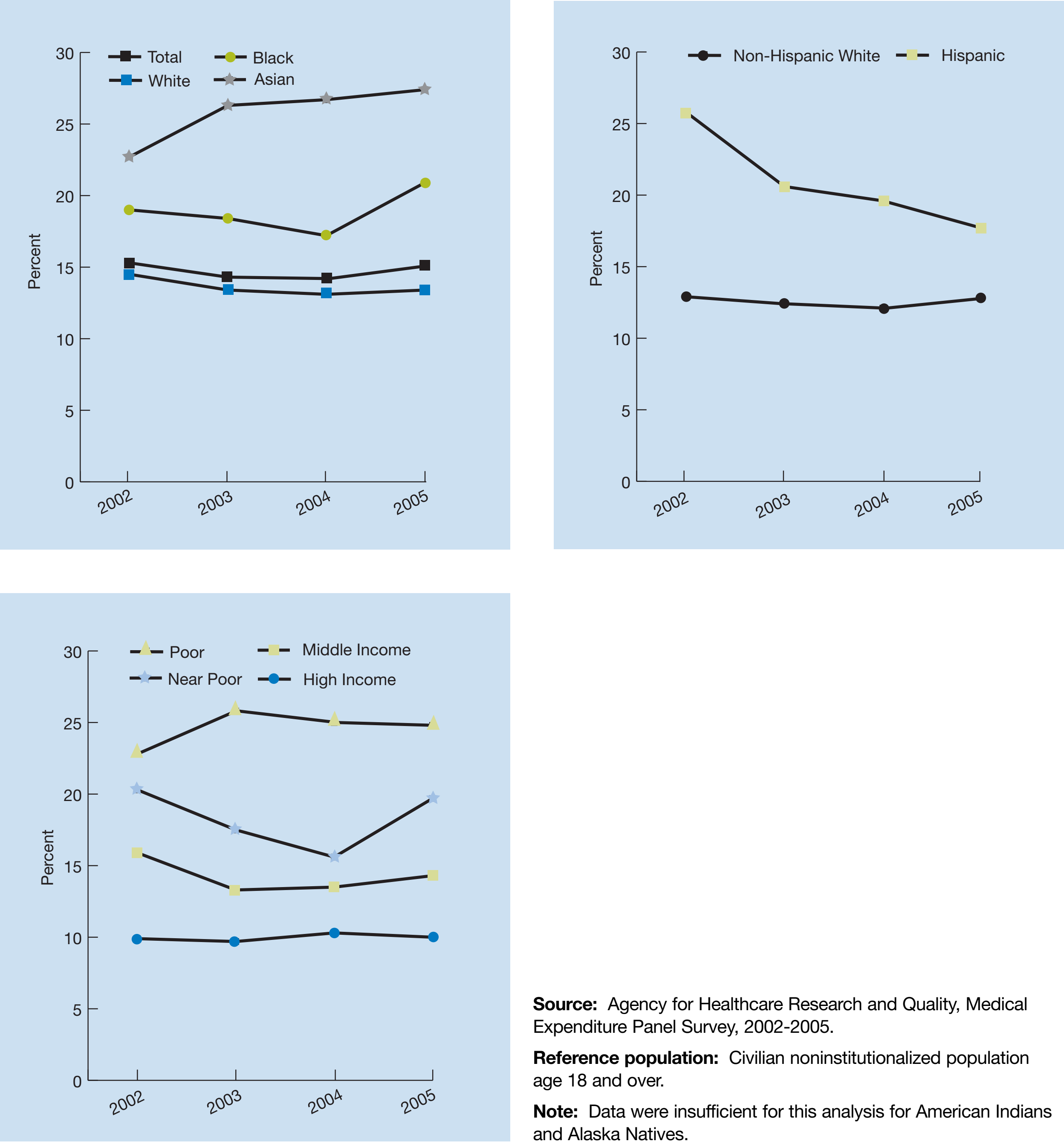
Early care for comorbid conditions has been shown to reduce hospitalization rates and costs for Medicare beneficiaries.[91] Some research suggests that, over the course of 30 years, the costs of treating diabetic complications can approach $50,000 per patient.[92] Timely outpatient care can reduce admissions for pediatric asthma, which account for $1.25 billion in total hospitalization charges annually.[93] The measures of timeliness highlighted in this section are getting care for illness or injury as soon as wanted and emergency department visits in which patients left without being seen. (For findings related to all core measures of timeliness, go 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.

In 2005, Asians were twice as likely as Whites to report problems getting care as soon as wanted.

Figure 2.49. 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 (top left), ethnicity (top right), and income (bottom left), 2002-2005



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2005.

Reference population: Civilian noninstitutionalized population age 18 and over.

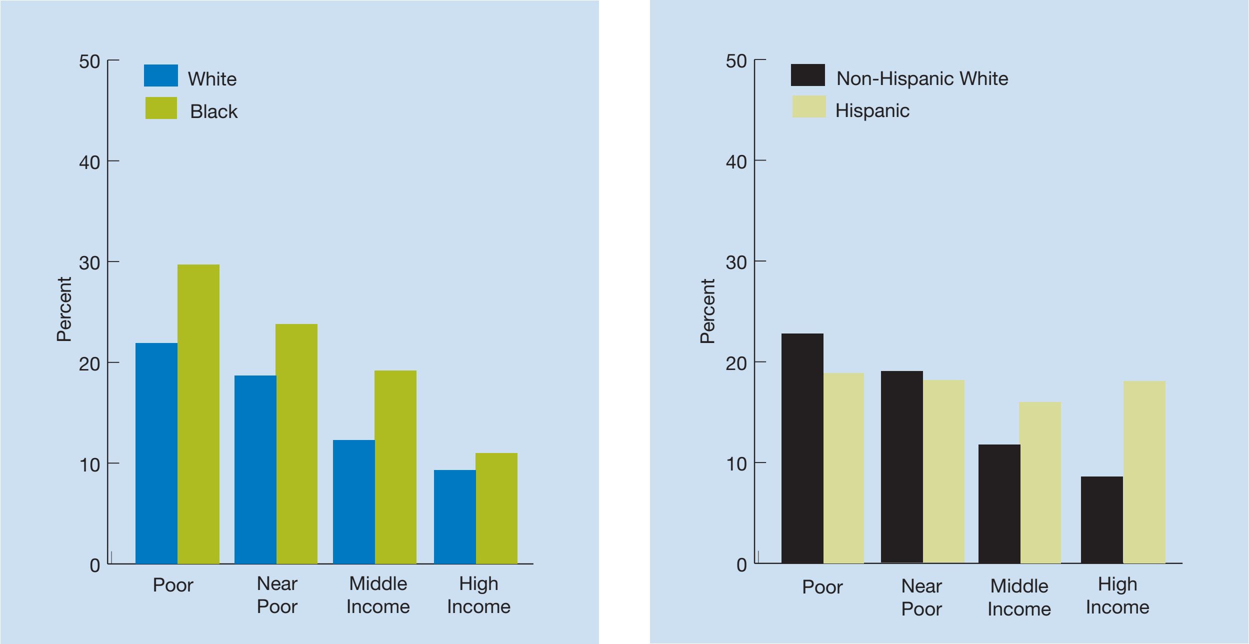
Note: Data were insufficient for this analysis for American Indians and Alaska Natives.

- From 2002 to 2005, the gap between Blacks and Whites in the percentage of adults who reported sometimes or never getting care for illness or injury as soon as wanted remained the same (Figure 2.49). In 2005, Blacks fared worse than Whites on this measure of timeliness (20.9% compared with 13.4%).

- From 2002 to 2005, the gap between Asians and Whites also remained the same. In 2005, Asians were twice as likely as Whites to report problems getting care as soon as wanted (27.4% compared with 13.4%).
- During this period, the gap between Hispanics and non-Hispanic Whites in the percentage of adults who reported delayed care decreased. However, in 2005, Hispanics remained more likely than non-Hispanic Whites to report problems getting care as soon as wanted (17.7% compared with 12.8%).
- During this period, the gap between poor and high-income people remained the same on this measure. In 2005, poor adults were about 2½ times as likely as high-income adults to report problems getting care as soon as wanted (24.8% compared with 10.0%).

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

Figure 2.50. 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 (left) and ethnicity (right), stratified by income, 2005

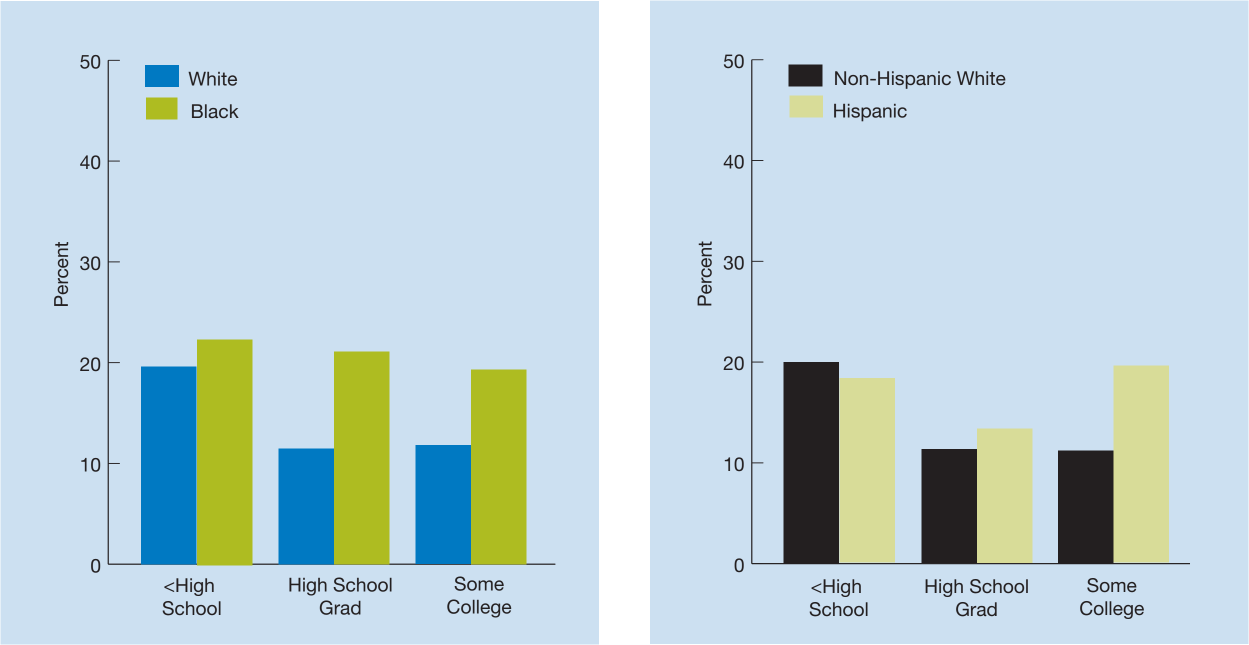


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2005.

Reference population: 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 2.51. 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 race (left) and ethnicity (right), stratified by education, 2005



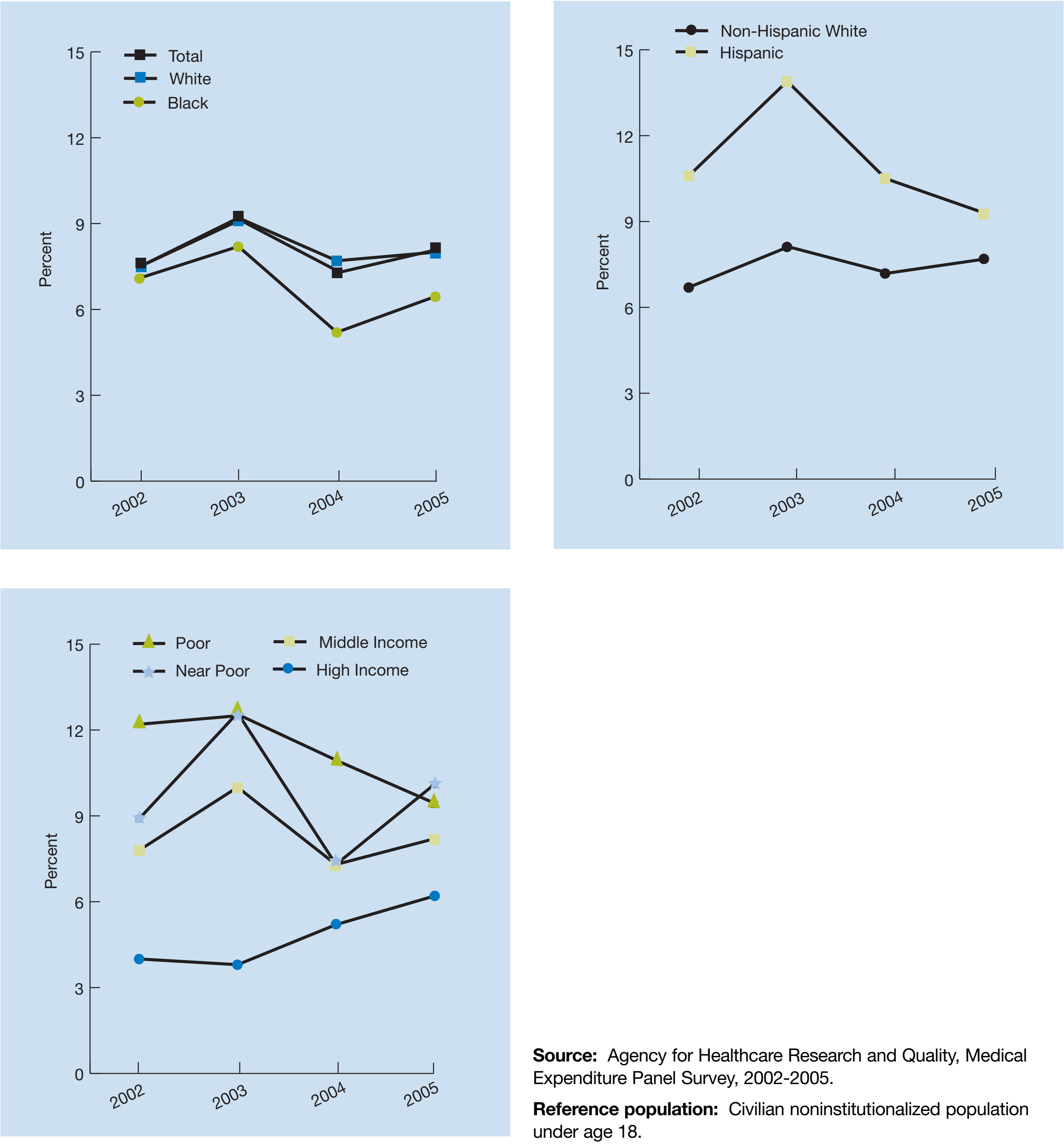
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2005.

Reference population: 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.

- SES explains some but not all of the ethnic differences in timeliness of primary care (Figures 2.50 and 2.51).
- After stratification by income, high-income Hispanics were still more than twice as likely as high-income non-Hispanic Whites to report problems getting care as soon as wanted (18.1% compared with 8.6%).
- After stratification by education, Blacks with a high school education and at least some college education were still almost twice as likely as Whites of the same education level to report problems getting care as soon as wanted (21.1% compared with 11.5% for high school graduates, and 19.3% compared with 11.8% for people with at least some college education).
- After stratification by education, among people with some college, Hispanics were almost twice as likely as non-Hispanic Whites to report problems getting care as soon as wanted (19.5% compared with 11.2%).

Figure 2.52. 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 (top left), ethnicity (top right), and income (bottom left), 2002-2005



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2005.

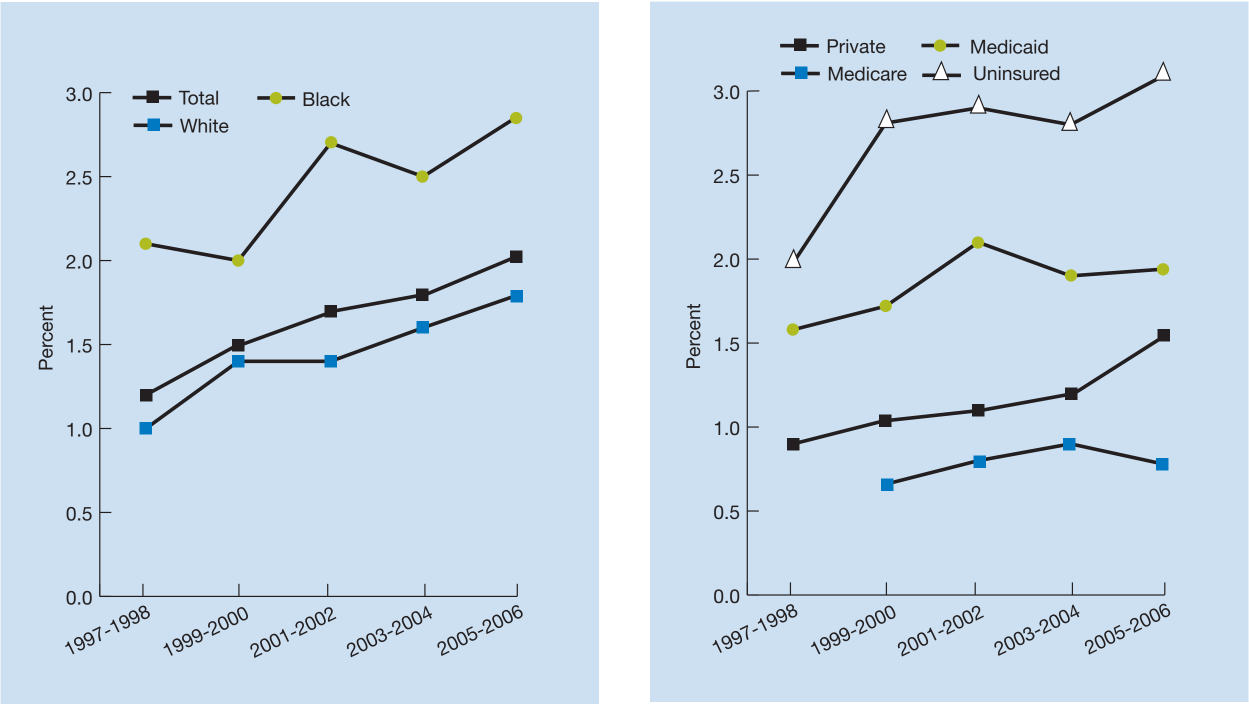
Reference population: Civilian noninstitutionalized population under age 18.

- From 2002 to 2005, there were no statistically significant changes in the percentage of children whose parents reported problems getting care as soon as wanted (Figure 2.52).
- There were no statistically significant differences observed between Blacks and Whites, between Hispanics and non-Hispanic Whites, and between poor and high-income children.

Emergency Department Visits in Which Patients Left Without Being Seen

In 2004, patients who had an emergency department (ED) visit in the United States spent an average of 3.3 hours in the ED, with 47 minutes spent waiting to be seen by a physician.[94] This may reflect the 18% increase in ED visit volumes over the past 10 years, as the number of ED facilities has decreased by 12.4%.[94] There are many reasons that a patient seeking care in an ED may leave without being seen, but long waits tend to explain many departures.

Figure 2.53. Emergency department (ED) visits in which patients left without being seen, by race (left) and payment source (right), 1997-1998, 1999-2000, 2001-2002, 2003-2004, and 2005-2006



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey, 1997-1998, 1999-2000, 2001-2002, 2003-2004, and 2005-2006.

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

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

- Between 1997-1998 and 2005-2006, the overall percentage of ED visits in which the patient left without being seen almost doubled, from 1.2% to 2.0% (Figure 2.53).
- During this period, the gap between Blacks and Whites increased. In 2005-2006, Blacks were more likely to leave without being seen than Whites (2.9% compared with 1.8%).
- During this period, the percentage of ED visits in which Medicaid patients left without being seen remained the same and was higher than it was among patients with private insurance (in 2005-2006, 1.9% compared with 1.6%).
- During this period, the gap between uninsured patients and patients with private insurance remained the same. Uninsured patients were about twice as likely to leave without being seen as patients with private insurance (3.1% compared with 1.6%).
- Medicare patients were the least likely to leave the ED without being seen.

Uninsured patients were about twice as likely to leave the emergency department without being seen as patients with private insurance.

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.[95]

Patient centeredness "encompasses qualities of compassion, empathy, and responsiveness to the needs, values, and expressed preferences of the individual patient."[2]

Patient-centered care is supported by good patient-provider communication so that patients' needs and wants are understood and addressed, and patients understand and participate in their own care.[95,96,97,98] This style of care has been shown to improve patients' health and health care.[96,97,99,100,101] Unfortunately, there are barriers to good communication.

About one-third of Americans are not "health literate,"[102,103] which means they lack the "capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."[104] They experience many difficulties, including:

- Less preventive care.[105]
- Poorer understanding of their conditions and care.[102,106,107]
- Higher use of emergency and inpatient services and higher rates of rehospitalization.[108,109]
- Lower adherence to medications.[108]
- Lower participation in medical decisionmaking.[110]

Low health literacy costs an estimated $29 billion to $69 billion per year.[111] Providers also differ in communication proficiency, including varied listening skills and views of symptoms and treatment effectiveness compared with their patients' views.[112]

When health care is patient centered, both underuse and overuse of medical services are reduced,[113] as are strains on system resources and costs through fewer diagnostic tests and referrals.[99] Additional factors influencing patient centeredness and patient-provider communication include:

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

Efforts to remove these possible impediments to patient centeredness are underway. For example, the Office of Minority Health, part of the Department of Health and Human Services, 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.[114,xxi] These modules are based on the National Standards on Culturally and Linguistically Appropriate Services (CLAS). These standards are directed at health care organizations and aim to improve the patient centeredness of care for people with limited English proficiency (LEP). 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 the failure of a recipient of Federal financial assistance to take reasonable steps to provide LEP persons with a meaningful opportunity to participate in HHS-funded programs may violate the prohibition under Title VI of the Civil Rights Act of 1964, 42 U.S.C. 2000d, against national origin discrimination.[115]

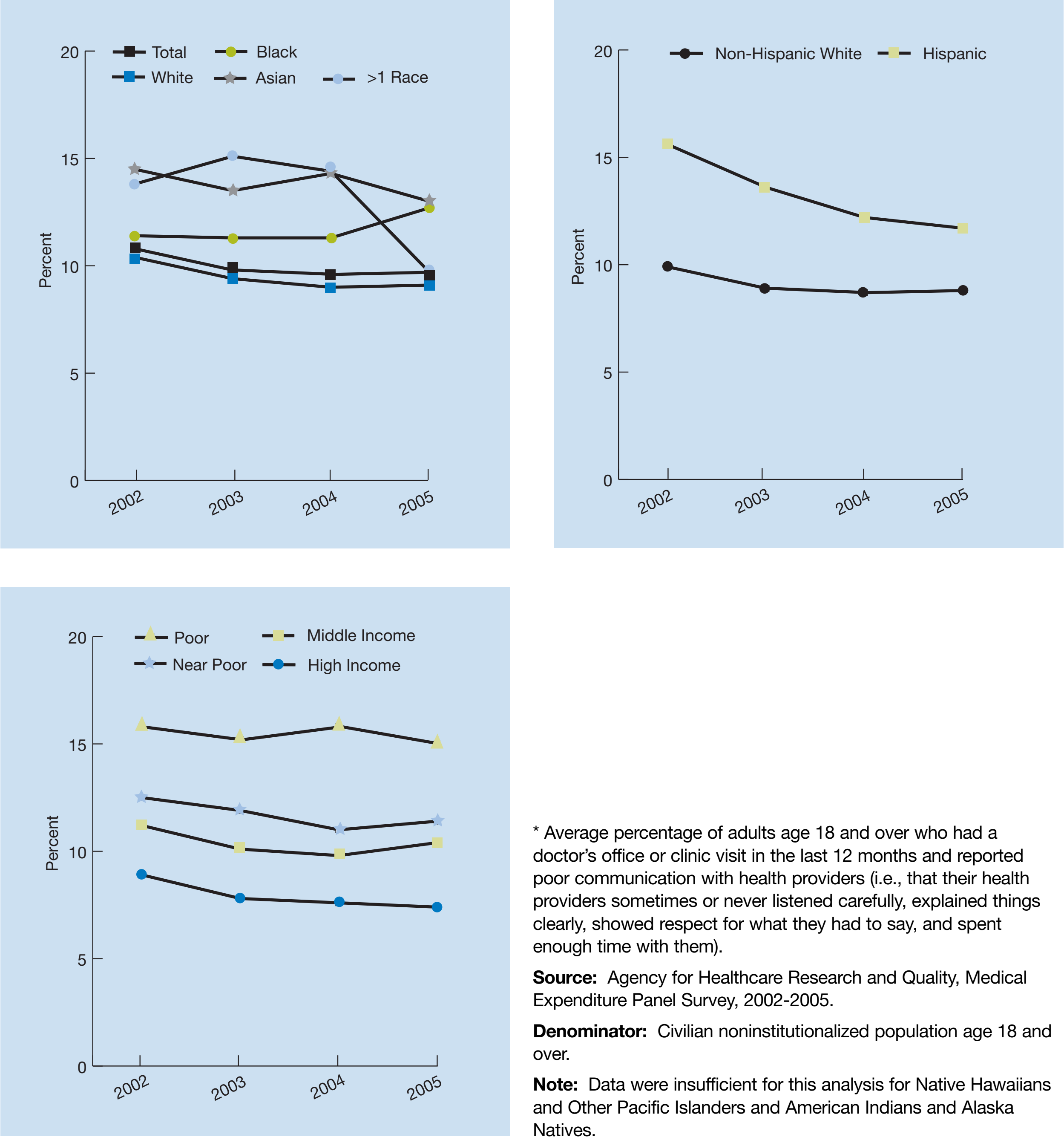
The NHDR includes one core measure of patient centeredness—a composite measure on the patient experience of care—and two new supplemental measures. Because having a diverse workforce of health care providers may be an important component of patient-centered health care for many patients, this year's report includes a new supplemental measure of workforce diversity—race/ethnicity of the Nation's licensed practical nurse workforce. A supplemental measure focusing on health literacy of U.S. adults is also presented in Chapter 4. (For findings related to all core measures of patient centeredness, go to Tables 2.3a and 2.3b.)

Patients' Experience of Care

Using methods developed for the CAHPS® (Consumer Assessment of Healthcare Providers and Systems) survey,[116] the NHDR uses a composite measure that combines four measures of patient-provider communication into a single core measure: providers who sometimes or never listen carefully, explain things clearly, respect what patients say, and spend enough time with patients.

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

Figure 2.54. Composite measure: Ambulatory patients age 18 and over who reported poor communication with health providers,* by race (top left), ethnicity (top right), and income (bottom left), 2002-2005



* 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, 2002-2005.

Denominator: Civilian noninstitutionalized population age 18 and over.

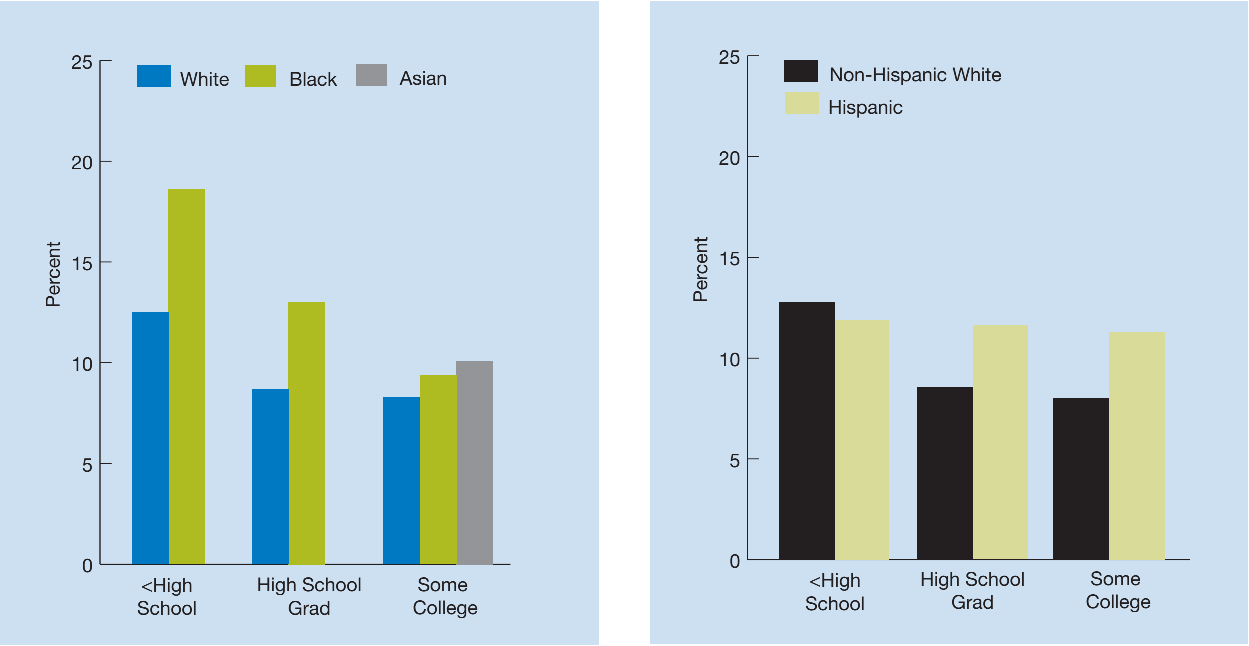
Note: Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders and American Indians and Alaska Natives.

- From 2002 to 2005, the gap between Blacks and Whites and between Asians and Whites on this measure increased. In 2005, Blacks and Asians were more likely than Whites to report poor communication with their health providers (12.7% for Blacks and 13.0% for Asians compared with 9.1% for Whites; Figure 2.54).

- The gap between Hispanics and non-Hispanic Whites in the percentage of adults who reported poor communication with their health providers decreased from 2002 to 2005. However, in 2005, the percentage was higher for Hispanics than for non-Hispanic Whites (11.7% compared with 8.8%).
- The gap between poor and high-income people increased. In 2005, the percentage of adults who reported poor communication was higher for poor people than for high-income people (15.0% compared with 7.4%).

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

Figure 2.55. Composite measure: Adult ambulatory patients who reported poor communication with health providers,* by race (left) and ethnicity (right), stratified by education, 2005



* 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, 2005.

Denominator: Civilian noninstitutionalized population age 18 and over.

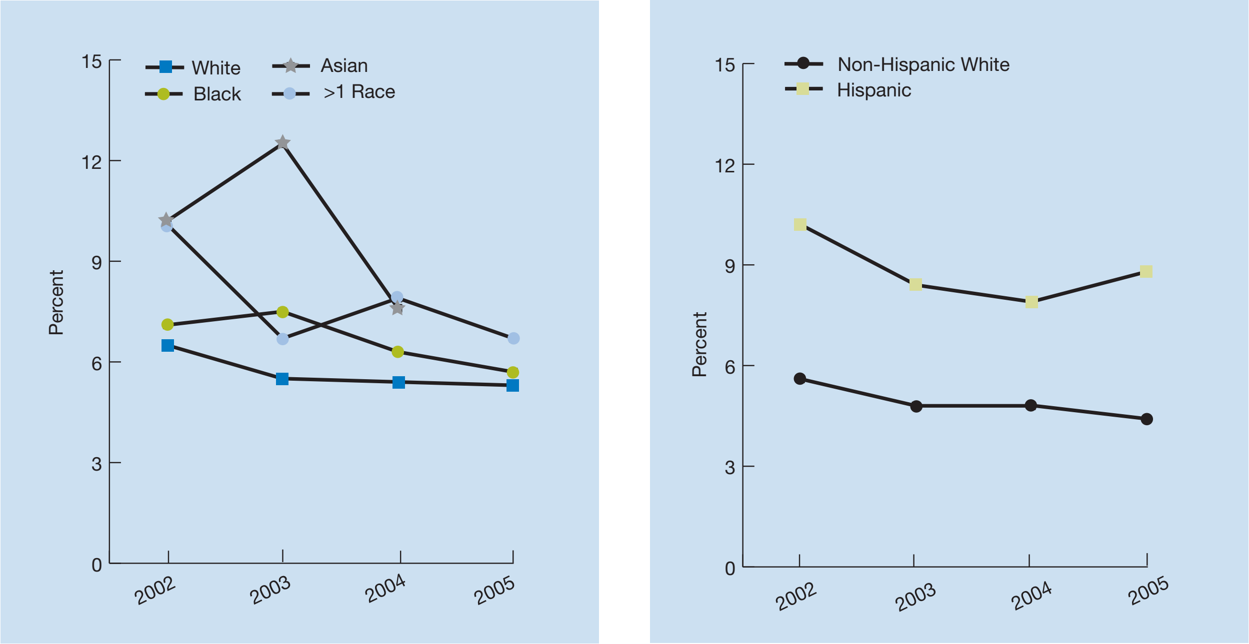
Note: Sample sizes were too small to provide estimates for Asians with less than a high school education and Asian high school graduates.

- SES explains some but not all of the racial and ethnic differences in patient-provider communication for patients age 18 and over (Figure 2.55).
- Among high school graduates, Blacks (13.0%) were more likely than Whites (8.7%) and Hispanics (11.6%) were more like than non-Hispanic Whites (8.5%) to report poor communication with their health providers.

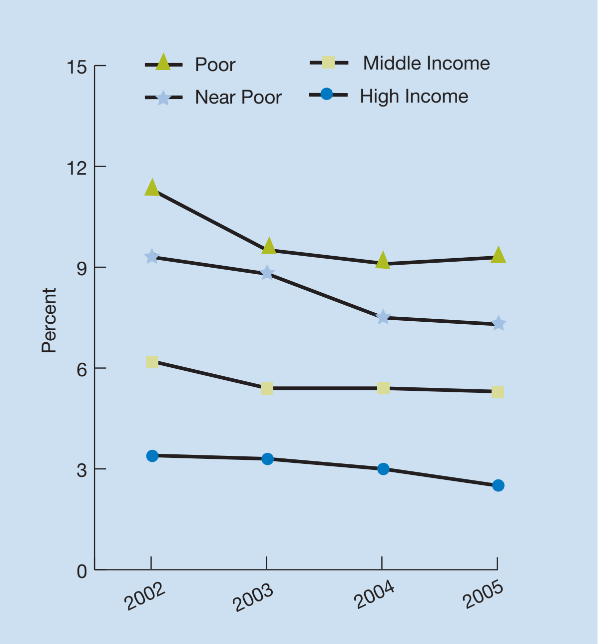
- Among people with less than a high school education, Blacks were more likely than Whites to report poor communication with their health providers (18.6% compared with 12.5%).

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, and 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 2.56. Composite measure: Children with ambulatory visits whose parents reported poor communication* with health providers, by race (left), ethnicity (right), and family income (next page top), 2002-2005



Blacks and Asians were more likely than Whites to report poor communication with their health providers.



* 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, 2002-2004.

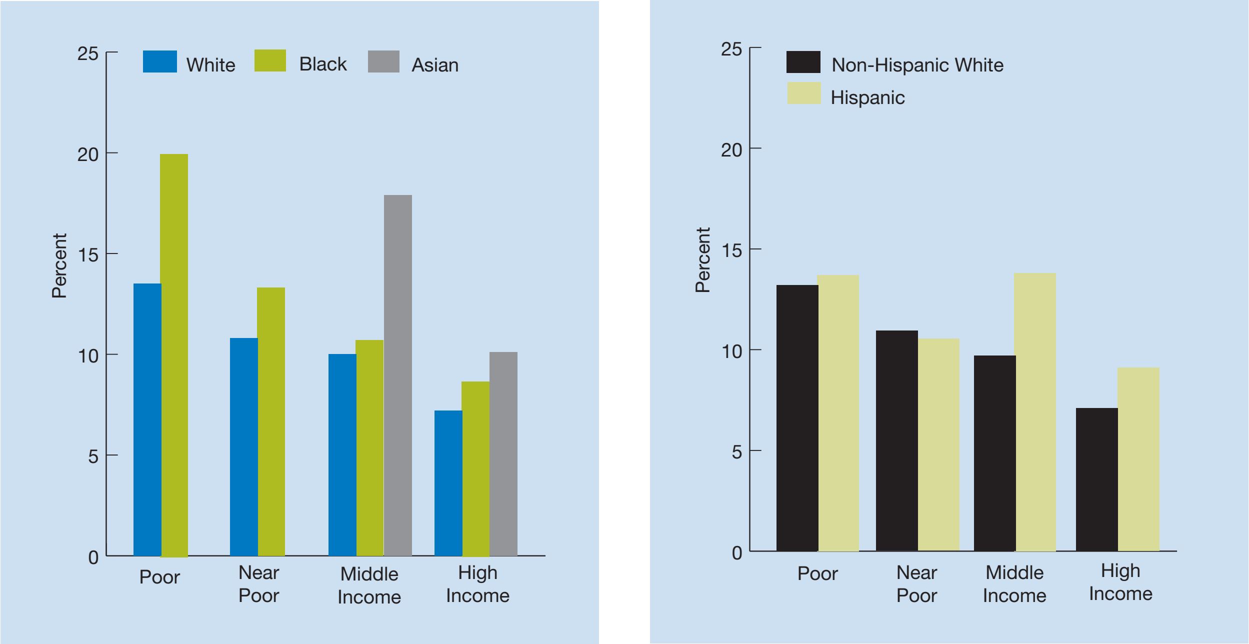
Denominator: Civilian noninstitutionalized population under age 18.

Note: Average percentage of children 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., 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). Data for Asians (2005 only) and 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 5.5% in 2005 (data not shown).
- In 2005, there were no statistically significant differences between Blacks and Whites in the percentage of children whose parents or guardians reported poor communication with their health providers.
- From 2002 to 2005, the gap between Hispanics and non-Hispanic Whites in the percentage of children whose parents or guardians reported poor communication with their health providers decreased (Figure 2.56). However, in 2005, the percentage was still two times higher for Hispanics than for non-Hispanic Whites (8.8% compared with 4.4%).
- The gap between poor people and high-income people in the percentage with poor communication decreased. However, in 2005, the percentage was still significantly higher for poor (9.3%), near-poor (7.3%), and middle-income (5.3%) people than for high-income people (2.5%).

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

Figure 2.57. Composite measure: Children with ambulatory visits whose parents reported poor communication with health providers, by race (left) and ethnicity (right), stratified by income, 2005*



* 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, or spent enough time with them.

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2005.

Denominator: Civilian noninstitutionalized population under age 18.

Note: Sample sizes were too small to provide estimates for poor and near-poor Asians. The seemingly large difference between middle-income Asians and Whites is not statistically significant due to small sample sizes.

- SES explains some but not all of the racial and ethnic differences in patient-provider communication for patients under age 18 (Figure 2.57).
- In 2005, among poor people, Blacks were more likely than Whites to report poor communication with their health providers (20.0% compared with 13.5%).
- Among people with middle income, Hispanics were more likely than non-Hispanic Whites to report poor communication with their health providers (13.8% compared with 9.7%).

Diversity of the Nurse 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.[117] Minority providers are more likely than their White colleagues to practice in underserved minority communities.[118,119] Health care workforce diversity 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.

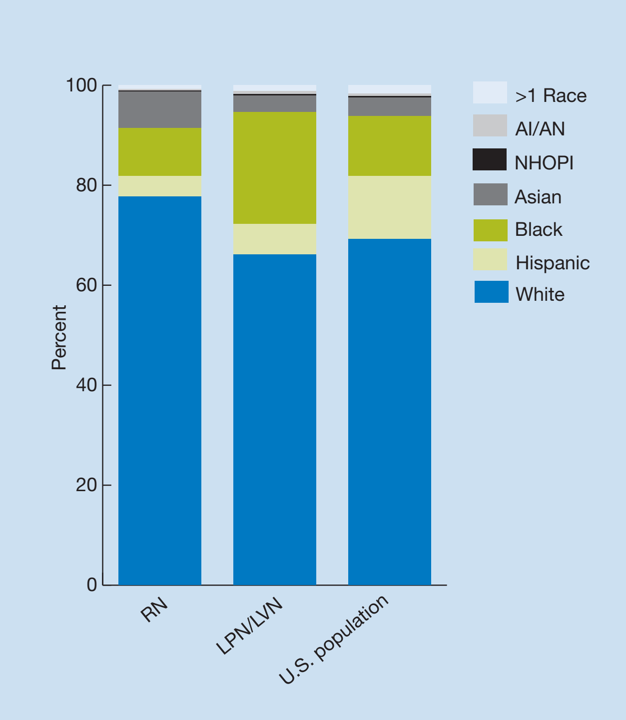
Diversity increases the opportunities for race- and language-concordant health care visits. It also can improve cultural competency at the system, organization, and provider levels in several ways. These include appropriate program design and policies, organizational commitment to culturally competent care, and cross-cultural education of colleagues.[120] 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 RN workforces. This year, the NHDR presents data on diversity in the licensed practical nurse (LPN) workforce.

LPNs, known as licensed vocational nurses (LVNs) in California and Texas, provide patient care under the supervision of physicians and registered nurses (RNs). Their scope of practice varies by State but may include duties such as providing basic bedside care, assisting patients in daily living activities, performing routine laboratory tests, monitoring patient response to medications or treatments, and gathering patient information.

Compared with RNs, LPNs are less likely to work in hospitals and more likely to work in long-term and personal care settings. Practical training programs are typically shorter than RN programs and are therefore less costly to trainees seeking licensure. In May 2006, the median income of LPNs was approximately $20,000 less than that of RNs. As the U.S. population ages and overall demand for health care services increases, employment of LPNs is expected to grow faster than the average for all occupations, particularly in long-term care facilities. Increases in hiring and in LPN-to-RN programs may also help alleviate the national RN shortage.[121,122]

Figure 2.58. U.S. nurse professionals compared with the U.S. population, by race/ethnicity, 2000



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

Source: U.S. Census 2000 and U.S. Census Bureau American Community Survey, 2000.

Note: All racial groups are non-Hispanic.

- Of the RNs in the United States, 77.7% were White; 66.1% of LPNs/LVNs in the United States were White (Figure 2.58).
- Relative to the U.S. population, Blacks were overrepresented in the LPN workforce, while Hispanic individuals were underrepresented.
- In contrast, Whites and Asians were overrepresented in the RN workforce. The percentage of Hispanics in the RN workforce (4.1%) was even smaller than the percentage in the LPN/LVN workforce (6.1%).

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

Core Report Measure	Racial Difference[i]					Ethnic Difference[ii]
	Black	Asian	NHOPI	AI/AN	>1 Race	Hispanic
Cancer						
Adults age 50 and over who received 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[v] deaths per 100,000 population per year	↓	↑		↑		↑
Diabetes						
Composite: Adults with diabetes who had hemoglobin A1c measurement, dilated eye exam, and foot exam in the calender year[vi]	=					↓
Hospital admissions for lower extremity amputations in patients per 1,000 population with diabetes age 18 and over[vii]	↓					
End Stage Renal Disease						
Adult hemodialysis patients with adequate dialysis[viii]	↓	↑		=		↑
Dialysis patients under age 70 who were registered on a waiting list for transplantation[ix]	=	↑		=		=

[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, 2005. 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, 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.
[vi] Source: Medical Expenditure Panel Survey, 2005.
[vii] Source: National Hospital Discharge Survey, 2003-2006. This source did not collect information for >1 race. Missing rates preclude analysis by ethnicity.
[viii] Source: CMS End Stage Renal Disease Clinical Performance Measures Project, 2006.
[ix] U.S. Renal Data System, 2004. 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						
Adults with obesity who ever received advice to exercise more	=				=	↓
Adult current smokers who received advice to quit smoking[iii]	=					=
Composite: Hospital patients with heart attack who received recommended hospital care[iv]	=	=		=		↓
Deaths per 1,000 adult hospital admissions with acute myocardial infarction[v]	↑	=				=
Composite: Hospital patients with heart failure who received recommended hospital care[iv]	↑	=		↓		=

[i] Compared with Whites.

[ii] Compared with non-Hispanic Whites.

[iii] Source: Medical Expenditure Panel Survey, 2005.

[vii] Source: CMS Quality Improvement Organization Program, 2006. This source categorizes race/ethnicity information as a single item: non-Hispanic White, non-Hispanic Black, Hispanic, Asian and Pacific Islander, American Indian and Alaska Native. These contrasts compare each group with non-Hispanic Whites.

[v] Source: HCUP State Inpatient Databases disparities analysis file, 2005. 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.

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 13 and over[iii]	↓	↑		=		↓
Maternal and Child Health						
Pregnant women who first received prenatal care in first trimester[iv]	↓	=		↓		↓
Infant deaths per 1,000 live births, <1,500 g[iv]	↓	=		=		↓
Children ages 19-35 months who received all recommended vaccines[v]	↓	=		=	=	↓
Children ages 2-17 with advice about healthy eating[vi]	=	=			↓	=
Children ages 3-6 who ever had their a vision checked[vi]	↓					↓

[i] Compared with Whites.

[ii] Compared with non-Hispanic Whites.

[iii] Source: Centers for Disease Control and Prevention, 2006. 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: National Vital Statistics System-Natality, 2005. This source did not collect information for >1 race.

[v] Source: National Immunization Survey, 2006.

[vi] Source: Medical Expenditure Panel Survey, 2005.

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
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 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]	↓	↓		↓		↓
Visits with antibiotics prescribed for a diagnosis of common cold per 10,000 population[vii]						
Patients with tuberculosis who completed a curative course of treatment within 1 year of treatment initiation[viii]	=	=		=		↓

[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, 2006.

[iv] Source: National Vital Statistics System-Mortality, 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.

[v] Source: National Health Interview Survey, 2006.

[vi] Source: CMS Quality Improvement Organization program, 2006. 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: National Ambulatory Medical Care Survey/National Hospital Ambulatory Medical Care Survey, 2005-2006. This source did not collect information for >1 race. Missing rates preclude analysis by ethnicity.

[viii] Source: CDC National TB Surveillance System, 2004. 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
Nursing Home, Home Health, and Hospice Care						
Long-stay nursing home residents with physical restraints[iii]	↑	↓		↓		↓
High-risk, long-stay nursing home residents with pressure sores[iii]	↓	=		↓		↓
Short-stay nursing home residents with pressure sores[iii]	↓	↓		=		↓
Adult home health care patients whose ability to walk or move around improved[iv]	=	=	=	=	=	=
Adult home health care patients who were admitted to the hospital[iv]	↓	↑	=	↓	↓	↓

[i] Compared with Whites.

[ii] Compared with non-Hispanic Whites.

[iii] Source: CMS Minimum Data Set, 2006. This source categorizes race/ethnicity information as a single item: non-Hispanic White, non-Hispanic Black, Hispanic, Asian and Pacific Islander. Contrasts compare each group with non-Hispanic Whites.

[iv] Source: CMS Outcome and Assessment Information Set, 2006.

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 2.1b. Socioeconomic Differences in Effectiveness of Care

Core Report Measure	Income Difference[i]			Educational Difference[ii]		Insurance Difference[iii]
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
Cancer						
Adults age 50 and over who report having ever received a sigmoidoscopy, colonoscopy, or proctoscopy or who report fecal occult blood test within the last 2 years[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]	↓	↓	↓	↓	=	↓
Heart Disease						
Adults with obesity who ever received advice to exercise more[vi]	↓	↓	↓	↓	↓	↓
Adult current smokers who received advice to quit smoking[vi]	=	=	=	=	=	↓
Maternal and Child Health						
Pregnant women who first received prenatal care in first trimester[vii]				↓	↓	
Infant deaths per 1,000 live births, birth weight <1,500 g[vii]				↓	↓	
Children ages 19-35 months who received all recommended vaccines[viii]	↓	↓	↓			
Children ages 2-17 with advice about healthy eating[vi]	↓	↓	↓			↓
Children ages 3-6 who ever had their vision checked[vi]	=	=	=			↓

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

[ii] Compared with persons with any college education.

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

[iv] Source: National Health Interview Survey, 2006.

[v] Source: National Vital Statistics System-Mortality, 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.

[vi] Source: Medical Expenditure Panel Survey, 2005.

[vii] Source: National Vital Statistics System-Natality, 2005. This source did not collect information for >1 race.

[viii] Source: National Immunization Survey, 2006.

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 who received such treatment[iv]	↑	=	=	=	=	
Respiratory Diseases						
Adults age 65 and over who ever received pneumococcal vaccination[vi]	↓	↓	=	=	=	

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

[ii] Compared with persons with any college education.

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

[iv] Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2006.

[v] Source: National Vital Statistics System-Mortality, 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.

[vi] Source: National Health Interview Survey, 2006.

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.

Table 2.2a. Racial and Ethnic Differences in Patient Safety

Core Report Measure	Racial Difference[i]					Ethnic Difference[ii]
	Black	Asian	NHOPI	AI/AN	>1 Race	Hispanic
Postoperative Complications						
Composite: 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, 2006.

[iv] Source: HCUP State Inpatient Databases disparities analysis file, 2005. 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, 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.

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, 2005. This source did not collect information for >1 race.

[iv] Source: National Hospital Ambulatory Medical Care Survey – Emergency Department, 2005-2006. 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, 2005. This source did not collect information for >1 race.

[v] Source: National Hospital Ambulatory Medical Care Survey – Emergency Department, 2005-2006. Missing rates preclude analysis by ethnicity.

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.

References

1. Agency for Healthcare Research and Quality. Your guide to choosing quality health care. Rockville, MD: Agency for Healthcare Research and Quality; 2001. Available at: http://www.ahrq.gov/consumer/qnt/.

2. Institute of Medicine Committee on Quality of Health Care in America. Crossing the quality chasm: a new health system for the 21st century. Washington, DC: National Academies Press; 2001.

3. American Cancer Society. Cancer facts and figures 2008. Atlanta, GA: American Cancer Society; 2008. Available at http://www.cancer.org/docroot/STT/content/STT_1x_Cancer_Facts_and_Figures_2008.asp. Accessed April 1, 2008.

4. Kung HC, Hoyert DL, Xu JQ, et al. Deaths: final data for 2005. Natl Vital Stat Rep 2008;56(10). Hyattsville, MD: National Center for Health Statistics. 2008. Available at: http://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_10.pdf. Accessed April 28, 2008.

5. National Cancer Institute. Cancer Query System: Cancer Prevalence Database. U.S. estimated complete prevalence counts on 1/1/2004. Available at: http://srab.cancer.gov/prevalence/canques.html. Accessed April 18, 2007.

6. National Heart, Lung, and Blood Institute. Fact book fiscal year 2006. Bethesda, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute; 2006. Available at: http://www.nhlbi.nih.gov/about/06factpdf.pdf. Accessed March 27, 2008.

7. Maciosek MV, Coffield AB, Edwards NM, et al. Priorities among effective clinical preventive services: results of a systematic review and analysis. Am J Prev Med 2006 Jul;31(1):52-61.

8. Making cancer health disparities history. Report of the Trans-HHS Cancer Health Disparities Progress Review Group. Submitted to the Secretary, U.S. Department of Health and Human Services; March 2004. Available at: http://www.hhs.gov/chdprg/pdf/chdprg.pdf. Accessed March 12, 2008.

9. American College of Surgeons and American Cancer Society. Cancer data & statistics. National Cancer Data Base; 2005 Available at: http://www.facs.org/cancer/publicncdb.html.

10. Fisher B, Anderson S, Bryant J, et al. Twenty-year follow-up of a randomized trial comparing total mastectomy, lumpectomy, and lumpectomy plus irradiation for the treatment of invasive breast cancer. New Engl J Med 2002;347:1233-41.

11. Buchholz TA, Theriault RL, Niland JC, et al. The use of radiation as a component of breast conservation therapy in National Comprehensive Cancer Network Centers. J Clin Oncol 2006;24:361-9.

12. Desch CE, McNiff KK, Schneider EC, et al. American Society of Clinical Oncology/National Comprehensive Cancer Network Quality Measures. J Clin Oncol 2008;26(21):3631-7.

13. Chang GJ, Rodriguez-Bigas MA, Skibber JM, et al. Lymph node evaluation and survival after curative resection of colon cancer: systematic review. J Natl Cancer Inst 2007;99(6):433-41

14. Bilimoria KY, Bentrem DJ, Stewart AK, et al. Lymph node evaluation as a colon cancer quality measure: a national hospital report card. J Natl Cancer Inst 2008;100(18):1310-7. Epub 2008 Sep 9.

15. Centers for Disease Control and Prevention. National diabetes fact sheet: general information and national estimates on diabetes in the United States, 2007. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2008. Available at: http://www.cdc.gov/diabetes/pubs/estimates07.htm. Accessed June 30, 2008.

16. American Diabetes Association. Economic costs of diabetes in the U.S. in 2007. Diabetes Care 2008;31(3):596-615. Review. Erratum in: Diabetes Care 2008;31(6):1271. Available at: http://care.diabetesjournals.org/misc/econcosts.pdf.

17. National Quality Forum. National voluntary consensus standards for adult diabetes care: a consensus report. Washington, DC: National Quality Forum; 2002.

18. National Diabetes Quality Improvement Alliance. National Diabetes Quality Improvement Alliance Performance Measurement Set for Adult Diabetes. Chicago, IL: NDQIA; 2003.

19. National Diabetes Education Program. Guiding principles for diabetes care: for health care providers. Bethesda, MD: National Institutes of Health; April 2004. NIH Publication No. 99-4343. Available at: http://ndep.nih.gov/diabetes/pubs/GuidPrin_HC_Eng.pdf. Accessed June 7, 2006.

20. Healthcare Systems Bureau, Division of Transplantation. 2007 Annual report of the U.S. Organ Procurement and Transplantation Network and the Scientific Registry of Transplant Recipients: transplant data 1997-2006. Rockville, MD: Health Resources and Services Administration; 2008. Available at: http://www.optn.org/AR2007/chapter_index.htm. Accessed November 3, 2008.

21. National Kidney and Urologic Diseases Information Clearinghouse. Treatment methods for kidney failure: transplantation. Bethesda, MD: National Institutes of Health; May 2006. NIH Publication No. 06-4687. Available at: http://kidney.niddk.nih.gov/kudiseases/pubs/transplant/. Accessed June 7, 2006.

22. Scientific Registry of Transplant Recipients. Waitlist and transplant activity for kidneys, 1995-2004 [PowerPoint slide]. Based on 2005 Annual report of the U.S. Organ Procurement and Transplantation Network and the Scientific Registry of Transplant Recipients, Tables 1.3, 1.6, 1.7.

23. American Heart Association. Heart disease and stroke statistics—2008 update. Dallas: American Heart Association; 2008.

24. Rosamond W, Flegal K, Friday G, et al. Heart disease and stroke statistics—2007 update: a report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Circulation 2007 Feb 6;115(5);e69-e171.

25. Prevalence of overweight and obesity among adults: United States, 2003-2004. NCHS E-Stats. Hyattsville, MD: National Center for Health Statistics; April 2006. Available at: http://www.cdc.gov/nchs/products/pubs/pubd/hestats/overweight/overwght_adult_03.htm. Accessed March 29, 2007.

26. Available at: Centers for Disease Control and Prevention. Overweight and Obesity. http://www.cdc.gov/nccdphp/dnpa/obesity/. Accessed May 8, 2006.

27. Centers for Disease Control and Prevention. Racial/ethnic and socioeconomic disparities in multiple risk factors for heart disease and stroke—United States, 2003. MMWR Morb Mortal Wkly Rep 2005 Feb 11;54(5):113-7. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5405a1.htm.

28. U.S. Preventive Services Task Force. Screening for obesity in adults: recommendations and rationale. Rockville, MD: Agency for Healthcare Research and Quality; 2003. Available at: http://www.ahrq.gov/clinic/3rduspstf/obesity/obesrr.htm. Accessed May 8, 2006.

29. Diaz VA, Mainous 3rd AG, Koopman RJ, et al. Undiagnosed obesity: implications for undiagnosed hypertension, diabetes, and hypercholesterolemia. Fam Med 2004 Oct;36(9):639-44. Available at http://www.stfm.org/fmhub/fm2004/October/Vanessa639.pdf. Accessed May 8, 2006.

30. Centers for Disease Control and Prevention. HIV/AIDS Surveillance Report, 2006; vol. 18. Atlanta: U.S. Department of Health and Human Services; 2008. Available at http://www.cdc.gov/hiv/topics/surveillance/resources/reports/2006report/pdf/2006SurveillanceReport.pdf. Accessed March 27, 2008.

31. Hall HI, Song R, Rhodes P, et al. Estimation of HIV incidence in the United States. JAMA 2008;300:520-9.

32. The HIV/AIDS epidemic in the United States. HIV/AIDS Policy Fact Sheet. Washington, DC: The Henry J. Kaiser Family Foundation; October 2008. Available at: http://www.kff.org/hivaids/upload/3029-09.pdf. Accessed March 27, 2008.

33. Centers for Disease Control and Prevention. HIV/AIDS Surveillance Report, 2006, vol. 18, Table 7. Atlanta: U.S. Department of Health and Human Services; 2008. Available at: http://www.cdc.gov/hiv/topics/surveillance/resources/reports/2006report/pdf/2006SurveillanceReport.pdf. Accessed November 17, 2008.

34. Shapiro MF, Morton SC, McCaffrey DF, et al. Variations in the care of HIV-Infected adults in the United States. JAMA 1999;281:2305-15.

35. Available at: Centers for Disease Control and Prevention. HIV/AIDS and African Americans. http://www.cdc.gov/hiv/topics/aa/index.htm. Accessed May 27, 2008.

36. Centers for Disease Control and Prevention. Leading Causes of Death reports, 2005. WISQARS [Web-based Injury Statistics Query and Reporting System]. Available at: http://www.cdc.gov/ncipc/WISQARS/. Accessed March 18, 2008.

37. Turner BJ, Cunningham WE, Duan N, et al. Delayed medical care after diagnosis in a US national probability sample of persons infected with human immunodeficiency virus. Ach Intern Med 2000;160:2614-22.

38. Cases of HIV infection and AIDS in the United States and dependent areas, 2005. HIV/AIDS Surveillance Report, vol. 17. Revised edition, June 2007. Available at: http://www.cdc.gov/hiv/topics/surveillance/resources/reports/2005report/default.htm. Accessed May 27, 2008.

39. Centers for Disease Control and Prevention. HIV/AIDS Surveillance Report, vol. 17, 2005, Table 5a. Revised edition, 2007. Available at: http://www.cdc.gov/hiv/topics/surveillance/resources/reports/.

40. Hader SL, Smith DK, Moore JS, et al. HIV infection in women in the United States. JAMA 2001;285:1186-92.

41. HIV and AIDS—United States, 1981-2000. MMWR Morb Mortal Wkly Rep 2001 Jun 1;50(21):430-4. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5021a2.htm. Accessed May 5, 2006.

42. Centers for Disease Control and Prevention. Cases of HIV infection and AIDS in the United States, 2003. HIV/AIDS Surveillance Report, vol. 15, 2004. Available at: http://www.cdc.gov/hiv/topics/surveillance/resources/reports/2003report/default.htm. Accessed May 8, 2006.

43. Clinical management of the HIV-infected adult: a manual for midlevel clinicians. Rockville, MD: Health Resources and Services Administration; revised 2003. Available at: http://www.seatec.emory.edu/clinicalprotocols/clinical_protocols_manual2003.pdf. Accessed May 8, 2006.

44. Kessler RC, Chiu WT, Demler O, et al. Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. Arch Gen Psychiatry 2005 Jun;62(6):617-27. Erratum 12-month prevalence of DSM-IV disorders by sex and cohort Table 2. Available at: http://www.hcp.med.harvard.edu/ncs/ftpdir/table_ncsr_12monthprevgenderxage.pdf. Accessed July 14, 2008.

45. National Highway Traffic Safety Administration, National Center for Statistics and Analysis. Traffic safety facts. 2006 traffic safety annual assessment—alcohol-related fatalities. Washington, DC: U.S. Department of Transportation; August 2007. Available at: http://www.nhtsa.dot.gov/portal/nhtsa_static_file_downloader.jsp?file=/staticfiles/DOT/NHTSA/NCSA/Content/RNotes/2007/810821.pdf. Accessed March 27, 2008.

46. Office of Applied Studies. Results from the 2006 National Survey on Drug Use and Health: National findings. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2007. NSDUH Series H-32, DHHS Publication No. SMA 07-4293. Available at: http://www.oas.samhsa.gov/nsduh/2k6nsduh/2k6results.pdf. Accessed March 27, 2008.

47. Mark TL, Levit KR, Coffey RM, et al. National expenditures for mental health services and substance abuse treatment, 1993-2003. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2007. SAMHSA Publication No. SMA 07-4227. Available at: http://www.samhsa.gov/spendingestimates/SAMHSAFINAL9303.pdf. Accessed November 5, 2008.

48. Owens P, Myers M, Elixhauser A, et al. Care of adults with mental health and substance abuse disorders in U.S. community hospitals, 2004. Rockville, MD: Agency for Healthcare Research and Quality; 2007. HCUP Fact Book No. 10, AHRQ Publication No. 07-0008.

49. Demyttenaere K, Bruffaerts R, Posada-Villa J, et al. WHO World Mental Health Survey Consortium. Prevalence, severity, and unmet need for treatment of mental disorders in the World Health Organization World Mental Health Surveys. JAMA 2004 Jun 2;291(21):2581-90.

50. Center for Mental Health Services. Mental health: culture, race, and ethnicity—a supplement to Mental Health: A Report of the Surgeon General. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2001. Available at: http://download.ncadi.samhsa.gov/ken/pdf/SMA-01-3613/sma-01-3613.pdf. Accessed June 7, 2006.

51. Bird DC, Dempsey P, Hartley D. Addressing mental health workforce needs in underserved rural areas: accomplishments and challenges. Portland, ME: Maine Rural Health Research Center, University of Southern Maine; 2001

52. Wang PS, Lane M, Olfson M, et al. Twelve-month use of mental health services in the United States: results from the National Comorbidity Survey replication. Arch Gen Psychiatry 2005;62(6):629-40.

53. National Heart, Lung, and Blood Institute. Morbidity & mortality: 2007 chart book on cardiovascular, lung, and blood diseases. Bethesda, MD: National Institutes of Health; 2007. Available at http://www.nhlbi.nih.gov/resources/docs/07a-chtbk.pdf. Accessed August 13, 2007.

54. National Health Interview Survey. Table 3-1. Current asthma population estimates, in thousands, by age. Hyattsville, MD: National Center for Health Statistics; 2008. Available at: http://www.cdc.gov/asthma/nhis/06/pdfs/table3-1.pdf. Accessed on August 12, 2008.

55. Bloom B, Dey AN. Summary health statistics for U.S. children: National Health Interview Survey, 2004. Vital Health Stat 2006;10(227). Available at: http://www.cdc.gov/nchs/data/series/sr_10/sr10_227.pdf. Accessed March 3, 2006.

56. National Institute of Allergies and Infectious Diseases. Common cold. Bethesda, MD: National Institutes of Health; 2004. Available at: http://www3.niaid.nih.gov/healthscience/healthtopics/colds/overview.htm. Accessed November 7, 2005.

57. Kozak LJ, DeFrances CJ, Hall MJ. National Hospital Discharge Survey: 2004 annual summary with detailed diagnosis and procedure data. Vital Health Stat 2006 Oct;13(162). Table 12: Rate of discharges from short-stay hospitals by age and first-listed diagnosis: United States 2004. Available at: http://www.cdc.gov/nchs/data/series/sr_13/sr13_162.pdf. Accessed May 15, 2007.

58. Fendrick AM, Monto AS, Nightengale B, et al. The economic burden of non-influenza-related viral respiratory tract infection in the United States. Arch Intern Med 2003 Feb 24;163(4):487-94.

59. Davis MM. Race-based immunization recommendations and the potential to reduce health disparities. JAMA 2004 May 12;291(18):2253-5.

60. Flannery B, Schrag S, Bennett NM, et al. Active Bacterial Core Surveillance/Emerging Infections Program Network. Impact of childhood vaccination on racial disparities in invasive Streptococcus pneumoniae infections. JAMA 2004 May 12;291(18):2197-2203.

61. National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Expert Panel Report 2: guidelines for the diagnosis and management of asthma. Bethesda MD: National Institutes of Health; 1997. NIH Publication No. 97-4051.

62. National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Key clinical activities for quality asthma care: recommendations of the National Asthma Education and Prevention Program. MMWR Recommendations and Reports 2003 March 28;52(RR06):18. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5206a1.htm.

63. National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Quick reference for the NAEPP Expert Panel Report: guidelines for the diagnosis and management of asthma—update on selected topics 2002. Bethesda, MD: National Institutes of Health; 2002. NIH Publication No. 02-5075. Available at: http://www.nhlbi.nih.gov/guidelines/archives/epr-2_upd/asthmafullrpt_archive.pdf.

64. National Asthma Education and Prevention Program. National Asthma Education and Prevention Program expert panel report: guidelines for the diagnosis and management of asthma update on selected topics 2002. J Allergy Clin Immunol 2002 Nov;110(5):S141-219.

65. Nursing Home Data Compendium. 2007 edition. Table 2.1. Characteristics of nursing home residents in the United States, 2006. Rockville, MD: Centers for Medicare & Medicaid Services; 2007.

66. A databook: healthcare spending and the Medicare Program. Section 9, post-acute care. Washington, DC: Medicare Payment Advisory Commission; June 2008. Available at: http://www.medpac.gov/chapters/Jun08DataBookSec9.pdf. Accessed September 23, 2008.

67. Medicare home health agency utilization by State; calendar year 2006. Baltimore: Centers for Medicare & Medicaid Services. Available at: http://www.cms.hhs.gov/MedicareFeeforSvcPartsAB/Downloads/HHAst06.pdf. Accessed September 19, 2008.

68. Medicare hospice utilization by State; calendar year 2006. Baltimore: Centers for Medicare & Medicaid Services. Available at: http://www.cms.hhs.gov/MedicareFeeforSvcPartsAB/Downloads/HOSPICE06.pdf. Accessed September 19, 2008.

69. Table 2. National health expenditures aggregate amounts and average annual percent change, by type of expenditure: selected calendar years 1970-2006. Baltimore, MD: Centers for Medicare & Medicaid Services. Available at: http://www.cms.hhs.gov/NationalHealthExpendData/downloads/tables.pdf. Accessed October 30, 2007.

70. Health Care Information System. Medicare national summary for HHA, hospice, SNF, and outpatient CY 2004-2006. Baltimore: Centers for Medicare & Medicaid Services. Available at: http://www.cms.hhs.gov/MedicareFeeforSvcPartsAB/Downloads/NationalSum0406.pdf. Accessed September 5, 2008.

71. Field MJ, Cassell CK, eds. Institute of Medicine, Committee on Care at the End of Life. Approaching death: improving care at the end of life. Washington, DC: National Academy Press; 1997.

72. Connor SR, Teno J, Spence C, et al. Family Evaluation of Hospice Care: results from voluntary submission of data via website. J Pain Symptom Manage 2005 Jul;30(1):9-17.

73. Teno J, Shu J, Casarett D, et al. Timing of referral to hospice and quality of care: length of stay and bereaved family members' perceptions of the timing of hospice referral. J Pain Symptom Manage 2007 Aug;34(2):120-5. Epub 2007 Jun 21.

74. Kohn LT, Corrigan JM, Donaldson MS, eds. Institute of Medicine, Committee on Quality of Health Care in America. To err is human: building a safer health system. Washington, DC: National Academy Press; 2000.

75. Zhan C, Miller MR. Excess length of stay, charges, and mortality attributable to medical injuries during hospitalization. JAMA 2003;290(14):1868-74.

76. Lazarou J, Pomeranz BH, Corey PN. Incidence of adverse drug reactions in hospitalized patients: a meta-analysis of prospective studies. JAMA 1998 Apr 15;279(15):1200-5.

77. Lesar TS, Lomaestro B, Pohl H. Medication-prescribing errors in a teaching hospital. A 9-year experience. Arch Intern Med 1997 Jul 28;157(14):1569-76.

78. Classen DC, Pestotnik SL, Evans RS, et al. Adverse drug events in hospitalized patients. Excess length of stay, extra costs, and attributable mortality. JAMA 1997 Jan 22-29;277(4):301-6.

79. Bates DW, Cullen DJ, Laird N, et al. Incidence of adverse drug events and potential adverse drug events. Implications for prevention. ADE Prevention Study Group. JAMA 1995 Jul 5;274(1):29-34.

80. Romano PS, Geppert JJ, Davies S, et al. A national profile of patient safety in U.S. hospitals. Health Aff 2003 MarApr;22(2):154-66.

81. Coffey RM, Andrews RM, Moy E. Racial, ethnic, and socioeconomic disparities in estimates of AHRQ Patient Safety Indicators. Med Care 2005;43(3 Suppl):I48-I63.

82. Flores G, Ngui E. Racial/ethnic disparities and patient safety. Pediatr Clin N Am 2006;53:1197-1215.

83. Zhan C, Sangl J, Bierman AS, et al. Potentially inappropriate medication use in the community-dwelling elderly: findings from the 1996 Medical Expenditure Panel Survey. JAMA 2001 Dec 12;286(22):2823-9.

84. Leddy KM, Kaldenberg DO, Becker BW. Timeliness in ambulatory care treatment. An examination of patient satisfaction and wait times in medical practices and outpatient test and treatment facilities. J Ambul Care Manage 2003 AprJun; 26(2):138-49.

85. Boudreau RM, McNally C, Rensing EM, et al. Improving the timeliness of written patient notification of mammography results by mammography centers. Breast J 2004 JanFeb;10(1):10-19.

86. Schellinger PD, Warach S. Therapeutic time window of thrombolytic therapy following stroke. Curr Atheroscler Rep 2004 Jul;6(4):288-94.

87. Kwan J, Hand P, Sandercock P. Improving the efficiency of delivery of thrombolysis for acute stroke: a systematic review. QJM 2004 May;97(5):273-9.

88. Kinchen KS, Sadler J, Fink N, et al. The timing of specialist evaluation in chronic kidney disease and mortality. Ann Intern Med 2002 Sep 17;137(6):479-86.

89. Houck PM, Bratzler DW. Administration of first hospital antibiotics for community-acquired pneumonia: does timeliness affect outcomes? Curr Opin Infect Dis 2005 Apr;18(2):151-6.

90. Luman ET, Barker LE, Shaw KM, et al. Timeliness of childhood vaccinations in the United States: days under vaccinated and number of vaccines delayed. JAMA 2005 Mar 9;293(10):1204-11.

91. Himelhoch S, Weller WE, Wu AW, et al. Chronic medical illness, depression, and use of acute medical services among Medicare beneficiaries. Med Care 2004 Jun;42(6):512-21.

92. Caro JJ, Ward AJ, O'Brien JA. Lifetime costs of complications resulting from type 2 diabetes in the U.S. Diabetes Care 2002 Mar;25(3):476-81.

93. Calculated from: Agency for Healthcare Research and Quality. Healthcare Cost and Utilization Project. 2003 Kids' Inpatient Database. Available at: http://hcup.ahrq.gov/HCUPnet.asp. Accessed October 30, 2007.

94. McCaig LF, Nawar EN. National Hospital Ambulatory Medical Care Survey: 2004 emergency department summary. Advance Data from Vital and Health Statistics, No. 372. Hyattsville, MD: National Center for Health Statistics; 2006. DHHS Publication No. (PHS) 2006-1250. Available at: http://www.cdc.gov/nchs/data/ad/ad372.pdf. Accessed April 24, 2007.

95. Hurtado MP, Swift EK, Corrigan JM, eds. Institute of Medicine, Committee on the National Quality Report on Health Care Delivery. Envisioning the National Health Care Quality Report. Washington, DC: National Academy Press, 2001.

96. Stewart M, Brown JB, Donner A, et al. The impact of patient centered care on outcomes. J Fam Pract 2000 Sep;49(9):796-804.

97. Anderson EB. Patient centeredness: a new approach. Nephrol News Issues 2002 Nov;16(12):8082.

98. Michie S, Miles J, Weinman J. Patient-centredness in chronic illness: what is it and does it matter? Patient Educ Couns 2003 Nov;51(3):197-206.

99. Little P, Everitt H, Williamson I, et al. Observational study of effect of patient centredness and positive approach on outcomes of general practice consultations. BMJ 2001 Oct 20;323(7318):908-11.

100. Beck R, Daughtridge R, Sloane PD. Physician-patient communication in the primary care office: a systematic review. J Am Board Fam Pract 2002 JanFeb;15(1):25-38.

101. DiMatteo M. The role of the physician in the emerging health care environment. West J Med 1998 May;168(5):328-33.

102. Gazmararian J, Williams MV, Peel J, et al. Health literacy and knowledge of chronic disease. Patient Educ Couns 2003 Nov;51(3):267-75.

103. Parker RM, Ratzan SC, Lurie N. Health literacy: a policy challenge for advancing high-quality health care. Health Aff 2003 JulAug;22(4):147-53.

104. Selden C, Zorn M, Ratzan S, et al., compilers. Health literacy: January 1990 through October 1999 [bibliography]. . Current Bibliographies in Medicine 2000 February:vi.

105. Scott TL, Gazmararian JA, Williams MV, et al. Health literacy and preventive health care use among Medicare enrollees in a managed care organization. Med Care 2002 May;40(5):395-404. In: Gazmararian JA, Curran JW, Parker RM, et al. Public health literacy in America: an ethical imperative. Am J Prev Med 2005 Apr;28(3):317-22.

106. Williams M, Baker DW, Parker RM, et al. Relationship of functional health literacy to patients' knowledge of their chronic disease. A study of patients with hypertension and diabetes. Arch Intern Med 1998 Jan 26;158(2):166-72. .

107. Williams M, Baker DW, Honig EG, et al. Inadequate literacy is a barrier to asthma knowledge and self-care. Chest 1998 Oct;114(4):1008-15.

108. Baker DW, Parker RM, Williams MV, et al. Health literacy and the risk of hospital admission. J Gen Intern Med 1998 Dec;13(12):791-8.

109. Baker DW, Gazmararian JA, Williams MV, et al. Functional health literacy and the risk of hospital admission among Medicare managed care enrollees. Am J Public Health 2002;92:1278-83.

110. Berkman N, DeWalt D, Pignone MP, et al. Literacy and health outcomes summary. Evidence Report/Technology Assessment no. 87. Rockville, MD: Agency for Healthcare Research and Quality; 2004. AHRQ Publication No. 04-E007-1. Available at: http://www.ahrq.gov/clinic/epcsums/litsum.htm.

111. Nielsen-Bohlman L, Panzer AM, Kindig DA, eds. Institute of Medicine, Committee on Health Literacy. Health literacy: a prescription to end confusion. Washington, DC: National Academies Press, 2004.

112. Rhoades DR, McFarland KF, Finch WH, et al. Speaking and interruptions during primary care office visits. Fam Med 2001 JulAug;33(7):528-32.

113. Berry L, Seiders K, Wilder SS. Innovations in access to care: a patient centered approach. Ann Intern Med 2003 Oct 7;139(7):568-74.

114. Available at: U.S. Department of Health and Human Services, Office of Minority Health. Think Cultural Health: bridging the health care gap through cultural competency continuing education programs. http://www.thinkculturalhealth.org. Accessed July 11, 2006.

115. U.S. Department of Health and Human Services, Office for Civil Rights. Guidance to Federal financial assistance recipients regarding Title VI prohibition against national origin discrimination affecting limited English proficient persons. 68 Fed. Reg. 47311-02 (August 8, 2003). Available at: http://www.hhs.gov/ocr/civilrights/resources/specialtopics/lep/policyguidancedocument.html.

116. Hargraves JL, Hays RD, Cleary PD. Psychometric properties of the Consumer Assessment of Health Plans Study (CAHPS) 2.0 adult core survey. Health Serv Res 2003 Dec;38(6 Pt 1):1509-27.

117. U.S. population reaches 300 million. Washington, DC: The Population Institute; October 16, 2006. Available at: http://www.populationinstitute.org/newsroom/population-news/index.php?id%20=%2042&id=42. Accessed October 30, 2007.

118. Komaromy M, Grumbach K, Drake M, et al. The role of Black and Hispanic physicians in providing health care for underserved populations. N Engl J Med 1996 May 16;334(20):1305-10.

119. Turner CB, Turner BF. Who treats minorities? Cult Divers Ment Health 1996;2(3):175-82.

120. Nickens HW. The rationale for minority-targeted programs in medicine in the 1990s. JAMA 1992 May 6;267(17):2390, 2395.

121. Bureau of Labor Statistics. Occupational outlook handbook, 2008-09 edition. Licensed practical and licensed vocational nurses. Washington, DC: U.S. Department of Labor. Available at: http://www.bls.gov/oco/ocos102.htm. Accessed June 4, 2008.

122. Seago JA, Spetz J, Chapman S, et al. Can the use of LPNs alleviate the nursing shortage? Am J Nurs 2006 July;106(7):40-49.

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 the acquisition of basic health care services difficult. As demonstrated 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).

---

[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. See measure specifications and data source descriptions for more information on income groups by data source.

Access to Health Care

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.

Information about patient-provider 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 status in the general U.S. population. Disparities in access to care and patient-provider communication within specific priority populations are discussed in Chapter 4, Priority Populations. Analyses of changes over time and stratified analyses are also presented in this chapter.

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. (Go 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.[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]

Racial and ethnic minorities and people of low socioeconomic status are disproportionately represented among individuals with access problems, such as uninsurance.

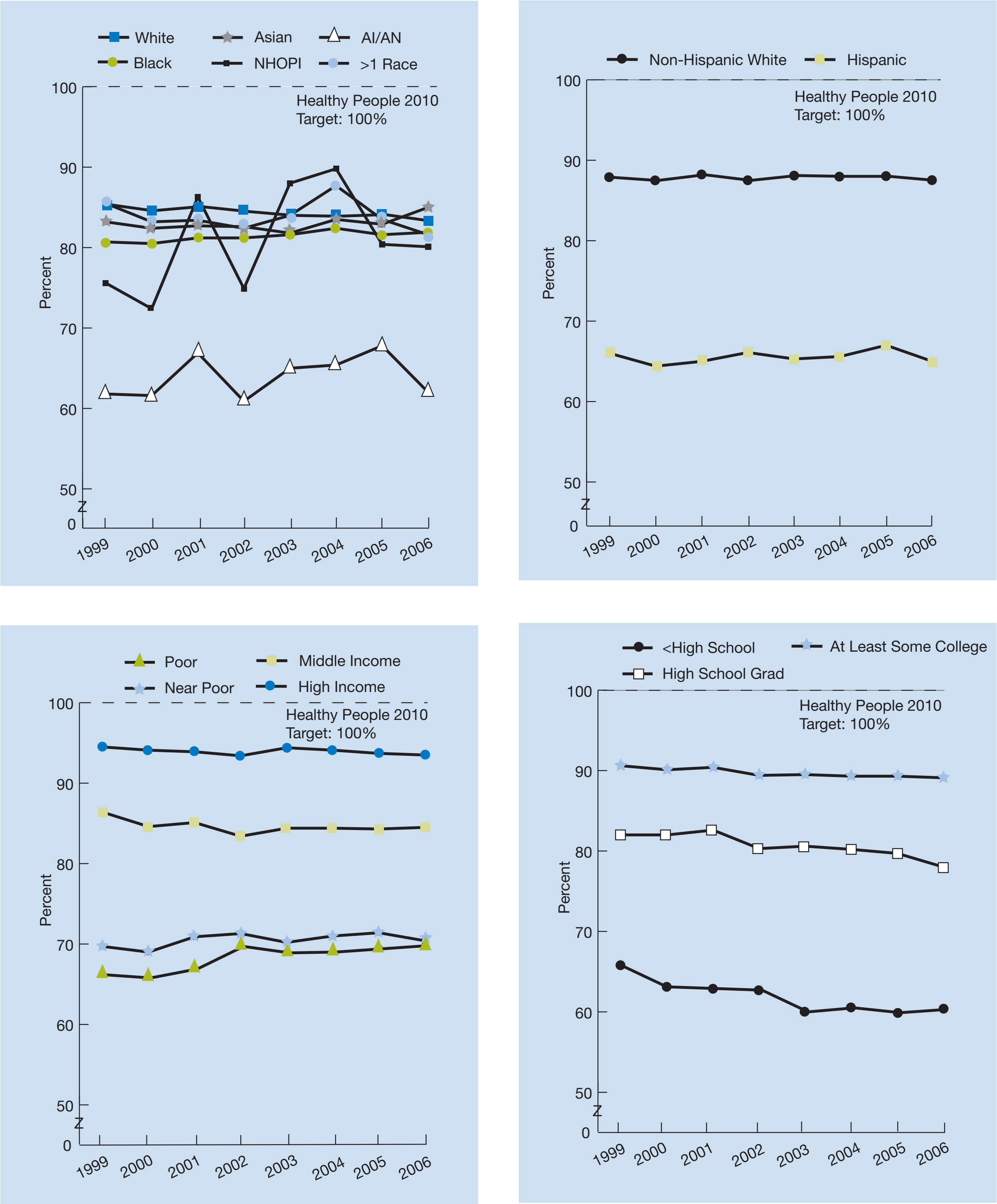


Figure 3.1. People under age 65 with health insurance, by race (top left), ethnicity (top right), income (bottom left), and education (bottom right), 1999-2006

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), 1999-2006.

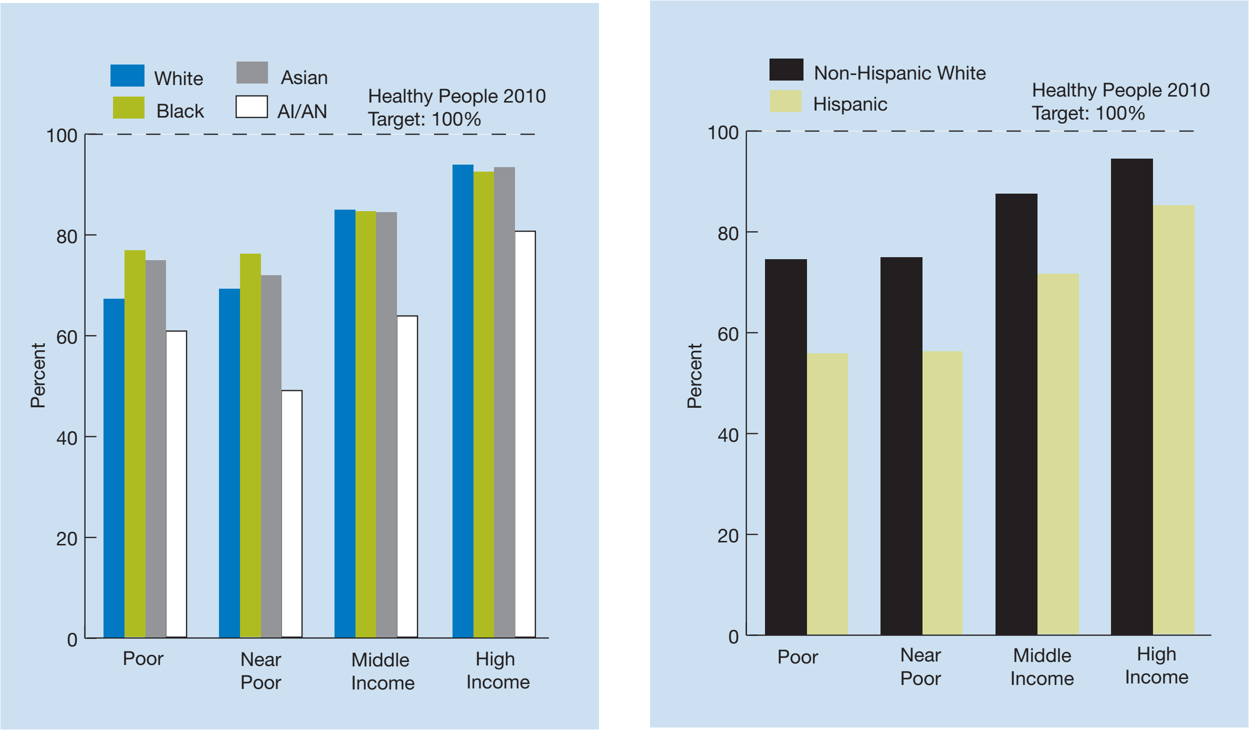
Reference population: Analyses by race, ethnicity, and income performed for civilian noninstitutionalized population under age 65. Analyses by education performed for civilian noninstitutionalized population ages 25-64.

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 2006, the gap between Blacks and Whites in insurance coverage decreased (Figure 3.1). In 2006, the percentage of people with insurance was lower for Blacks than for Whites (81.9% compared with 83.3%).
- From 1999 to 2006, the gap between Hispanics and non-Hispanic Whites in insurance coverage remained the same. In 2006, the percentage of people with insurance was lower for Hispanics than for non-Hispanic Whites (65.0% compared with 87.5%).
- The gap between poor people and high-income people decreased during this period. Still, in 2006, the percentage of people with insurance was significantly lower for poor people than for high-income people (69.8% compared with 93.5%).
- The gap between people with less than a high school education and people with some college increased. In 2006, the percentage of people with insurance was almost one-third lower for people with less than a high school education than for people with some college (60.3% compared with 89.1%).
- From 1999 to 2006, the rates of insurance worsened for Whites, high-income people, and people at every education level. There were no statistically significant changes in the rate of insurance for Blacks, Asians, American Indians and Alaska Natives (AI/ANs), non-Hispanic Whites, and Hispanics.

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 (left) and ethnicity (right), stratified by income, 2006



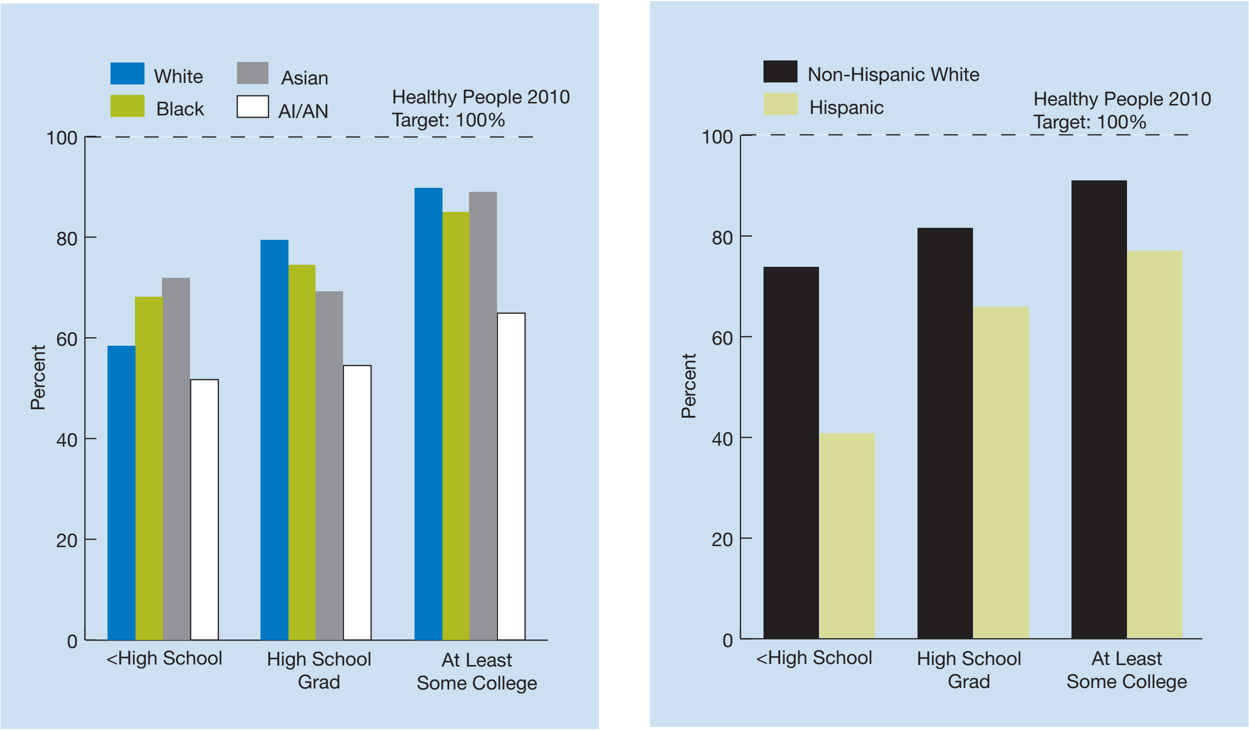
Key: AI/AN = American Indian or Alaska Native.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey (NHIS), 2006.

Reference population: 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 (left) and ethnicity (right), stratified by education, 2006



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), 2006.

Reference population: Civilian noninstitutionalized population ages 25-64.

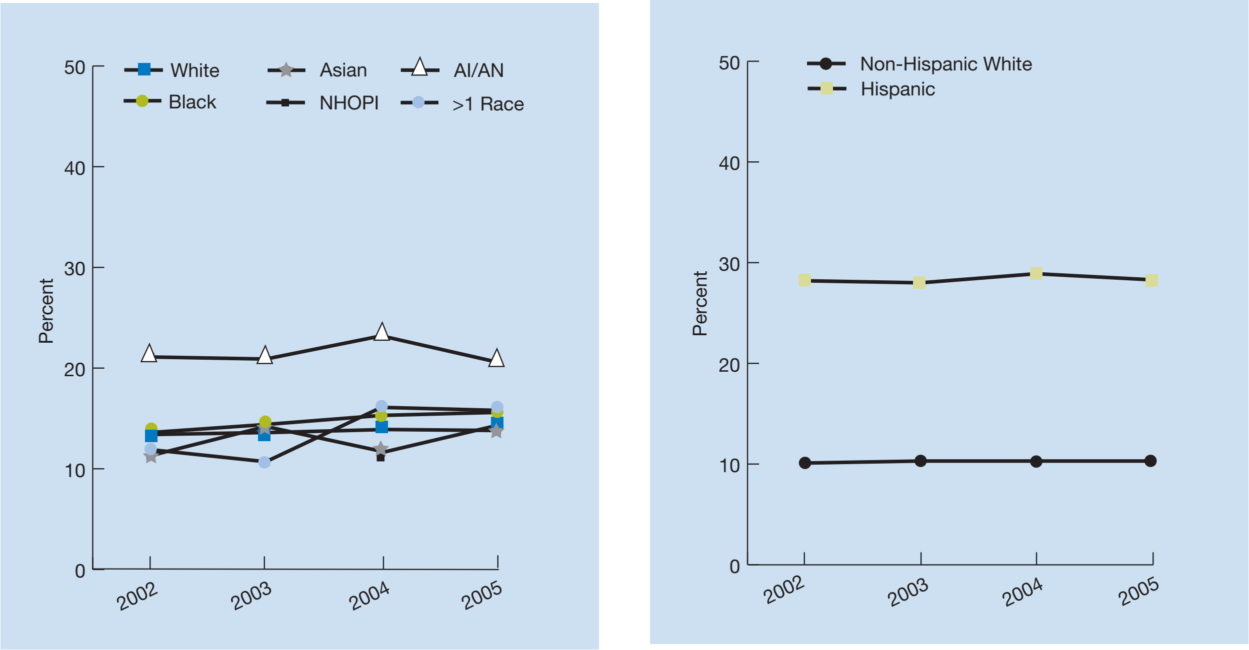
Note: NHIS respondents are asked about health insurance coverage at the time of interview; respondents are considered uninsured if they lack private health insurance, public assistance, Medicare, Medicaid, State Children's Health Insurance Program (SCHIP), a State-sponsored health plan, other government-sponsored 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.

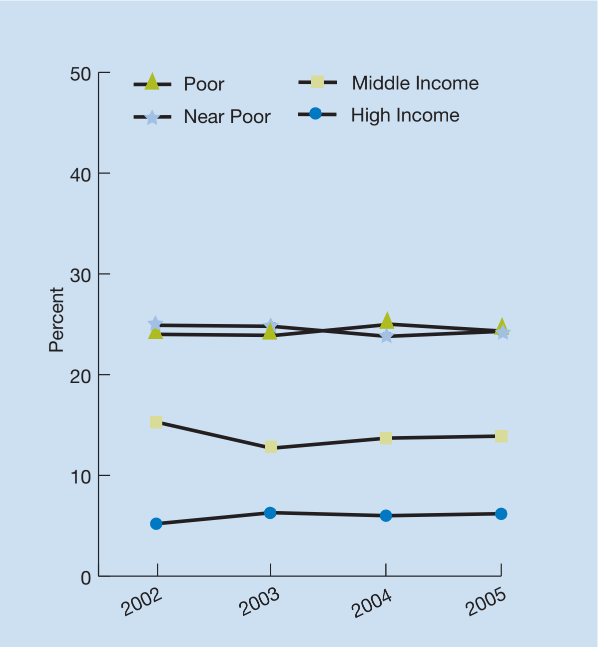
- SES explains some but not all of the differences in the health insurance coverage of racial and ethnic groups in people under age 65 (Figures 3.2 and 3.3).
- Hispanics of every income and education level were significantly less likely than their non-Hispanic peers to have health insurance.
- Blacks who were poor and had less than a high school education (76.7% and 68.1%, respectively) were significantly more likely than their White counterparts (67.1% and 58.4%, respectively) to have health insurance.
- 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.

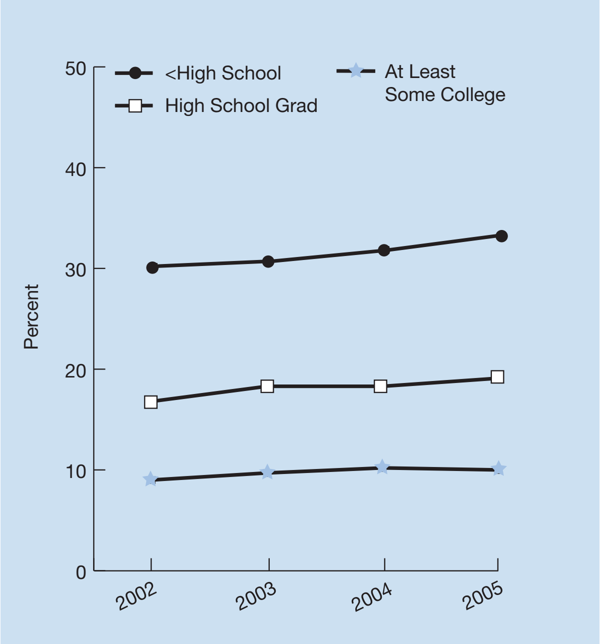
- Among people with a high school education, Blacks (74.5%), Asians (69.2%), and AI/ANs (54.5%) were significantly less likely than Whites (79.4%) to have health insurance. Hispanics (65.7%) also were significantly less likely than non-Hispanic Whites (81.6%) to have health insurance.
- No group has yet achieved the Healthy People 2010 target of 100% of Americans with 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 (left), ethnicity (right), income (next page top left), and education (next page top right), 2002-2005







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, 2002-2005.

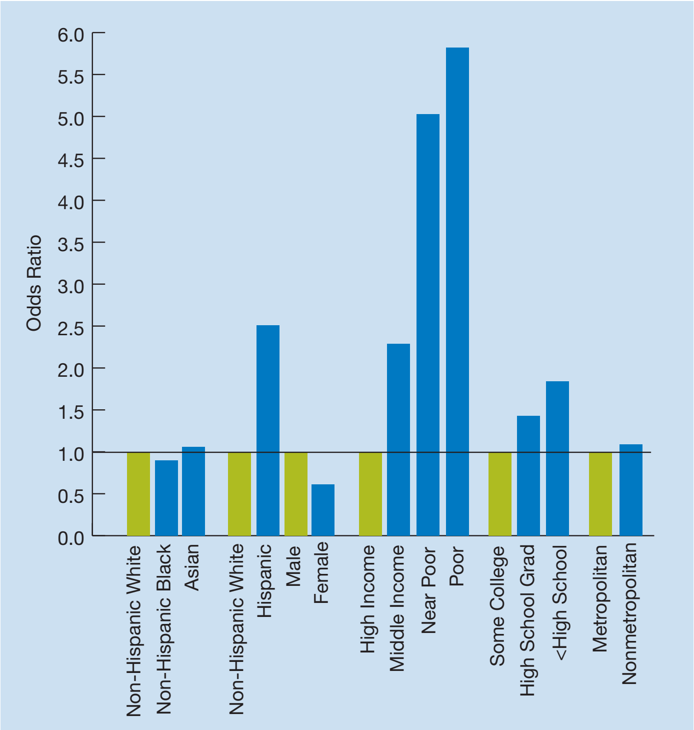
Reference population: Analyses by race, ethnicity, and income performed for civilian noninstitutionalized population under age 65. Analyses by education performed for civilian noninstitutionalized population ages 18-64.

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 2005, the gap between Blacks and Whites in the percentage of uninsured people remained the same (Figure 3.4). The percentage of people uninsured all year was still higher for Blacks than for Whites in 2005 (15.6% compared with 13.8%).
- From 2002 to 2005, the gap between Hispanics and non-Hispanic Whites in the percentage of uninsured people remained the same. The percentage of people uninsured all year was still almost three times higher for Hispanics than for non-Hispanic Whites in 2005 (28.5% compared with 10.3%).
- From 2002 to 2005, the gap between poor people and high-income people in the percentage of uninsured people remained the same. In 2005, the percentage of people uninsured all year was still nearly four times higher for poor people than for high-income people (24.3% compared with 6.2%).
- From 2002 to 2005, the gap between people with less than a high school education and people with some college 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, and SES on access to health care. Past reports have listed some of these findings. Figure 3.5 shows the results of a multivariate model for one additional access measure: people without insurance all year. Adjusted odds ratios are shown to quantify the relative magnitude of disparities after controlling for a number of confounding factors.

Figure 3.5. People ages 18-64 who were uninsured all year: Adjusted odds ratios, 2002-2005



Key: 🟩 = reference group.

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2005.

Reference population: Civilian noninstitutionalized population ages 18-64.

Note: Adjusted odds ratios are calculated from logistic regression models controlling for race, ethnicity, income, education, age, gender, insurance, and residence location. White, non-Hispanic White, male, high income, some college, and metropolitan are reference groups with odds ratio = 1; odds ratios <1 indicate that a group is less likely to receive service than the reference group. For example, compared with non-Hispanic Whites, Hispanics had 2.5 times the odds of having no insurance after controlling for other factors. Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders and for American Indians and Alaska Natives.

From 2002 to 2005, in multivariate models controlling for race, ethnicity, gender, income, education, insurance, and residence location:

- Blacks had 0.9 times the odds and Asians had 1.1 times the odds of being uninsured all year compared with Whites (Figure 3.5).
- Hispanics had 2.5 times the odds of being uninsured all year compared with non-Hispanic Whites.
- Poor individuals had 5.8 times the odds of being uninsured all year compared with high-income individuals.
- Females had 0.6 times the odds of being uninsured all year compared with males.
- Individuals within nonmetropolitan areas had 1.1 times the odds of being uninsured all year compared with individuals within metropolitan areas.

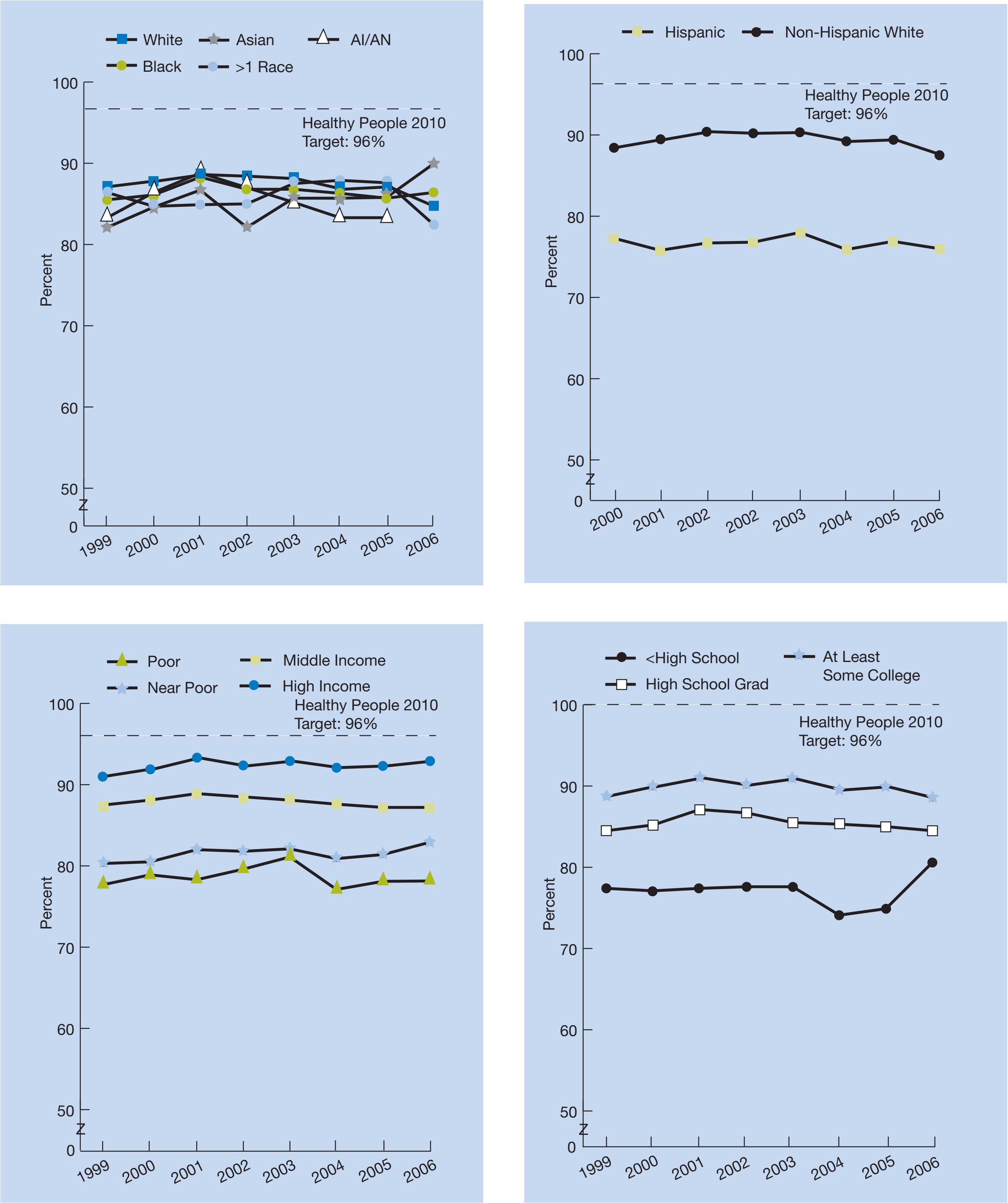
Usual Source of Care

People with a usual source of care (a facility where one regularly receives care) experience improved health outcomes and reduced disparities (smaller differences between groups)[9] and costs,[10] yet more than 40 million Americans do not have a specific source of ongoing care.[11]

Specific Source of Ongoing Care

Higher costs, poorer outcomes, and greater disparities (larger differences between groups) are observed among individuals without a usual source of care.[12]

Figure 3.6. People with a specific source of ongoing care, by race (top left), ethnicity (top right), income (bottom left), and education (bottom right), 1999-2006



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

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 1999-2006.

Reference population: 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.

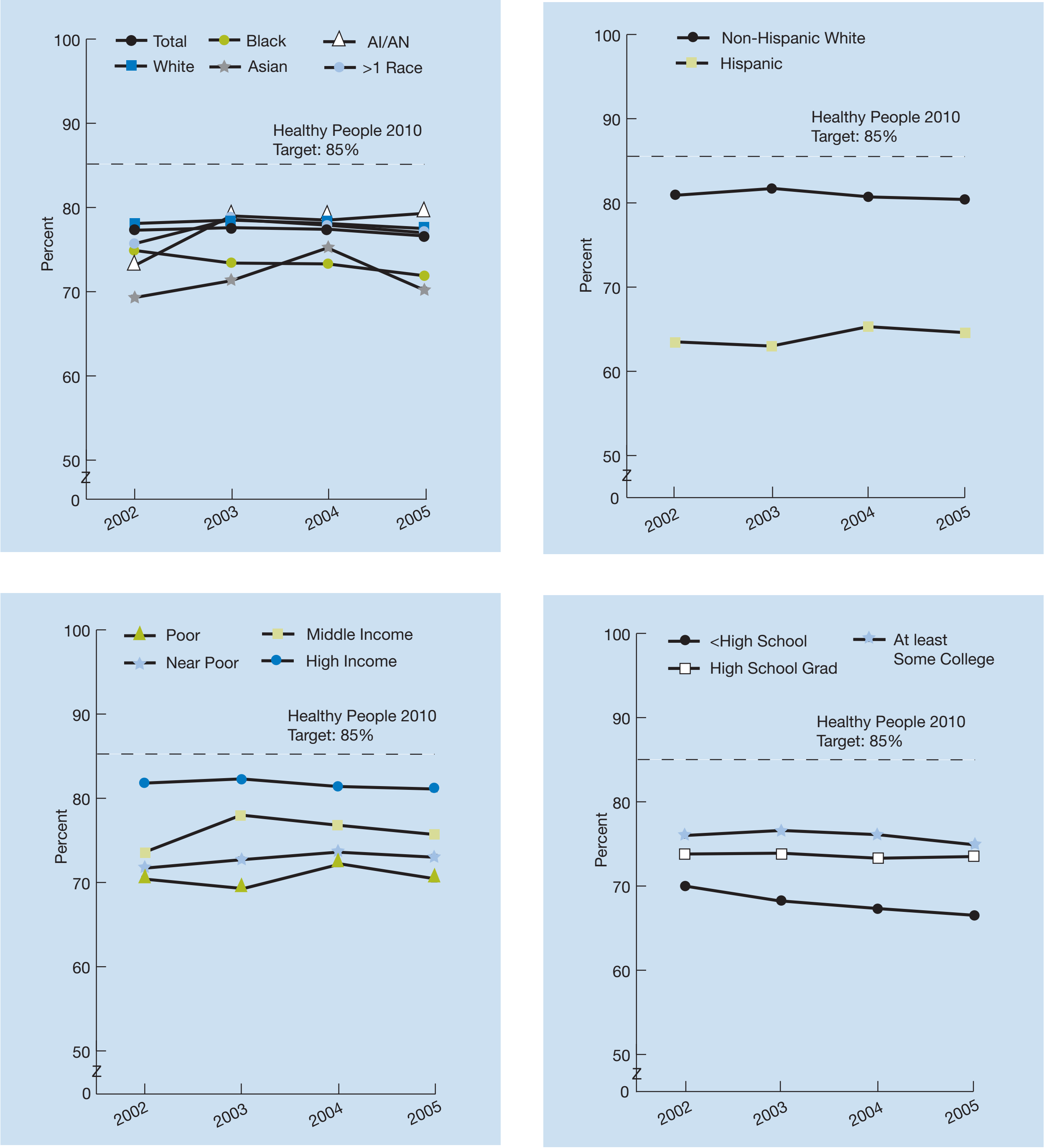
Note: Measure is age adjusted. Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders.

- From 1999 to 2006, the gap in usual source of care between Hispanics and non-Hispanic Whites increased (Figure 3.6). In 2006, the percentage of people with a specific source of ongoing care was significantly lower for Hispanics than for non-Hispanic Whites (74.3% compared with 88.8%).
- During this period, the gap between poor people and high-income people remained the same. In 2006, the percentage of people with a specific source of ongoing care was significantly lower for poor people than for high-income people (77.8% compared with 91.7%).
- No group has yet achieved the Healthy People 2010 target of 96% of Americans with a specific source of ongoing care.

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[13] and with good patient-provider communication. These factors increase the likelihood that patients will receive appropriate care.[14] 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.[15] Indeed, having a usual primary care provider correlates with receipt of higher quality care.[16,17]

Figure 3.7. People with a usual primary care provider, by race (top left), ethnicity (top right), income (bottom left), and education (bottom right), 2002-2005



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

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2005.

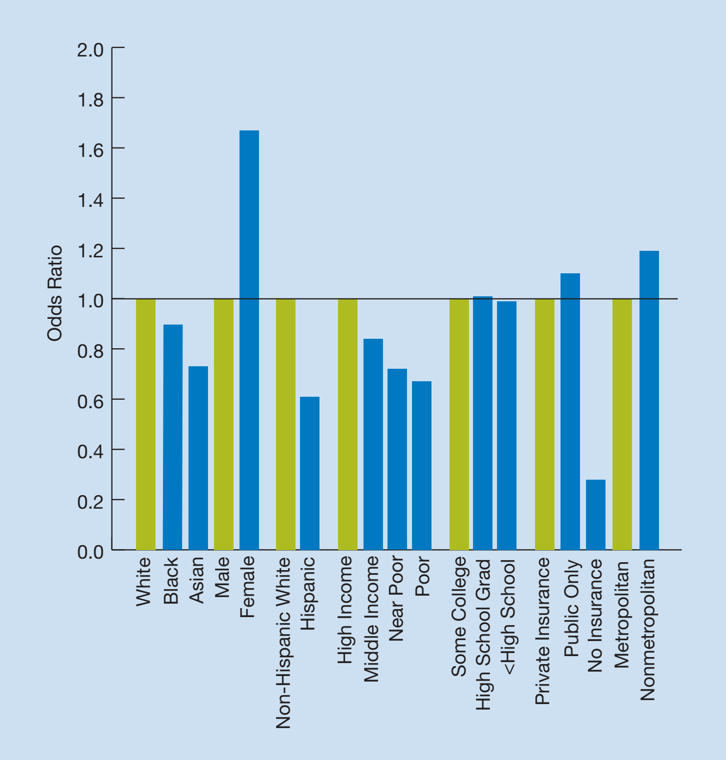
Reference population: Analyses by race, ethnicity, and income performed for civilian noninstitutionalized population of all ages. Analyses by education performed for civilian noninstitutionalized population age 18 and over.

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 2005, the gap between Asians and Whites remained the same. In 2005, Asians were less likely than Whites to have a usual primary care provider (70.2% compared with 77.5%; Figure 3.7).
- The gap between Hispanics and non-Hispanic Whites remained the same. In 2005, the percentage of people with a usual primary care provider was significantly lower for Hispanics than for non-Hispanic Whites (64.6% compared with 80.4%).
- The gap between poor people and high-income people remained the same. In 2005, the proportion of people with a usual primary care provider was significantly lower for poor people than for high-income people (70.4% compared with 81.1%).
- The gap between people with less than a high school education and people with some college remained the same. In 2005, the proportion 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 (66.5% compared with 74.9%).
- No group has yet achieved the Healthy People 2010 target of 85% of Americans with a usual primary care provider.

Each year, multivariate analyses are conducted in support of the NHDR to identify the independent effects of race, ethnicity, and SES on access to health care. Past reports have listed some of these findings. Figure 3.8 shows the results of a multivariate model for people who have a usual primary care provider. Adjusted odds ratios are shown to quantify the relative magnitude of disparities after controlling for a number of confounding factors.

Figure 3.8. People ages 18-64 with a usual primary care provider: Adjusted odds ratios, 2002-2005



Key: 🟩 = reference group.

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2005.

Reference population: Civilian noninstitutionalized population ages 18-64.

Note: Adjusted odds ratios are calculated from logistic regression models controlling for race, ethnicity, income, education, age, gender, insurance, and residence location. White, male, non-Hispanic White, high income, some college, private insurance, and metropolitan are reference groups with odds ratio = 1; odds ratios <1 indicate that a group is less likely to receive service than the reference group. For example, compared with individuals with private insurance, individuals with no insurance had 0.3 times the odds of reporting a usual primary care provider after controlling for other factors. Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders and for American Indians and Alaska Natives.

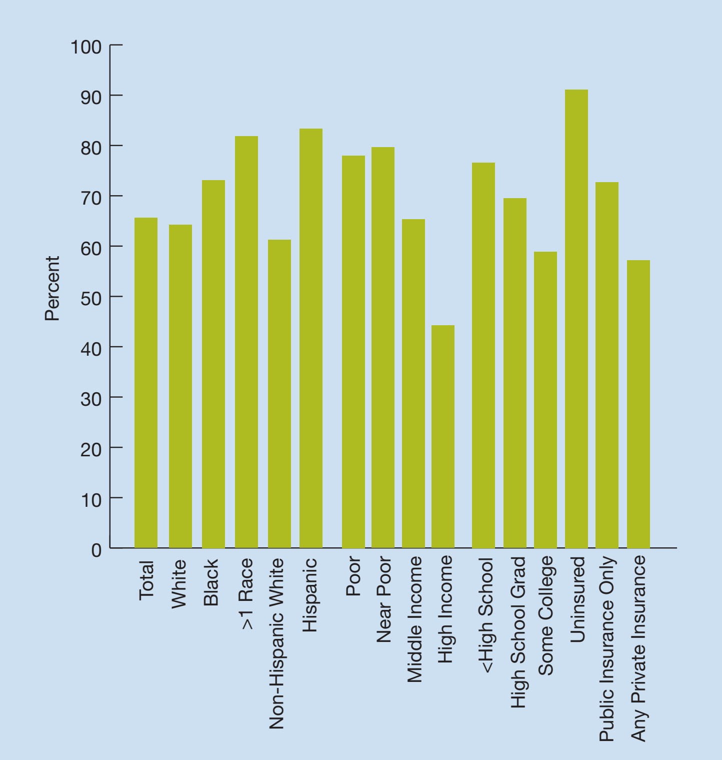
From 2002 to 2005, in multivariate models controlling for race, gender, ethnicity, income, education, insurance, and residence location:

- Blacks had 0.9 times the odds and Asians had 0.7 times the odds of having a usual primary care provider compared with Whites (Figure 3.8).
- Females had 1.7 times the odds of having a usual primary care provider compared with males.
- Hispanics had 0.6 times the odds of having a usual primary care provider compared with non-Hispanic Whites.
- Poor individuals had 0.7 times the odds of having a primary care provider compared with high-income individuals.
- Individuals with no health insurance had 0.3 times the odds of having a usual primary care provider compared with individuals with private insurance.
- Individuals within nonmetropolitan areas had 1.2 times the odds of having a usual primary care provider compared with individuals within metropolitan areas.

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 3.9. 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, 2005



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2005.

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 higher for Blacks and people of multiple race than for Whites (73.1% and 81.8% respectively, compared with 64.2%; Figure 3.9) and higher for Hispanics than for non-Hispanic Whites (83.3% compared with 61.2%).
- 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 (78.0%), near-poor (79.6%), and middle-income (65.3%) people than for high-income people (44.2%).
- 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 higher for people with no health insurance than for people with private insurance (91.1% compared with 57.2%).

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,[1,18] 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.[19]

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[20] provided about 960 million office visits[21] and 673 million hospital outpatient visits[22] and treated 37 million hospitalized patients[23] and 1.4 million nursing home residents.[23] About 70% of the civilian noninstitutionalized population visit a medical provider's office or outpatient department, about 60% receive a prescription medicine, and about 40% visit a dental provider each year.[24]

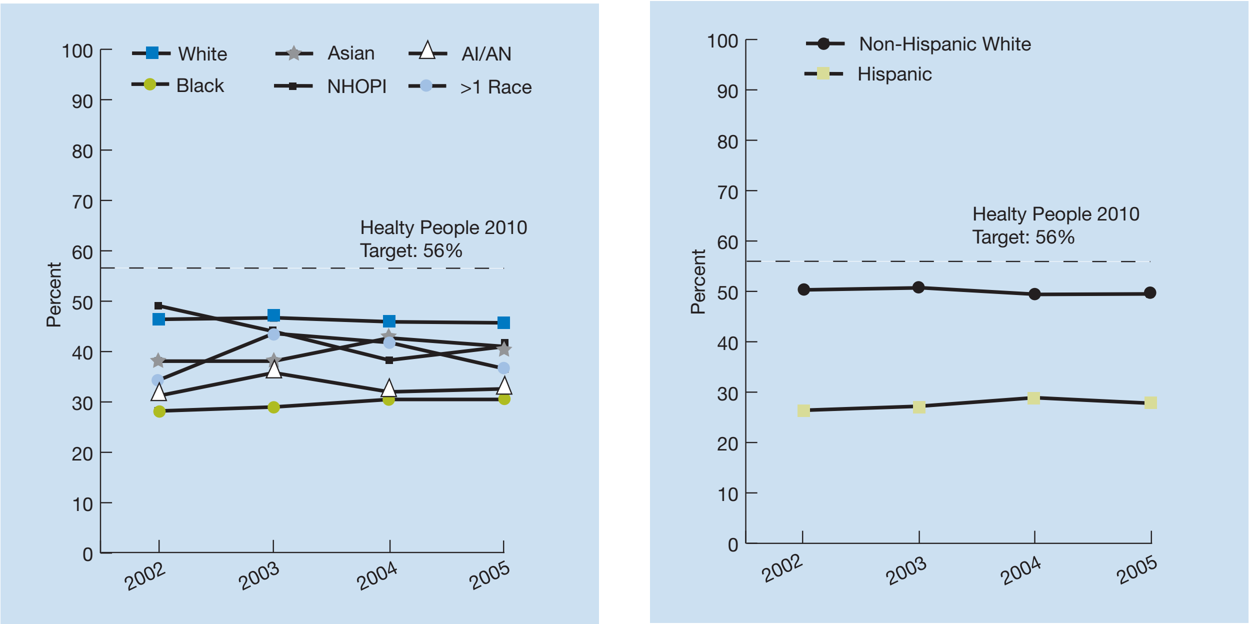
National health expenditures totaled over $2 trillion in fiscal year 2006, nearly double those of a decade earlier.[25] Health expenditures among the civilian noninstitutionalized population in America are extremely concentrated, with 5% of the population accounting for 55% of outlays.[26] In addition, a study using earlier data estimated that as much as $420 billion a year—almost one-third of all health care expenditures—are the result of low-quality care, including overuse, misuse, and waste.[27]

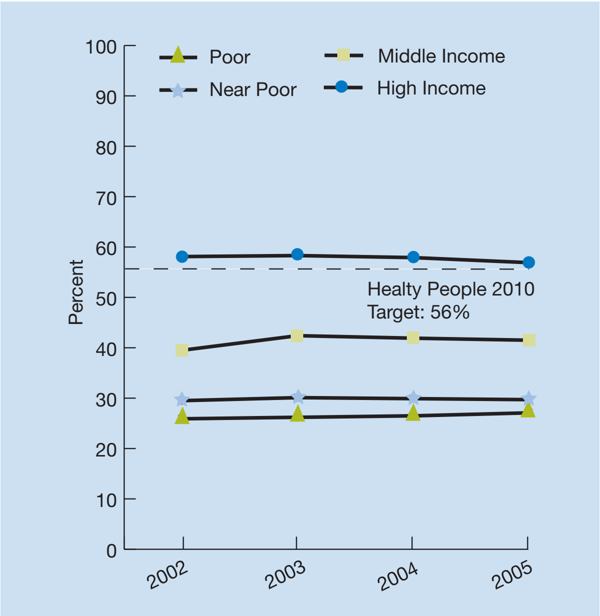
Previous NHDRs reported that different racial, ethnic, and socioeconomic groups had different patterns of health care utilization. Asians and Hispanics tended to have lower use of most health care services, including routine care, emergency department visits, avoidable admissions, and mental health care. 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. In this section, findings related to dental care, emergency department visits, potentially avoidable admissions, and mental health care and substance abuse treatment are highlighted.

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.[28]

Figure 3.10. People who had a dental visit in the calendar year, by race (top left), ethnicity (top right), and income (bottom left), 2002-2005





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

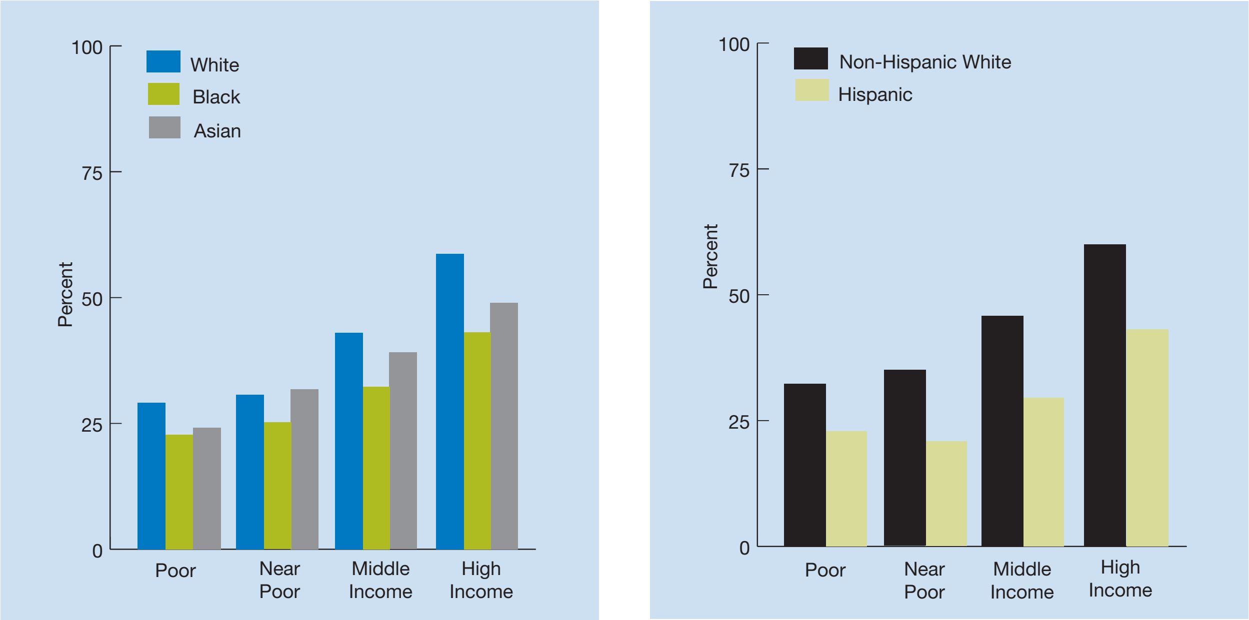
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2005.

Reference population: 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 2005 across racial, ethnic, or income categories (Figure 3.10).
- From 2002 to 2005, the gap between Blacks and Whites in the percentage of people with a dental visit in the calendar year remained the same. In 2005, the percentage was significantly lower for Blacks than for Whites (30.5% compared with 45.7%).
- During the same period, the gap between Hispanics and non-Hispanic Whites remained the same. In 2005, the percentage was significantly lower for Hispanics than for non-Hispanic Whites (27.8% compared with 49.5%).
- In 2005, the gap between poor people and high-income people remained the same. The percentage was significantly lower for poor (27.1%), near-poor (29.7%), and middle-income people (41.5%) than for high-income people (56.9%).
- Only high-income people met the Healthy People 2010 target of 56% of people with a dental visit in the past year.

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

Figure 3.11. People who had a dental visit in the calendar year, by race (left) and ethnicity (right), stratified by income, 2005



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2005.

Reference population: Civilian noninstitutionalized population, all ages.

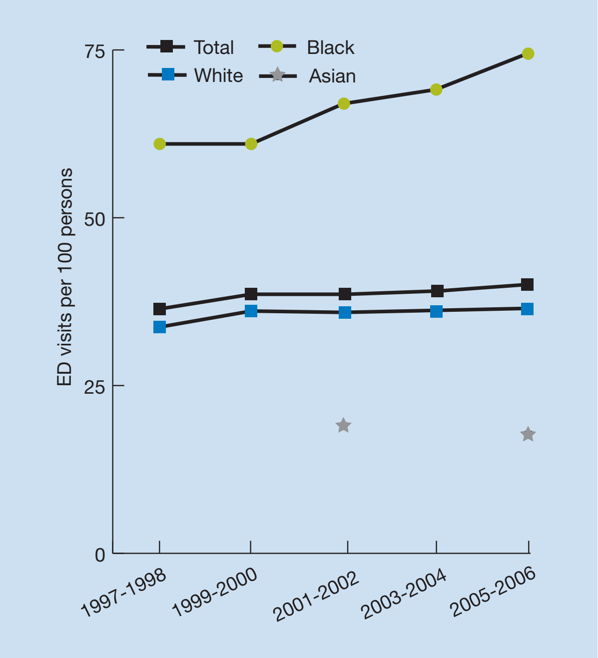
Note: Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders and for American Indians and Alaska Natives.

- SES explains some, but not all, of the racial and ethnic differences in rates of dental visits (Figure 3.11).
- In all income categories, Blacks were significantly less likely than Whites to have had a dental visit in the calendar year (poor, 22.8% for Blacks versus 29.1% for Whites; near poor, 25.2% for Blacks versus 30.7% for Whites; middle income, 32.3% for Blacks versus 43.0% for Whites; and high income, 43.1% for Blacks versus 58.7% for Whites).
- Hispanics at every income level were significantly less likely than non-Hispanic Whites to have had a dental visit (poor, 22.9% of Hispanics versus 32.3% of non-Hispanic Whites; near poor, 20.8% of Hispanics versus 34.9% of non-Hispanic Whites; middle income, 29.5% of Hispanics versus 45.8% of non-Hispanic Whites; high income, 43.1% of Hispanics versus 60.0% 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 care is urgent often results in poorer health outcomes and increased health care costs.

Figure 3.12. Emergency department visits per 100 population in the calendar year, by race, 1997-1998, 1999-2000, 2001-2002, 2003-2004, and 2005-2006



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey, 1997-1998, 1999-2000, 2001-2002, 2003-2004, and 2005-2006.

Denominator: Civilian noninstitutionalized population, all ages.

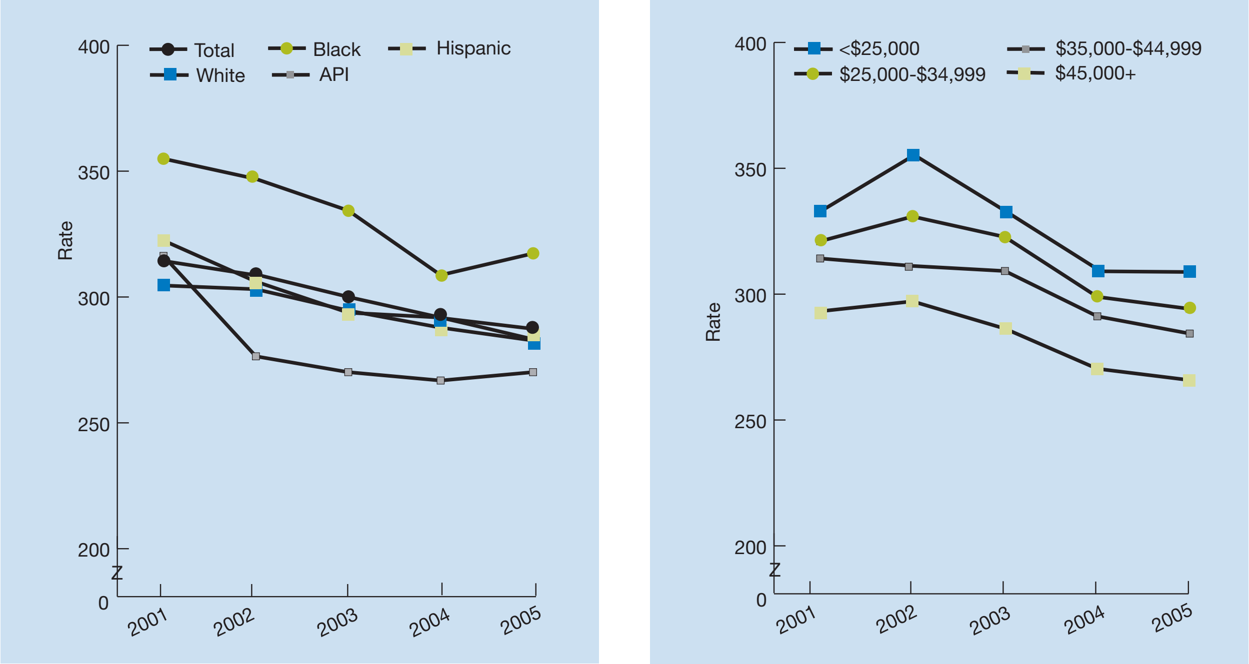
Note: Data did not meet criteria for statistical reliability for Asians (for data years 1997-1998, 1999-2000, and 2003-2004) and Native Hawaiians and Other Pacific Islanders.

- From 1997-1998 to 2005-2006, the rate of ED visits remained the same except for Blacks (Figure 3.12).
- During this period, the gap between Blacks and Whites increased. In 2005-2006, the rate of ED visits was more than twice as high for Blacks as for Whites (74.5 per 100 population compared with 36.5 per 100 population).
- In 2005-2006, the rate of ED visits was lower for Asians than for Whites (17.7 per 100 population compared with 36.5 per 100 population).
- In 2005-2006, the rate of ED visits was higher for females than for males (42.5 per 100 population compared with 37.5 per 100 population; data not shown).

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.[29] For example, better access to care should reduce the percentage of appendicitis admissions in which rupture has already occurred.

Figure 3.13. Perforated appendixes per 1,000 admissions with appendicitis, by race/ethnicity (left) and area income (median income of ZIP Code of residence) (right), 2001-2005



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, 2001-2005.

Denominator: Patients hospitalized with appendicitis, age 18 and over.

Note: White, Black, and API are non-Hispanic groups. Numeric income categories are used instead of the NHDR's usual descriptive categories because that is how data are collected for this measure. 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 23 States that have 64% of the U.S. resident population. Data for American Indians and Alaska Natives from NPIRS can be found in Chapter 4 but is not collected by this data source.

- From 2001 to 2005, the gap between Blacks and Whites in the rate of hospital admissions for perforated appendix decreased (Figure 3.13). In 2005, Blacks had a higher rate than Whites (317.3 per 1,000 compared with 282.7 per 1,000).
- In 2005, APIs and Whites were not significantly different in the rate of hospital admissions for perforated appendix.

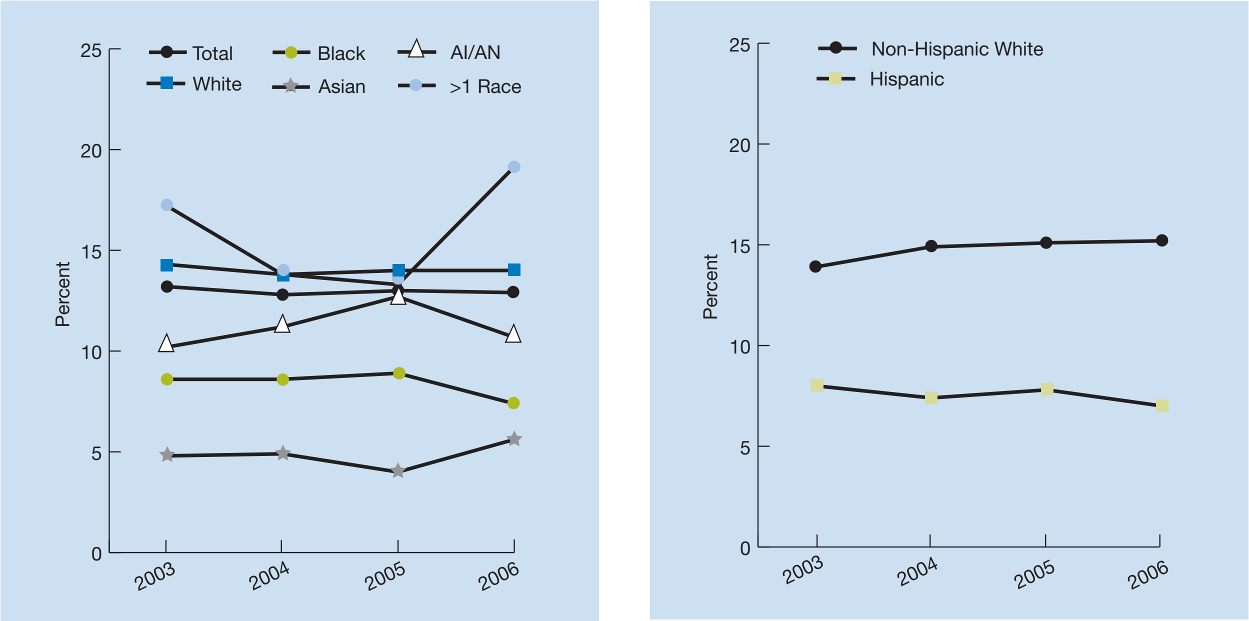
- The gap between Hispanics and non-Hispanic Whites was eliminated. In 2005, there was no statistically significant difference between Hispanics and Whites (283.2 per 1,000 compared with 282.7 per 1,000).
- From 2001 to 2005, the gap between people living in poor communities and those living in high-income communities in the rate of hospital admissions for perforated appendix increased. In 2005, people living in poor communities had a higher rate than those living in high-income communities (308.8 per 1,000 compared with 265.8 per 1,000).

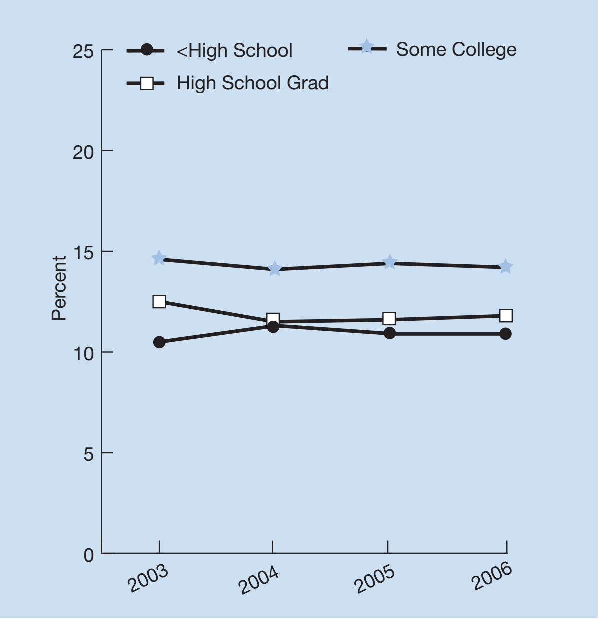
Mental Health Care and Substance Abuse Treatment

Mental Health Care

Although the prevalence of mental disorders for racial and ethnic minorities in the United States is similar to that for Whites,[30] minorities have less access to mental health care and are less likely to receive needed services.[31] These differences may reflect, in part, variation in preferences and cultural attitudes toward mental health.[32]

Figure 3.14. Adults who received mental health treatment or counseling in the last 12 months, by race (left), ethnicity (right), and education (next page top left), 2003-2006





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

Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2003-2006.

Reference population: U.S. population age 18 and over.

Note: Data were insufficient for this analysis for Native Hawaiians and Other Pacific Islanders.

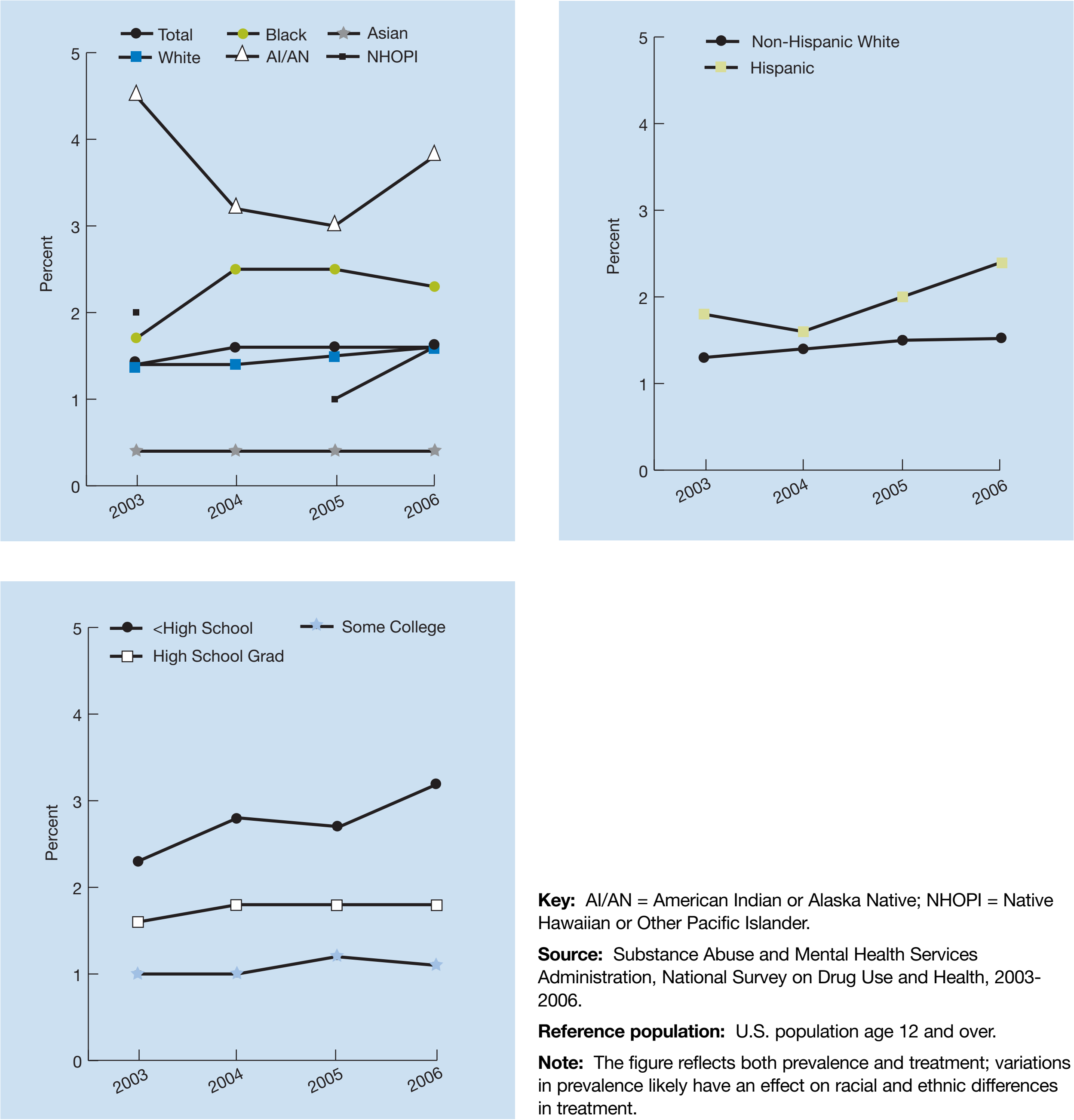
- From 2003 to 2006, the gap between Blacks and Whites remained the same (Figure 3.14). In 2006, Blacks were significantly less likely than Whites to receive mental health treatment or counseling (7.4% compared with 14.0%).
- In 2006, there was no statistically significant difference between AI/ANs and Whites.
- The gap between Asians and Whites in the percentage of people who received mental health treatment or counseling remained the same. In 2006, the percentage of Asians was less than half that of Whites (5.6% compared with 14.0%).
- The gap between Hispanics and non-Hispanic Whites remained the same. In 2006, the percentage of Hispanics was less than half that of non-Hispanic Whites (7.0% compared with 15.2%).
- 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 2006, the percentage was lower for people with less than a high school education (10.9%) and for people with a high school education (11.8%) than for people with some college education (14.2%).
- In 2006, there were no statistically significant differences between people of different income levels in the receipt of mental health treatment or counseling (data not shown).

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.[32] 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.[33]

Racial, ethnic, and socioeconomic differences in substance abuse treatment[32] may, in part, reflect variation in preferences and cultural attitudes toward mental health and substance abuse.

Figure 3.15. People age 12 and over who received any treatment for illicit drug or alcohol abuse in the last 12 months, by race (top left), ethnicity (top right), and education (bottom left), 2003-2006



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, 2003-2006.

Reference population: U.S. population age 12 and over.

Note: The figure reflects both prevalence and treatment; variations in prevalence likely have an effect on racial and ethnic differences in treatment.

- From 2003 to 2006, 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 (Figure 3.15). In 2005, the percentage was more than two times higher for AI/ANs than for Whites (3.8% compared with 1.6%).
- During this period, the gap between Asians and Whites in the percentage of people age 12 and over who received drug or alcohol abuse treatment remained the same. In 2006, the percentage of people age 12 and over who received any treatment for illicit drug or alcohol abuse was lower for Asians than for Whites (0.4% compared with 1.6%).
- During this period, there were no significant differences between Hispanics and non-Hispanic Whites.
- The gap between people with less than a high school education and people with some college education increased. In 2006, the percentage was more than two times higher for people with less than a high school education than for people with some college education (3.2% compared with 1.1%).

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]	↓				↓	↓
People unable to get or delayed in getting needed care due to financial or insurance reasons[iv]	=	=			↓	↓

[i] Compared with Whites.

[ii] Compared with non-Hispanic Whites.

[iii] Source: National Health Interview Survey, 2006.

[iv] Source: Medical Expenditure Panel Survey, 2005.

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 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]	↓	↓	↑	↓	↓	↓
People unable to get or delayed in getting needed care due to financial or insurance reasons[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, 2006.

[v] Source: Medical Expenditure Panel Survey, 2005.

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[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 older 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, 2005.

[iv] Source: HCUP SID disparities analysis file, 2005. 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, 2006.

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[iv]	↓	↓	↑	↓	↓	↓
Avoidable Admissions						
Perforated appendixes per 1,000 admissions with appendicitis	↓	↓	↑			↓
Mental Health Care and Substance Abuse Treatment						
Adults who received mental health treatment or counseling in the last 12 months[v]	=	=	=	=	=	
Persons age 12 and older 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, 2005.

[v] Source: Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health, 2006. 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.

References

1. Millman M, ed. Institute of Medicine, Committee on Monitoring Access to Personal Health Care Services. Access to health care in America. Washington, DC: National Academy Press; 1993.

2. Bierman A, Magari ES, Jette AM, et al. Assessing access as a first step toward improving the quality of care for very old adults. J Ambul Care Manage 1998 Jul;121(3):17-26.

3. Hadley J. Insurance coverage, medical care use, and short-term health changes following an unintentional injury or the onset of a chronic condition. JAMA 2007;297(10):1073-84. Available at: http://jama.ama-assn.org/cgi/reprint/297/10/1073?ijkey = n3EAhc0mdQ3nc&keytype = ref&siteid = amajnls. Accessed September 20, 2008.

4. Insuring America's health: principles and recommendations. Acad Emerg Med 2004;11(4):418-22.

5. Self-assessed health status and selected behavioral risk factors among persons with and without health-care coverage—United States, 1994-1995. MMWR Morb Mortal Wkly Rep 1998 Mar 13;47(9):176-80. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/00051507.htm.

6. Jacoby MB, Sullivan TA, Warren E. Medical problems and bankruptcy filings. Norton Bankruptcy Law Adviser 2000 May;5:1-12.

7. Hadley J. Sicker and poorer: the consequences of being uninsured. Paper prepared for the Kaiser Commission on Medicaid and the Uninsured. Washington, DC: The Urban Institute; May 2002 (updated February2003).

8. DeNavas-Walt C, Proctor BD, Lee CH, U.S. Census Bureau. Income, poverty, and health insurance coverage in the United States: 2005. Current Population Reports, P60-231. Washington, DC: Government Printing Office; 2006. Available at: http://www.census.gov/prod/2006pubs/p60-231.pdf. Accessed June 7, 2006.

9. Starfield B, Shi L. The medical home, access to care, and insurance. Pediatrics 2004;113(5 Suppl):1493-8.

10. De Maeseneer JM, De Prins L, Gosset C, et al. Provider continuity in family medicine: does it make a difference for total health care costs? Ann Fam Med 2003;1:144-8.

11. U.S. Department of Health and Human Services. Healthy People 2010, 2nd ed. With Understanding and improving health and objectives for improving health. 2 vols. Washington, DC: Government Printing Office; November 2000. p.45. Available at: http://www.healthypeople.gov.

12. Phillips RL, Proser M, Green LA, et al. The importance of having health insurance and a usual source of care. One-Pager Number 29. Washington, DC: The Robert Graham Center: Policy Studies in Family Practice and Primary Care; September 2004. Available at: http://www.graham-center.org/online/graham/home/publications/onepagers/2004/op29-importance-insurance.html. Accessed October 30, 2007.

13. Mainous 3rd AG, Baker R, Love MM, et al. Continuity of care and trust in one's physician: evidence from primary care in the United States and the United Kingdom. Fam Med 2001 Jan;33(1):22-7.

14. Starfield B. Primary care: balancing health needs, services and technology. New York: Oxford University Press; 1998.

15. Forrest C, Starfield B. The effect of first-contact care with primary care clinicians on ambulatory health care expenditures. J Fam Pract 1996 Jul;43(1):40-8.

16. Parchman ML, Burge SK. Residency Research Network of South Texas investigators. Continuity and quality of care in type 2 diabetes: a Residency Research Network of South Texas study. J Fam Pract 2002 Jul;51(7):619-24.

17. Inkelas M, Schuster MA, Olson LM, et al. Continuity of primary care clinician in early childhood. Pediatrics 2004 June;113(6 Suppl):1917-25.

18. U.S. Department of Health and Human Services. Report of the Secretary's Task Force on Black and Minority Health. Washington, DC: DHHS; 1985.

19. Swift EK, ed. Institute of Medicine, Committee on Guidance for Designing a National Healthcare Disparities Report. Guidance for the National Healthcare Disparities Report. Washington, DC: National Academies Press; 2002. p. 20.

20. Table 105: Persons employed in health service sites, by sex: United States, selected years 2000-2006. In: 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 September 18, 2008.

21. Table 92: Visits to physician offices and hospital outpatient and emergency departments, by selected characteristics: United States, selected years 1995-2005. In: 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 September 18, 2008.

22. Table 103: Hospital admissions, average length of stay, outpatient visits, and outpatient surgery by type of ownership and size of hospital: United States, selected years 1975-2005. In: 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 September 18, 2008.

23. Table 104: Nursing homes, beds, occupancy, and residents, by geographic division and State: selected years 1995-2005. In: 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 September 18, 2008.

24. Krauss N, Machlin S, Kass BL. Use of health care services, 1996. Rockville, MD: Agency for Health Care Policy and Research, 1999. MEPS Findings No. 7, AHCPR Publication No. 99-0018.

25. Office of the Actuary. National health expenditure data/historical. Baltimore: Centers for Medicare & Medicaid Services. Available at: http://www.cms.hhs.gov/NationalHealthExpendData/downloads/tables.pdf. Accessed September 18, 2008.

26. Berk ML, Monheit AC. The concentration of health care expenditures, revisited. Health Aff 2001 Mar-Apr;20(2):9-18.

27. Reducing the costs of poor-quality health care through responsible purchasing leadership. Chicago: Midwest Business Group on Health; 2003. Available at: http://www.mbgh.org/templates/UserFiles/Files/COPQ/copq%202nd%20printing.pdf. Accessed October 30, 2007.

28. Fryer GE, Dovey SM, Green LA. The importance of having a usual source of health care. One-Pager Number 2. Washington, DC: The Robert Graham Center: Policy Studies in Family Practice and Primary Care; January 2000. Available at: http://www.graham-center.org/online/graham/home/publications/onepagers/2000/op2-usual-source.html. Accessed October 30, 2007.

29. Oster A, Bindman AB. Emergency department visits for ambulatory care sensitive conditions: insights into preventable hospitalizations. Med Care 2003 Feb;41(2):198-207.

30. Office of Applied Studies. The NSDUH report: co-occurring major depressive episode (MDE) and alcohol use disorder among adults. Rockville, MD: Substance Abuse and Mental Health Services Administration; February 2007. Available at: http://www.oas.samhsa.gov/2k7/alcDual/alcDual.cfm. Accessed May 30, 2007.

31. Center for Mental Health Services. Mental health: culture, race and ethnicity—a supplement to Mental Health: Report of the Surgeon General. Executive Summary. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2001. Available at: http://mentalhealth.samhsa.gov/cre/default.asp.

32. Office of Applied Studies. Results from the 2006 National Survey on Drug Use and Health: national findings. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2007. NSDUH Series H-32, DHHS Publication No. SMA 07-4293. Available at: http://www.oas.samhsa.gov/NSDUH/2K6NSDUH/2K6results.cfm.

33. Mark T, Coffey RM, McKusick D, et al. National expenditures for mental health services and substance abuse treatment, 1991-2001. Rockville, MD: Substance Abuse and Mental Health Services Administration; 2005. DHHS Publication No. SMA 05-3999. Available at: http://www.samhsa.gov/spendingestimates/SEPGenRpt013105v2BLX.pdf. Accessed on July 31, 2007.

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 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. This year, the National Healthcare Disparities Report's (NHDR) section on low-income groups focuses on examining differences in quality of care and access to care by insurance status.

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.

---

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

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 (age 0-17).
- Older adults (age 65 and over).
- Residents of rural areas.[iv]
- 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 (focus on uninsured people).
- Women.
- Children.
- Older adults.
- Residents of rural areas.
- Individuals with disabilities or special health care needs.

[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 2005 the Federal poverty threshold for a family of two adults and two children was $19,806.

[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.

[v] Individuals with special health care needs include children with special health care needs, defined as those 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.

Priority Populations

To avoid repetition of from 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.

The measures discussed in this chapter are the following:

Section	Measure
Blacks or African Americans	
Asians	
Native Hawaiians and Other Pacific Islanders	Cholesterol screening Influenza and pneumococcal vaccinations for older adults Health insurance
American Indians and Alaska Natives	
Hispanics or Latinos	
Recent Immigrants and Limited-English-Proficient Populations	Tuberculosis therapy Poor communication with health providers Health insurance Language assistance
Low-Income Groups Focus on Uninsurance	Colorectal cancer screening Counseling parents about physical activity in children Dental care
Women	Pregnant women receiving prenatal care in the first trimester Adults with obesity given advice about physical activity Acute myocardial infarction mortality New AIDS cases Usual source of care

Section	Measure
Children	Early childhood vaccinations Counseling to parents about physical activity Vision screening Accidental puncture or laceration during procedure Hospital admissions with perforated appendix Health insurance
Older Adults	Influenza vaccination Vision screening Delayed care due to cost Health literacy
Residents of Rural Areas	Pregnant women receiving prenatal care in the first trimester Recommended services for diabetes Recommended care for colorectal cancer Care for illness or injury as soon as wanted Health insurance
Individuals With Disabilities or Special Health Care Needs	*Adults with disabilities* Pneumococcal vaccination for adults age 65 and over Private health insurance for adults ages 18-64 Source of ongoing care Hospital, emergency room, or clinic as source of ongoing care
	Children with special health care needs Effective care coordination Family-centered care Health insurance Adequacy of health insurance

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, and 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 38% 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.

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 at different points in time. 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 (see 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

---

[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.

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 in information for some racial and ethnic minorities exist, which 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 in which data are gradually improving.

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

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	77 (n = 35)	50 (n = 4)
Asian	White	82 (n = 22)	60 (n = 5)
AI/AN	White	67 (n = 15)	33 (n = 3)
Hispanic	Non-Hispanic White	65 (n = 31)	50 (n = 4)

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

Note: "Not improving" is defined for quality measures as population received about the same or worse quality of care as Whites or non-Hispanic Whites; and for access measures, as population 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 measures include data for all ages and some are age-group specific. Refer to 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

Group	Preventive services	Acute illness treatment	Chronic disease management	Patient safety	Timeliness	Patient centeredness	Access
Black vs. White	Adults age 50 and over who received colorectal cancer screening	Patients with tuberculosis who completed treatment within 1 year of initiation of treatment	Colorectal cancer diagnosed at advanced stage	Adults age 65 and over who received potentially inappropriate prescription medicines	Adults who can sometimes or never get care for illness or injury as soon as wanted	Adults with poor provider-patient communication	People with a usual primary care provider
	Children ages 2-17 for whom a health provider ever gave advice about physical activity		Adults age 40 and over with diagnosed diabetes who received all three recommended services				
	Adults age 65 and over who ever received pneumococcal vaccination		Hospital admissions for lower extremity amputations per 1,000 population age 18 and over with diabetes				
	Adult current smokers who received advice to quit smoking		Adults with a major depressive episode who received treatment for depression				

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

Group	Preventive services	Acute illness treatment	Chronic disease management	Patient safety	Timeliness	Patient centeredness	Access
			Adult home health care patients whose ability to walk or move around improved				
Asian vs. White	Adults age 50 and over who received colorectal cancer screening		Colorectal cancer diagnosed at advanced stage	Adult surgery patients who received appropriate timing of antibiotics	Adults who can sometimes or never get care for illness or injury as soon as wanted	Adults with poor provider-patient communication	People with a specific source of ongoing care
	Adults age 65 and over who ever received pneumococcal vaccination		Adult hemodialysis patients with adequate dialysis (urea reduction ratio 65% or higher)				
			Dialysis patients who were registered on a waiting list for transplantation				
			Short-stay nursing home residents with pressure sores				

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

Group	Preventive services	Acute illness treatment	Chronic disease management	Patient safety	Timeliness	Patient centeredness	Access
American Indian or Alaska Native vs. White	Adults age 50 and over who received colorectal cancer screening		Adult hemodialysis patients with adequate dialysis (urea reduction ratio 65% or higher)				People under age 65 who were uninsured all year
			Long-stay nursing home residents with physical restraints				
			Adult home health care patients who were admitted to the hospital				
Hispanic vs. non-Hispanic White	Adults age 50 and over who received colorectal cancer screening	Patients with tuberculosis who complete treatment within 12 months of initiation of treatment	Adult hemodialysis patients with adequate dialysis (urea reduction ratio 65% or higher)	Adults age 65 and over who received potentially inappropriate prescription medicines			
	Adults age 65 and over who ever received pneumococcal vaccination		Adults with obesity who received advice to exercise more	Adult surgery patients who received appropriate timing of antibiotics			

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

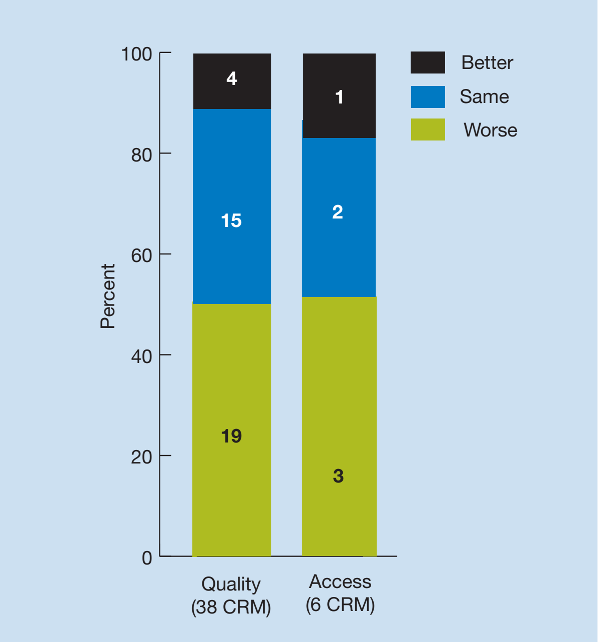
Group	Preventive services	Acute illness treatment	Chronic disease management	Patient safety	Timeliness	Patient centeredness	Access
			Adults age 18 and over with a major depressive episode who received treatment for depression				
Poor-high income	Adults age 50 and over who received colorectal cancer screening		Adults age 40 and over with diagnosed diabetes who received all three recommended services		Adults who can sometimes or never get care for illness or injury as soon as wanted	Adults with poor provider-patient communication	
	Children ages 19-35 months who received all recommended vaccines		People age 12 and over who needed treatment for illicit drug use and who received such treatment at a specialty facility in the last 12 months			Children with poor provider-patient communication	People without a usual source of care who indicated 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 (see 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 (see Table 1.2).

Note: Data presented are the most recent available.

Table 4.3. Blacks compared with Whites on measures of quality and access: 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	
		Colorectal cancer deaths per 100,000 population per year	

Table 4.3. Blacks compared with Whites on measures of quality and access: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
Diabetes		Hospital admissions for lower extremity amputations per 1,000 population age 18 and over with diabetes	Adults age 40 and over with diagnosed diabetes who received all three recommended services
End stage renal disease		Adult hemodialysis patients with adequate dialysis (urea reduction ratio 65% or greater)	
		Dialysis patients who were registered on a waiting list for transplantation	
Heart disease	Deaths per 1,000 adult hospital admissions with acute myocardial infarction (AMI)		Adult current smokers who received advice to quit smoking
	Recommended hospital care for heart failure		Recommended hospital care for heart attack
			Adults with obesity who ever received advice to exercise more
HIV and AIDS		New AIDS cases per 100,000 population age 13 and over	
Maternal and child health		Pregnant women who first received prenatal care in the first trimester	Children ages 2-17 for whom a health provider ever gave advice about physical activity
		Children ages 19-35 months who received all recommended vaccines	Children ages 3-6 who ever had their vision checked
Mental health and substance abuse	Suicide deaths per 100,000 population	Adults with a major depressive episode who received treatment for depression	People age 12 and over who needed treatment for illicit drug use and who received such treatment at a specialty facility in the last 12 months
		People age 12 and over treated for substance abuse who completed treatment course	

Table 4.3. Blacks compared with Whites on measures of quality and access: Specific measures

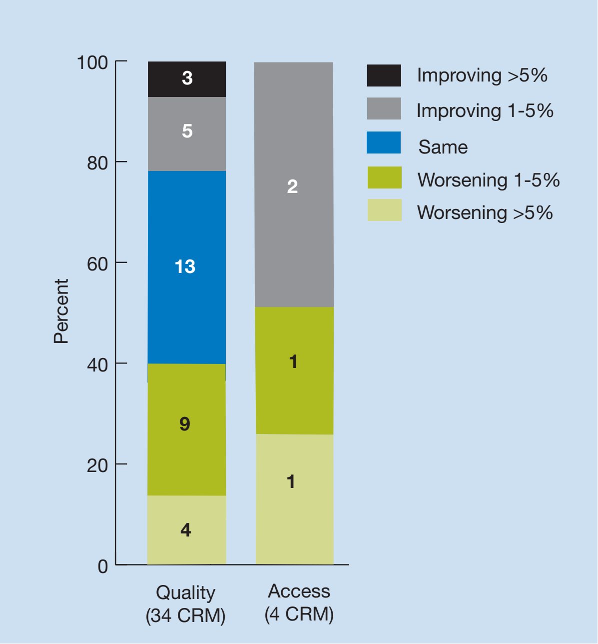
Topic	Better than Whites	Worse than Whites	Same as Whites
Respiratory diseases		Adults age 65 and over who ever received pneumococcal vaccination	Patients with tuberculosis who completed a curative course of treatment within 12 months of initiation of treatment
		Recommended hospital care for pneumonia	
Nursing home, home health, and hospice care	Long-stay nursing home residents with physical restraints	High-risk, long-stay nursing home residents with pressure sores	Adult home health care patients whose ability to walk or move around improved
		Short-stay nursing home residents with pressure sores	
		Adult home health care patients who were admitted to the hospital	
Patient safety			Adult surgery patients who received appropriate timing of antibiotics
			Adult surgery patients with postoperative complications
			Failure to rescue Central venous catheter-associated adverse events
			Adults age 65 and over who received potentially inappropriate prescription medicines
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	

Table 4.3. Blacks compared with Whites on measures of quality and access: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
Patient centeredness		Adults with poor provider-patient communication	Children with poor provider-patient communication
Access	People without a usual source of care who indicated a financial or insurance reason	People under age 65 who were uninsured all year	People under age 65 with health insurance
		People with a usual primary care provider	People with a specific source of ongoing care
		People unable to get or delayed in getting needed medical care, dental care, or prescription medicines	

- For 19 of the 38 core report measures of quality, Blacks had significantly poorer quality of care than Whites (Figure 4.1). For 4 of the core report measures, Blacks had better quality of care. For example, Black nursing home residents were less likely to be physically restrained, and Blacks were more likely to receive recommended care for heart failure than Whites.
- For 3 of the 6 core report measures of access, Blacks had significantly worse access to care than Whites. For example, Blacks were more likely than Whites to delay or not get medical care. For one measure (people without a usual source of care due to financial or insurance reasons), Blacks had better access to care than Whites.

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 ate 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 (see Table 1.2).

Note: The time period for this figure is the most recent and oldest years of data used in the NHDR. Only 38 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		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	
		Colorectal cancer deaths per 100,000 population per year	
Diabetes		Adults age 40 and over with diagnosed diabetes who received all three recommended services	
		Hospital admissions for lower extremity amputations per 1,000 population age 18 and over with diabetes	

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

Topic	Improving	Worsening	Same
End stage renal disease			Adult hemodialysis patients with adequate dialysis (urea reduction ratio 65% or greater)
			Dialysis patients who were registered on a waiting list for transplantation
Heart disease		Deaths per 1,000 admissions with acute myocardial infarction (AMI)	Adults with obesity who ever received advice to exercise more
			Adult current smokers who received advice to quit smoking
HIV and AIDS	New AIDS cases per 100,000 population age 13 and over		
Maternal and child health	Pregnant women who first received prenatal care in the first trimester	Childrens ages 2-17 for whom a health provider ever gave advice about physical activity	Children ages 19-35 months who received all recommended vaccines
	Children ages 3-6 who ever had their vision checked		
Mental health and substance abuse	People age 12 and over discharged for substance abuse treatment who completed treatment	Adults age 18 and over with a major depressive episode who received treatment for depression	People age 12 and over who needed treatment for illicit drug use and who received such treatment at a specialty facility in the last 12 months
			Suicide deaths per 100,000 population
Respiratory diseases		Adults age 65 and over who ever received pneumococcal vaccination	
		Patients with tuberculosis who completed a curative course of treatment within 12 months of initiation of treatment	

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

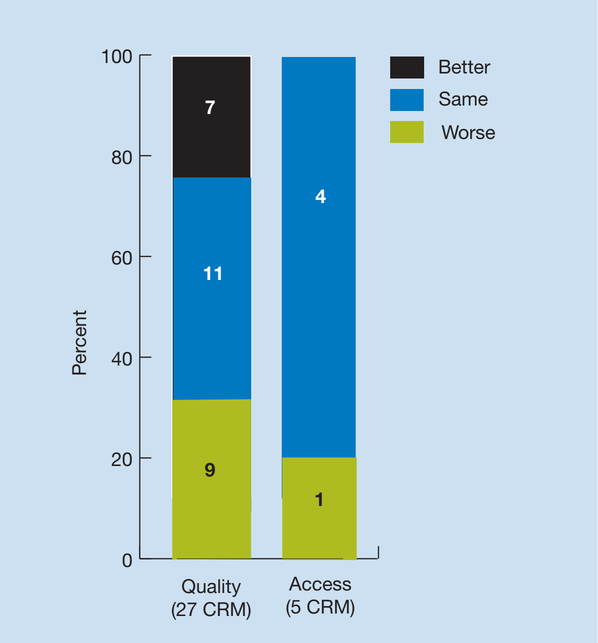
Topic	Improving	Worsening	Same
Nursing home, home health, and hospice care	Short-stay nursing home residents with pressure sores		Long-stay nursing home residents with physical restraints
			High-risk, long-stay nursing home residents with pressure sores
			Adult home health care patients who were admitted to the hospital
			Adult home health care patients whose ability to walk or move around improved
Patient safety	Failure to rescue	Adults age 65 and over who received potentially inappropriate prescription medicines	Adult surgery patients who received appropriate timing of antibiotics
	Central venous catheter-associated adverse events		
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		Adults with poor provider-patient communication	Children with poor provider-patient communication
Access	People under age 65 with health insurance	People with a usual primary care provider	People with a specific source of ongoing care
	People under age 65 who were uninsured all year		

- Of core report measures of quality that could be tracked over time for Blacks and Whites, Black-White differences became smaller for 8 measures and larger for 13 measures (Figure 4.2). For example, Black-White differences in central venous catheter-associated adverse events and new AIDS cases have decreased, but the difference in lower extremity amputations for patients with diabetes has increased. For 13 measures, Black-White differences did not change over time.
- Of core report measures of access that could be tracked over time for Blacks and Whites, Black-White differences became smaller for 2 measures and larger for 1 measure. For 1 measure, Black-White differences did not change over time.

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 the reports track. Findings based on core report measures of quality and access to health care that support estimates for either Asians or Asians and Pacific Islanders 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 (see Table 1.2).

Note: Data presented are the most recent available.

Table 4.5. Asians compared with Whites on measures of quality and access: 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	
	Colorectal cancer deaths per 100,000 population per year		
End stage renal disease	Adult hemodialysis patients with adequate dialysis (urea reduction ratio 65% or greater)		
	Dialysis patients who were registered on a waiting list for transplantation		

Table 4.5. Asians compared with Whites on measures of quality and access: Specific measures

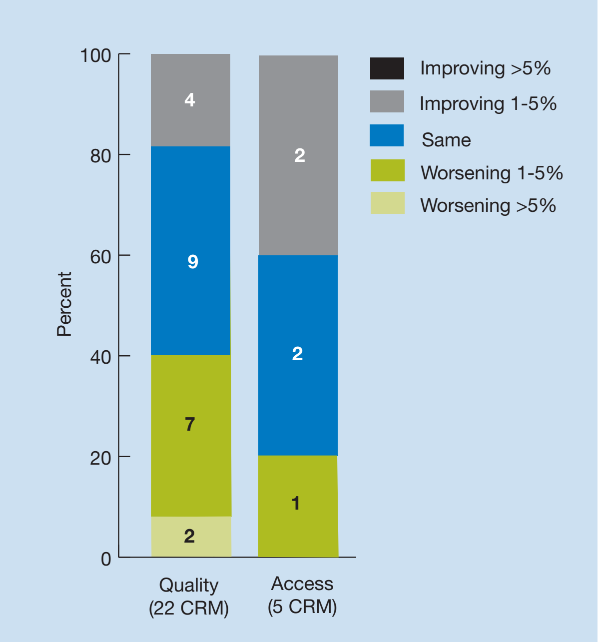
Topic	Better than Whites	Worse than Whites	Same as Whites
Heart disease			Deaths per 1,000 adult hospital admissions with acute myocardial infarction (AMI)
			Recommended hospital care for heart attack
			Recommended hospital care for heart failure
HIV and AIDS	New AIDS cases per 100,000 population age 13 and over		
Maternal and child health		Children ages 2-17 for whom a health provider ever gave advice about physical activity	Pregnant women who first received prenatal care in the first trimester
			Children ages 19-35 months who received all recommended vaccines
Mental health and substance abuse	Suicide deaths per 100,000 population		
Respiratory diseases		Adults age 65 and over who ever received pneumococcal vaccination	Patients with tuberculosis who completed a curative course of treatment within 12 months of initiation of treatment
		Recommended hospital care for pneumonia	

Table 4.5. Asians compared with Whites on measures of quality and access: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
Nursing home, home health, and hospice care	Adult home health care patients who were admitted to the hospital	Long-stay nursing home residents with physical restraints	High-risk, long-stay nursing home residents with pressure sores
			Adult home health care patients whose ability to walk or move around improved
			Short-stay nursing home residents with pressure sores
Patient safety		Adult surgery patients who received appropriate timing of antibiotics	Adults age 65 and over who received potentially inappropriate prescription medicines
		Failure to rescue	
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
Patient centeredness		Adults with poor provider-patient communication	
Access to care		People with a usual primary care provider	People under age 65 with health insurance
			People under age 65 who were uninsured all year
			People with a specific source of ongoing care
			People without a usual source of care who indicated a financial or insurance reason

- For 9 of the 27 core report measures of quality, Asians had significantly poorer quality of care than Whites. For example, Asians were less likely than Whites to get recommended care for pneumonia and to ever receive a pneumococcal vaccine. For 7 measures, Asians had significantly better quality of care than Whites (Figure 4.3). For example, Asian dialysis patients were more likely than Whites to have adequate dialysis and to be on a waiting list for transplantation.
- For 1 of the 5 core report measures of access, Asians had significantly worse access to care than Whites; Asians were less likely than Whites to have a usual primary care provider. Asians had the same access to care as Whites for 4 of the 5 measures. For example, there was no statistically significant difference between Asians and Whites in having a usual source of care.

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 (see Table 1.2).

Note: The time period for this figure is the most recent and oldest years of data used in the NHDR. Only 27 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	Colorectal cancer deaths per 100,000 population per year	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	
End stage renal disease		Adult hemodialysis patients with adequate dialysis (urea reduction ratio 65% or greater)	
		Dialysis patients who were registered on a waiting list for transplantation	
Heart disease	Deaths per 1,000 adult hospital admissions with acute myocardial infarction (AMI)		
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		Pregnant women who first received prenatal care in the first trimester
			Children ages 2-17 for whom a health provider ever gave advice about physical activity
Mental health and substance abuse			Suicide deaths per 100,000 population

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

Topic	Improving	Worsening	Same
Respiratory diseases		Adults age 65 and over who ever received pneumococcal vaccination	Patients with tuberculosis who completed a curative course of treatment within 12 months of initiation of treatment
Nursing home, home health, and hospice care		Short-stay nursing home residents with pressure sores	Long-stay nursing home residents with physical restraints
			High-risk, long-stay nursing home residents with pressure sores
			Adult home health care patients whose ability to walk or move around improved
			Adult home health care patients who were admitted to the hospital
Patient safety		Adult surgery patients who received appropriate timing of antibiotics	Failure to rescue
Timeliness		Adults who can sometimes or never get care for illness or injury as soon as wanted	
Patient centeredness		Adults with poor provider-patient communication	
Access to care	People under age 65 who were uninsured all year	People with a specific source of ongoing care	People under age 65 with health insurance
	People with a usual primary care provider		People without a usual source of care who indicated a financial or insurance reason

- Of core report measures of quality that could be tracked over time for Asians and Whites, Asian-White differences became smaller for 4 measures but larger for 9 measures (Figure 4.4). For 9 measures, Asian-White differences did not change over time.
- Of core report measures of access that could be tracked over time for Asians and Whites, Asian-White differences became smaller for 2 measures but larger for 1 measure. For 2 measures, the Asian-White differences did not change over time.

Native Hawaiians and Other Pacific Islanders

The ability to assess disparities among NHOPIs for the NHDR has been hampered 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.

Consequently, in previous NHDRs, estimates for the NHOPI population could be generated for only a handful of NHDR 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 the quality of care for people who identified themselves as NHOPI (including people of mixed race who identified primarily as NHOPI). These measures include cholesterol screening, influenza and pneumococcal vaccinations, and health insurance.

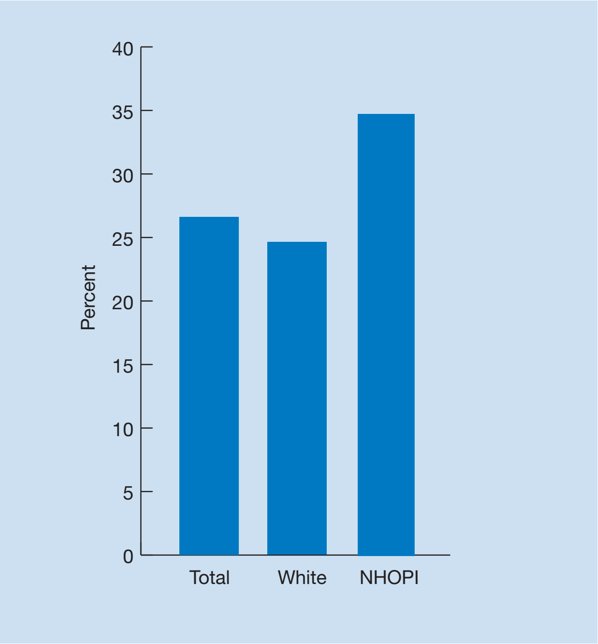
Data from BRFSS does not replace the need for continued efforts to improve data collection and statistical methods to provide more information on health and health care of the NHOPI population. While BRFSS may have larger samples of NHOPIs due to State efforts to improve sample sizes, the survey is not 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. Also, 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.

The percentage of adults who did not receive a cholesterol check in the past 5 years was significantly higher for Native Hawaiians and Other Pacific Islanders.

Preventive Care: Cholesterol Screening

In the State of Hawaii, where 54% of Native Hawaiians reside, cardiovascular disease is the leading cause of death.[8] Screening for risk factors for cardiovascular disease such as high blood pressure and high cholesterol are important in preventing disease. Cholesterol screening is shown below to highlight one aspect of cardiovascular disease prevention for Native Hawaiians.

Figure 4.5. Adults who did NOT receive a cholesterol check in the last 5 years, 2005



Key: NHOPI = Native Hawaiian or Other Pacific Islander.

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2005.

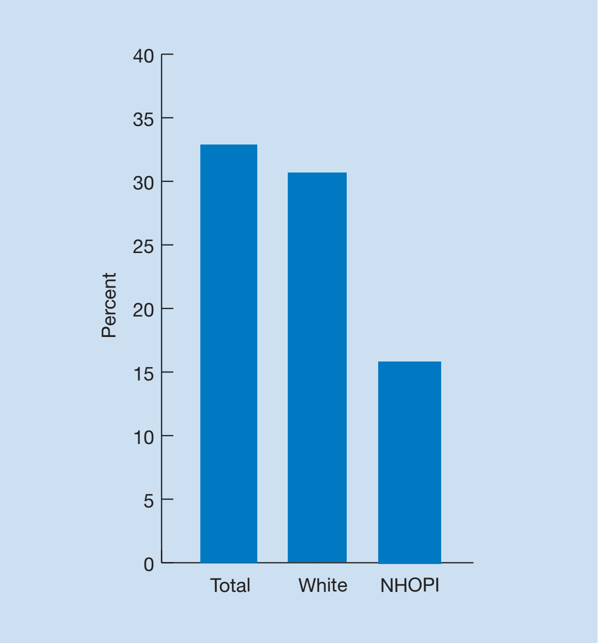
Note: These data are self-reported from a survey of adults in a household.

- 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%; Figure 4.5).

Preventive Care: Influenza and Pneumococcal Vaccinations for Older Adults

Older adults are at increased risk for complications from influenza and pneumococcal infections, and vaccination is an effective strategy to reduce illness and deaths due to influenza and pneumonia. The U.S. Preventive Services Task Force and the Centers for Disease Control and Prevention recommend annual influenza vaccinations and at least one pneumococcal vaccination for all older individuals.

Figure 4.6. Adults age 65 and over who did NOT receive an influenza vaccination in the last 12 months, 2006



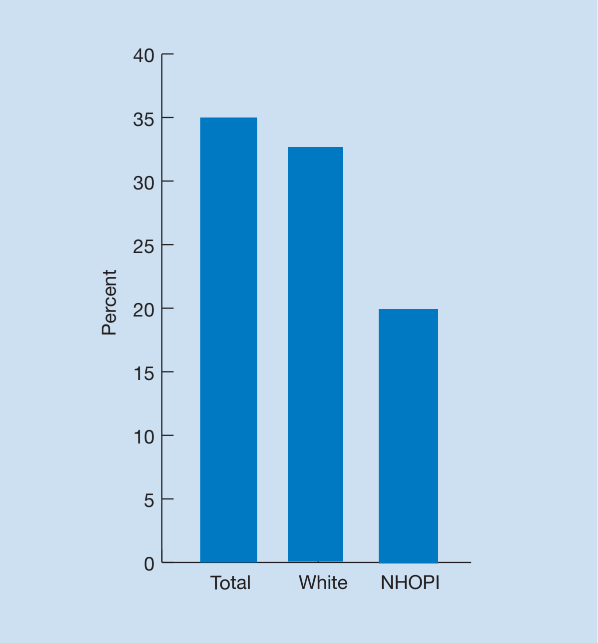
Key: NHOPI = Native Hawaiian or Other Pacific Islander.

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2006.

Note: These data are self-reported from a survey of adults in a household.

- The percentage of older adults who did not receive flu shots in the last 12 months was lower for NHOPIs than for Whites (15.9% compared with 30.6%; Figure 4.6).

Figure 4.7. Adults age 65 and over who have never received pneumococcal vaccination, 2006



Key: NHOPI = Native Hawaiian or Other Pacific Islander.

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2006.

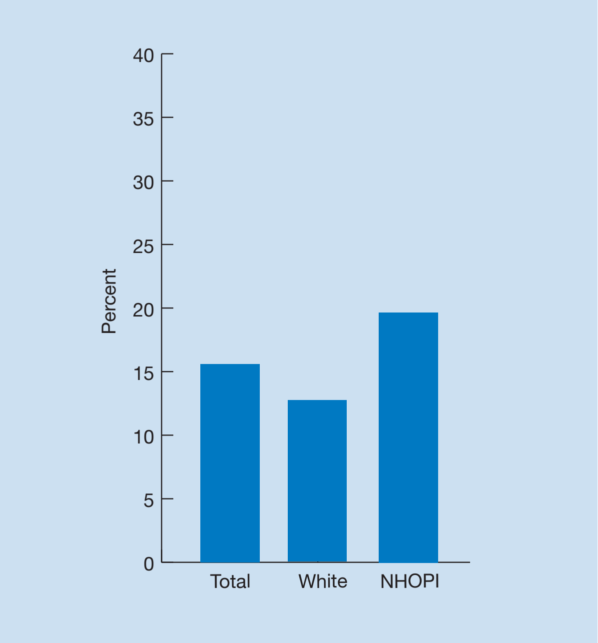
Note: These data are self-reported from a survey of adults in a household.

- The percentage of older adults who have never received a pneumococcal vaccination was lower for NHOPIs than for Whites (20.0% compared with 32.6%; Figure 4.7).

Access to Care: Health Insurance

Having health insurance is an important facilitator to getting health care. Individuals without health care coverage are less likely to have a usual source of care and access to preventive care and are more likely to delay needed care.

Figure 4.8. Adults who were uninsured all year, 2006



Key: NHOPI = Native Hawaiian or Other Pacific Islander.

Source: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2006.

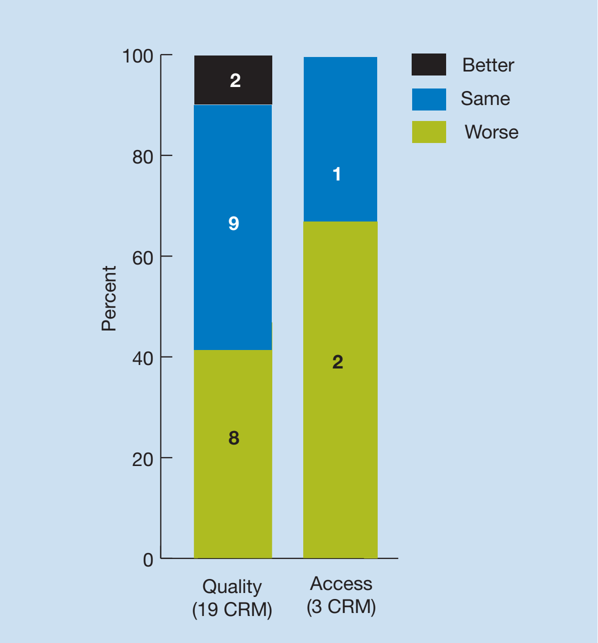
Note: These data are self-reported from a survey of adults in a household.

- The percentage of adults who did not have any health insurance in the past year was higher for NHOPIs than for Whites (19.7% compared with 12.7%; Figure 4.8).
- The percentage of adults ages 18-64 who did not have any health insurance was not significantly different between NHOPIs and Whites (15.3% for Whites, 20.9% for NHOPIs; data not shown).

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 4.9. 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 (see 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: Specific measures

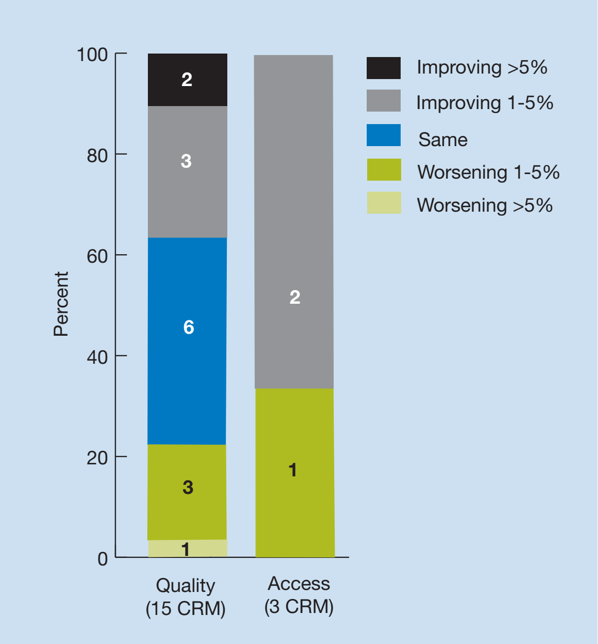
Topic	Better than Whites	Worse than Whites	Same as Whites
Cancer	Colorectal cancer diagnosed at advanced stage	Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test	
	Colorectal cancer deaths per 100,000 population per year		
End stage renal disease		Dialysis patients registered on a waiting list for transplantation	Adult hemodialysis patients with adequate dialysis (urea reduction ratio 65% or greater)

Table 4.7. AI/ANs compared with Whites on measures of quality and access: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
Heart disease			Recommended hospital care for heart attack
		Recommended hospital care for heart failure	
HIV and AIDS			New AIDS cases per 100,000 population age 13 and over
Maternal and child health		Pregnant women who first received prenatal care in the first trimester	Children ages 19-35 months who received all recommended vaccines
Mental health and substance abuse			Suicide deaths per 100,000 population
Respiratory diseases		Recommended hospital care for pneumonia	Patients with tuberculosis who completed a curative course of treatment within 12 months of initiation of treatment
Nursing home, home health, and hospice care		Long-stay nursing home residents with physical restraints	Short-stay nursing home residents with pressure sores
		High-risk, long-stay nursing home residents with pressure sores	Adult home health care patients whose ability to walk or move around improved
		Adult home health care patients who were admitted to the hospital	
Patient safety			Adult surgery patients who received appropriate timing of antibiotics
Access to care		People under age 65 with health insurance	People with a usual primary care provider
		People under age 65 who were uninsured all year	

- Only about half of the core report measures of quality supported estimates for AI/ANs.
- For 8 of the 19 core report measures of quality, AI/ANs had significantly poorer quality of care than Whites (Figure 4.9). For example, AI/ANs were less likely than Whites to receive colorectal cancer screening and recommended care for heart failure. For 2 measures, AI/ANs had better outcomes than Whites (colorectal cancer diagnosed at advanced stage and colorectal cancer mortality).
- For 2 of the 3 core report measures of access, AI/ANs had significantly worse access to care than Whites. AI/ANs under age 65 were less likely than Whites to have health insurance and were more likely to be uninsured all year.

Figure 4.10. 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 (see Table 1.2).

Note: The time period for this figure is the most recent and oldest years of data used in the NHDR. Only 18 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		Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test	Colorectal cancer diagnosed at advanced stage
			Colorectal cancer deaths per 100,000 population per year

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

Topic	Improving	Worsening	Same
End stage renal disease		Adult hemodialysis patients with adequate dialysis (urea reduction ratio 65% or greater)	Dialysis patients registered on a waiting list for transplantation
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			Patients with tuberculosis who completed a curative course of treatment within 12 months of initiation of treatment
Nursing home, home health, and hospice care	Short-stay nursing home residents with pressure sores	Long-stay nursing home residents with physical restraints	High-risk, long-stay nursing home residents with pressure sores
		Adult home health care patients who were admitted to the hospital	Adult home health care patients whose ability to walk or move around improved
Patient safety	Adult surgery patients who received appropriate timing of antibiotics		
Access to care	People under age 65 with health insurance	People under age 65 who were uninsured all year	
	People with a usual primary care provider		

- Fewer than half of the core report measures could be tracked over time for AI/ANs.
- Of core report measures of quality that could be tracked over time for AI/ANs and Whites, AI/AN-White differences became smaller for 5 measures. For example, AI/AN-White differences in recommended vaccinations for children and the rate of new AIDS cases have decreased over time.

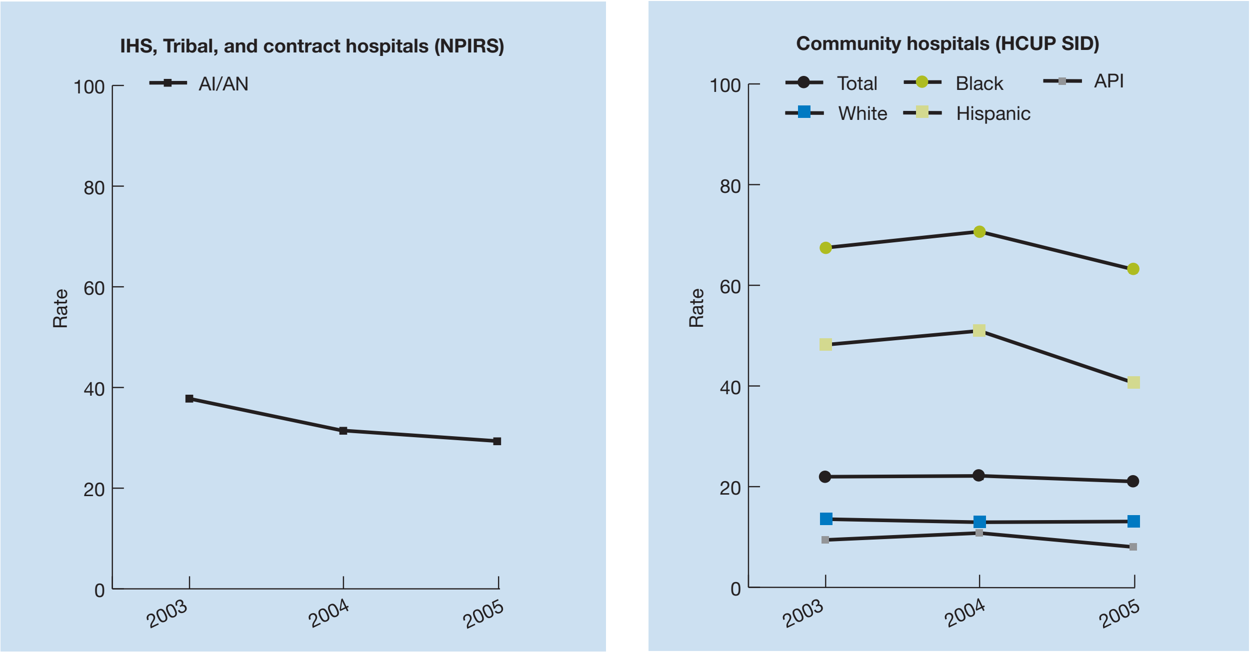
- AI/AN-White differences became larger for 4 measures (Figure 4.10). For example, the difference in colorectal cancer screening has worsened over time. For 6 measures, AI/AN-White differences did not change over time. These include nursing home residents with pressure sores and home health care patients with improved mobility.
- Of core report measures of access that could be tracked over time for AI/ANs and Whites, AI/AN-White differences became smaller for 2 measures (people under age 65 with health insurance and people with a usual primary care provider) but larger for 1 measure (people under age 65 who were uninsured all year).

Focus on Indian Health Service Facilities

Nationwide, many AI/ANs who are members of a federally recognized tribe rely on the Indian Health Service (IHS) to provide access to health care in the counties on or near reservations.[9,10,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.

Figure 4.11. Hospital admissions for uncontrolled diabetes per 100,000 population age 18 and over in IHS, Tribal, and contract hospitals, and community hospitals, by race (left) and ethnicity (right), 2003-2005



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 NPIRS, 2003-2005; community hospitals: Agency for Healthcare Research and Quality, HCUP SID disparities analysis file, 2003-2005.

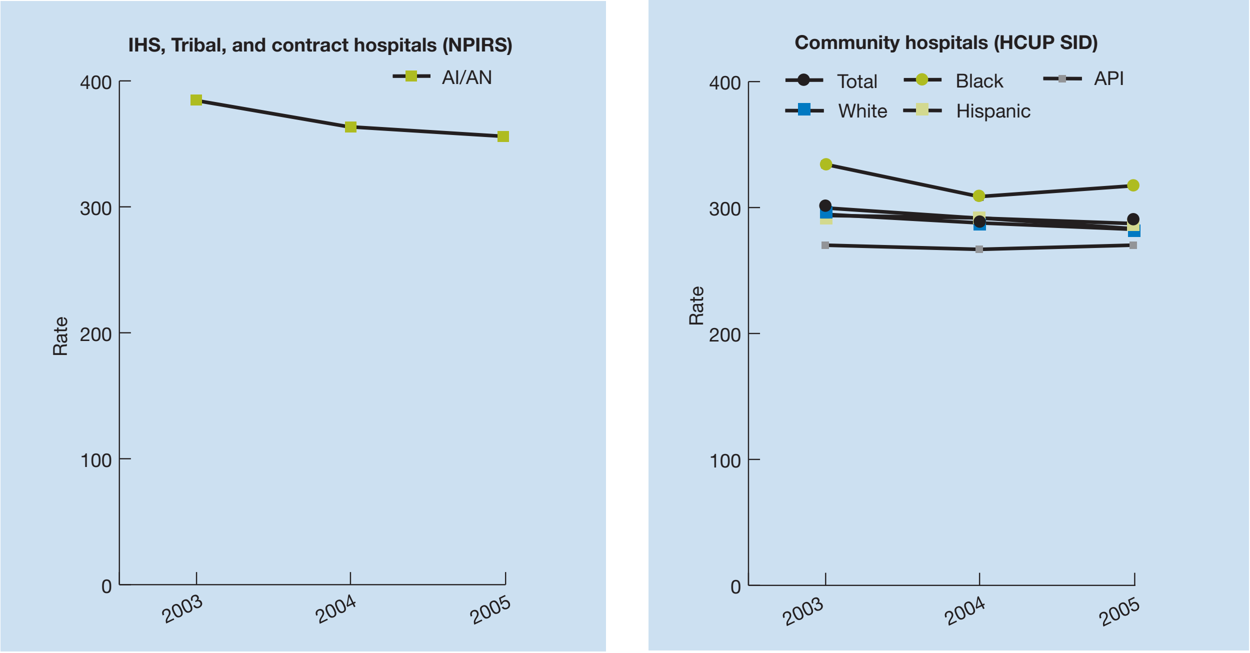
Note: White, Black, and API are non-Hispanic populations. Data are adjusted for age and gender. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 23 States that have 63% of the U.S. resident population. Years of IHS 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, and 2005 data from both data sources are presented.

[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.

- From 2003 to 2005, 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 29.3 per 100,000; Figure 4.11).
- There were no statistically significant changes for other racial and ethnic groups in community hospitals during this period.

For the more than 538,000 AI/ANs living on reservations or other trust lands where the climate is inhospitable, roads are often impassable, and transportation is scarce, health care facilities are far from accessible.[11] These conditions contribute to high rates of perforated appendix and hospitalizations for urinary tract infections, two problems that are receiving particular attention by IHS. Perforated appendix and urinary tract infection hospitalization rates, which decreased from 2003 to 2004, 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.[12]

Figure 4.12. Perforated appendixes per 1,000 admissions with appendicitis, age 18 years and over with appendicitis in IHS, Tribal, and contract hospitals, and community hospitals, by race (left) and ethnicity (right), 2003-2005



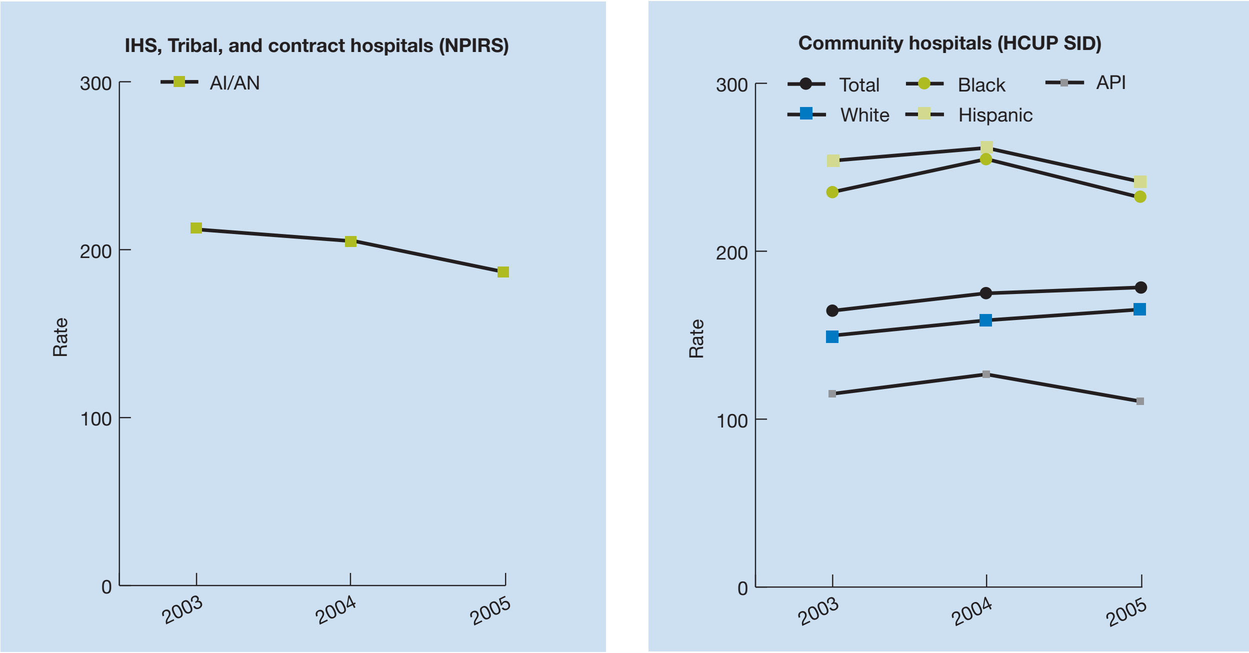
Key: AI/AN = American Indian or Alaska Native, API = Asian or Pacific Islander; HCUP SID = Healthcare Cost and Utilization Project State Inpatient Databases; NPIRS = National Patient Information Reporting System.

Source: IHS, Tribal, and contract hospitals: IHS NPIRS, 2003-2005; community hospitals: Agency for Healthcare Research and Quality, HCUP SID disparities analysis file, 2003-2005.

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 23 States that have 63% 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, and 2005 data from both data sources are presented.

- From 2003 to 2005, 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 355.8 per 1,000; Figure 4.12).
- The rate in community hospitals during this period also decreased overall (from 299.7 per 1,000 to 287.2 per 1,000), for Whites (from 294.6 per 1,000 to 282.7 per 1,000), and for Blacks (from 334.3 per 1,000 to 317.3 per 1,000).

Figure 4.13. Hospitalizations for urinary tract infection per 100,000 population age 18 years and over in IHS, Tribal, and contract hospitals, and community hospitals, by race (left) and ethnicity (right), 2003-2005



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 NPIRS, 2003-2005; community hospitals: Agency for Healthcare Research and Quality, HCUP SID disparities analysis file, 2003-2005.

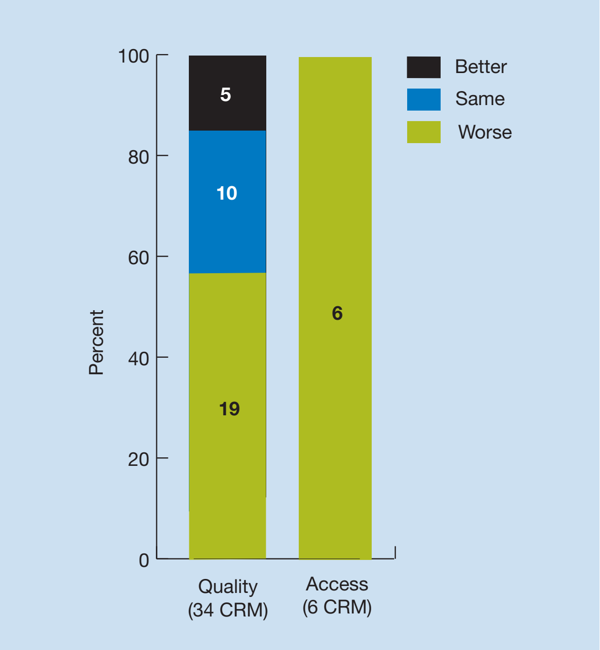
Note: White, Black, and API are non-Hispanic populations. Data are adjusted for age and gender. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 23 States that have 63% of the U.S. resident population. Years of IHS data prior to 2003 use a denominator based on the 1990 Census. This source is not comparable with estimates following that year, which are based on 2000 Bridged Census Data. Therefore, for comparing IHS with national estimates, only 2003, 2004, and 2005 data from both data sources are presented.

- From 2003 to 2005, the rate of hospitalizations for urinary tract infection for AI/AN adults in IHS, Tribal, and contract hospitals decreased from 212.1 per 100,000 to 186.3 per 100,000 (Figure 4.13).
- In comparison, from 2003 to 2005, hospitalizations for urinary tract infection in community hospitals increased overall (from 164.6 per 100,000 to 178.5 per 100,000) and for Whites (from 149.8 per 100,000 to 165.3 per 100,000).

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 4.14. 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: 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	
	Colorectal cancer deaths per 100,000 population per year		
Diabetes		Adults age 40 and over with diagnosed diabetes who received all three recommended services	

Table 4.9. Hispanics compared with non-Hispanic Whites on measures of quality and access: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
End stage renal disease	Adult hemodialysis patients with adequate dialysis (urea reduction ratio 65% or greater)	Dialysis patients registered on a waiting list for transplantation	
Heart disease		Recommended hospital care for heart attack	Adult current smokers who received advice to quit smoking
		Adults with obesity who ever received advice to exercise more	Recommended hospital care for heart failure
			Deaths per 1,000 adult hospital admissions with acute myocardial infarction (AMI)
HIV and AIDS		New AIDS cases per 100,000 population age 13 and over	
Maternal and child health		Pregnant women who first received prenatal care in the first trimester	Children ages 3-6 who ever had their vision checked
			Children for whom a health provider ever gave advice about physical activity
			Children ages 19-35 months who received all recommended vaccines
Mental health and substance abuse	Suicide deaths per 100,000 population	Adults with a major depressive episode who received treatment for depression	People age 12 and over who needed treatment for illicit drug use and who received such treatment at a specialty facility in the last 12 months
			People age 12 and over discharged for substance abuse treatment who completed treatment

Table 4.9. Hispanics compared with non-Hispanic Whites on measures of quality and access: Specific measures

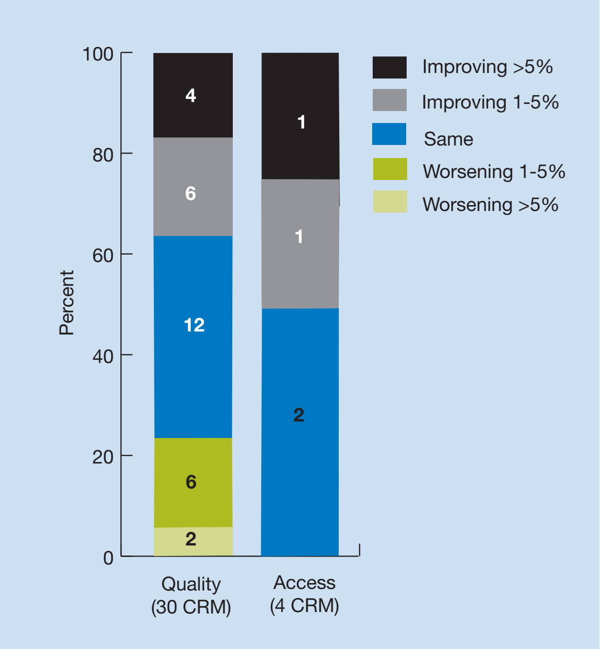
Topic	Better than Whites	Worse than Whites	Same as Whites
Respiratory diseases		Adults age 65 and over who ever received pneumococcal vaccination	
		Recommended hospital care for pneumonia	
		Patients with tuberculosis who completed a curative course of treatment within 12 months of initiation of treatment	
Nursing home, home health, and hospice care		Long-stay nursing home residents with physical restraints	Adult home health care patients whose ability to walk or move around improved
		High-risk, long-stay nursing home residents with pressure sores	
		Short-stay nursing home residents with pressure sores	
		Adult home health care patients who were admitted to the hospital	
Patient safety	Adults age 65 and over who received potentially inappropriate prescription medicines	Adult surgery patients who received appropriate timing of antibiotics	Failure to rescue
Timeliness		Adults who can sometimes or never get care for illness or injury as soon as wanted	
Patient centeredness		Adults with poor provider-patient communication	
		Children with poor provider-patient communication	

Table 4.9. Hispanics compared with non-Hispanic Whites on measures of quality and access: Specific measures

Topic	Better than Whites	Worse than Whites	Same as Whites
Access to care		People under age 65 with health insurance	
		People under age 65 who were uninsured all year	
		People with a specific source of ongoing care	
		People with a usual primary care provider	
		People unable to get or delayed in getting needed medical care, dental care, or prescription medicines	
		People without a usual source of care who indicated a financial or insurance reason	

- For 19 of the 34 core report measures of quality, Hispanics had poorer quality of care than non-Hispanic Whites (Figure 4.14). For example, Hispanics were less likely to receive recommended care for heart attack and obese Hispanics were less likely to receive advice about exercise than Whites. For 5 measures, Hispanics had better quality care than Whites. These include older adults not receiving inappropriate medications and hemodialysis patients with adequate dialysis. For 10 measures of quality of care, Hispanics were not significantly different from Whites. For example, Hispanic children were as likely as White children to receive vaccinations and vision screening.
- For 6 of the 6 core report measures of access, Hispanics had worse access to care than non-Hispanic Whites. These include people under age 65 with health insurance, people with a usual primary care provider, and people who were unable to get care or who delayed care.

Figure 4.15. 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 (see Table 1.2).

Note: The time period for this figure is the most recent and oldest years of data used in the NHDR. Only 34 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		Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test	Colorectal cancer diagnosed at advanced stage
			Colorectal cancer deaths per 100,000 population per year
Diabetes	Adults age 40 and over with diagnosed diabetes who received all three recommended services		
End stage renal disease		Adult hemodialysis patients with adequate dialysis (urea reduction ratio 65% or greater)	Dialysis patients who were registered on a waiting list for transplantation

Table 4.10. Change in Hispanic-non-Hispanic White disparities over time: Specific measures

Topic	Improving	Worsening	Same
Heart disease	Adult current smokers who received advice to quit smoking	Adults with obesity who were ever given advice to exercise more	Deaths per 1,000 adult hospital admissions with acute myocardial infarction (AMI)
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 for whom a health provider ever gave advice about physical activity
	Children ages 3-6 who ever had their vision checked		
Mental health and substance abuse		Adults with a major depressive episode who received treatment for depression	Suicide deaths per 100,000 population
			People age 12 and over who needed treatment for illicit drug use and who received such treatment at a specialty facility in the last 12 months
			People age 12 and over discharged for substance abuse treatment who completed treatment
Respiratory diseases		Adults age 65 and over who ever received pneumococcal vaccination	
		Patients with tuberculosis who completed a curative course of treatment within 12 months of initiation of treatment	

Table 4.10. Change in Hispanic-non-Hispanic White disparities over time: Specific measures

Topic	Improving	Worsening	Same
Nursing home, home health, and hospice care	Long-stay nursing home residents with physical restraints		
	Adult home health care patients whose ability to walk or move around improved		High-risk, long-stay nursing home residents with pressure sores
			Short-stay nursing home residents with pressure sores
			Adult home health care patients who were admitted to the hospital
Patient safety		Adult surgery patients who received appropriate timing of antibiotics	Failure to rescue
		Adults age 65 and over who received potentially inappropriate prescription medicines	
Timeliness	Adults who can sometimes or never get care for illness or injury as soon as wanted		
Patient centeredness	Adults with poor provider-patient communication		
	Children with poor provider-patient communication		
Access to care	People under age 65 who were uninsured all year		People under age 65 with health insurance
	People with a usual primary care provider		People with a specific source of ongoing care

- Of core report measures of quality that could be tracked over time for Hispanics and non-Hispanic Whites, Hispanic-non-Hispanic White differences became smaller for 10 measures (Figure 4.15). For example, Hispanic-non-Hispanic White differences in timeliness of care and appropriate timing of antibiotics improved over time. Hispanic-non-Hispanic White differences became larger for 8 measures. These include differences in colorectal cancer screening and pneumococcal vaccination for older adults, which worsened over time. For 12 measures, Hispanic-non-Hispanic White differences did not change over time. For example, the differences in the percentage of patients who received substance abuse treatment remained the same.
- Of core report measures of access that could be tracked over time for Hispanics and non-Hispanic Whites, Hispanic-non-Hispanic White differences became smaller for 2 measures (people under age 65 who were uninsured all year and people who had a usual primary care provider). For 2 measures, Hispanic-non-Hispanic White differences did not change over time (people under age 65 who had health insurance and people who had a specific source of ongoing care).

Recent Immigrants and Limited-English-Proficient Populations

Recent Immigrants and Language Barriers

Immigrants often encounter barriers to high-quality health care. In 2003, about 33.5 million people living in the United States were born outside the United States,[13] up from 20 million in 1990.[14] Asians and Hispanics are much more likely to be foreign born. 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.[14]

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.[15] In addition, the case rate among foreign-born individuals is more than 10 times higher than among individuals born in the United States.[15] However, the case rates for tuberculosis among U.S.-born and foreign-born individuals are both decreasing.[15]

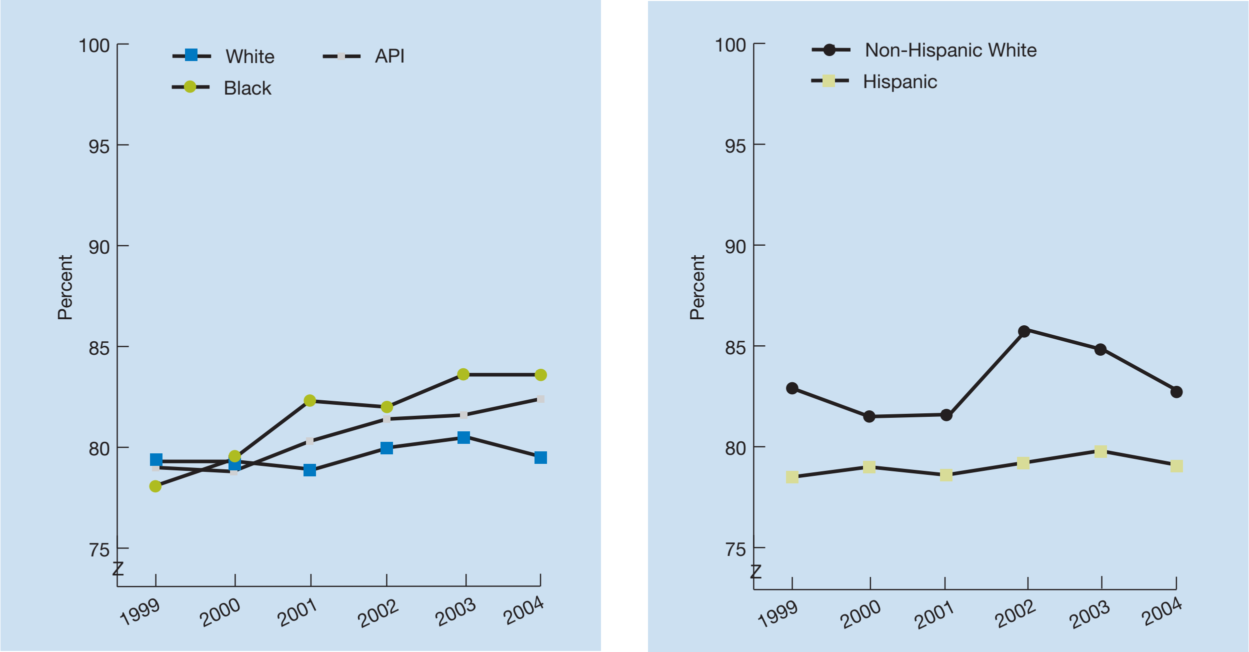
Quality health care requires that patients and providers communicate effectively. People who speak a language other than English at home may have less access to resources, such as health insurance, that facilitate getting needed health care. Providers and patients' ability to communicate clearly with 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 medications and decreased participation in medical decisionmaking, as well as exacerbate cultural differences that impair the delivery of quality health care. Moreover, 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.[16] Such providers are required to take reasonable steps to provide people with limited English proficiency with a meaningful opportunity to participate in programs the U.S. Department of Health and Human Services funds.

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.[17] 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).[18]

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 California Health Interview Survey.

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 4.16. Completion of therapy for tuberculosis within 12 months of being diagnosed among people born outside the United States, by race (left) and ethnicity (right), 1999-2004



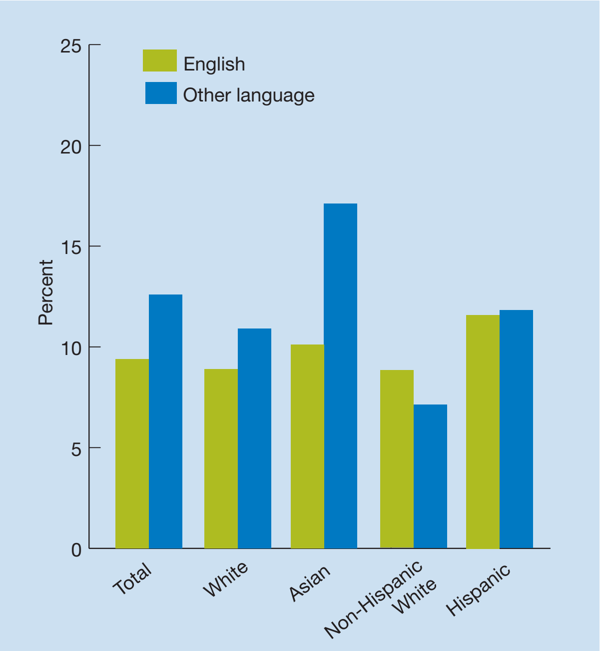
Key: API = Asian or Pacific Islander.

Source: Centers for Disease Control and Prevention, National Tuberculosis Surveillance System, 1999-2004.

Reference population: Foreign-born U.S. resident population with verified tuberculosis, all ages.

- From 1999 to 2004, the percentage of people who completed therapy for tuberculosis within 12 months of being diagnosed improved for foreign-born APIs (from 79.0% to 82.4%) and foreign-born Hispanics (from 78.5% to 79.1%; Figure 4.16).
- In 2004, the percentage of people who completed therapy for tuberculosis within 12 months of being diagnosed was significantly higher for foreign-born Blacks (83.6%) and APIs (82.4%) than for foreign-born Whites (79.5%), but lower for Hispanics compared with non-Hispanic Whites (79.1% compared with 82.7%).

Figure 4.17. Composite measure: Adult ambulatory patients who reported poor communication with health providers, by race and ethnicity, stratified by language spoken at home, 2005



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2005.

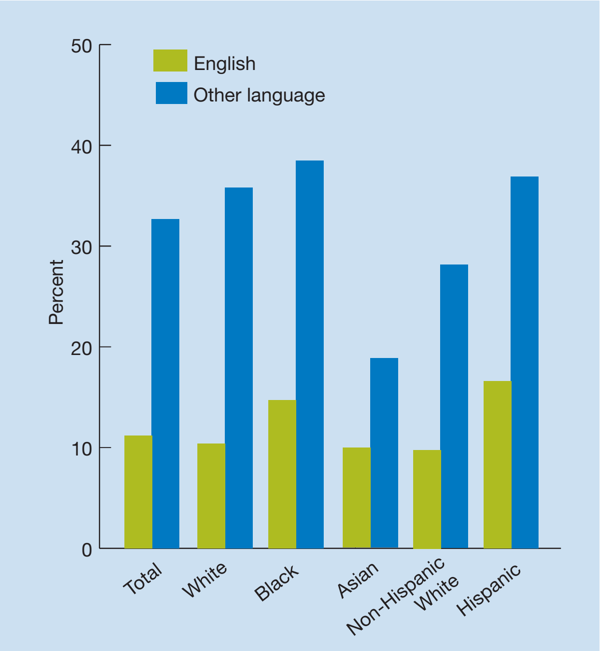
Denominator: Civilian noninstitutionalized population age 18 and over.

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 care providers (i.e., their health care 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 care provider was significantly higher for individuals who speak a foreign language at home than for individuals who speak English at home (Figure 4.17).
- The percentage of adults who reported poor communication with their health care provider was significantly higher for Whites who speak some other language at home (10.9%) than for Whites who speak English at home (8.9%). There were no statistically significant differences for other racial or ethnic groups due to small sample sizes.

> *Problems With English Help Block Many Hispanics From Medical Care—*
> *Medical News Today.*

Figure 4.18. Adults under age 65 who were uninsured all year, by race and ethnicity, stratified by language spoken at home, 2005



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2005.

Reference population: Civilian noninstitutionalized population ages 18-64.

- The overall percentage of adults under age 65 uninsured all year was significantly higher for individuals who speak a foreign language at home than for individuals who speak English at home (Figure 4.18).
- 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 (35.8% compared with 10.4% for Whites, 38.5% compared with 14.7% for Blacks, and 18.8% compared with 9.9% for Asians).
- The percentage of people uninsured all year was more than twice as high for Hispanics who speak some other language at home than for Hispanics who speak English at home (36.9% compared with 16.6%).

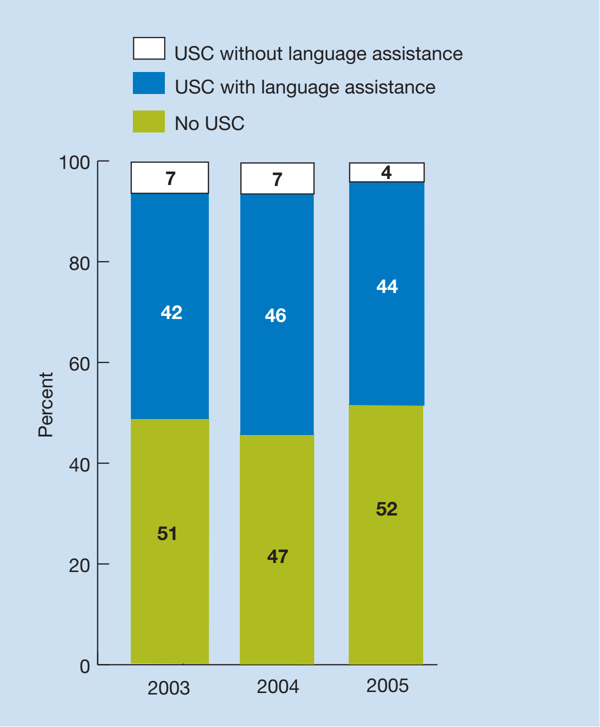
Language Assistance

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 4.19. Adults with limited English proficiency, by whether they had a usual source of care with or without language assistance, 2003-2005



Key: USC = usual source of care.

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2003-2005.

Reference population: Civilian noninstitutionalized population age 18 and over.

Note: Language assistance includes bilingual clinicians, trained medical interpreters, and informal interpreters (e.g., bilingual receptionists).

- Approximately half (52%) of individuals with limited English proficiency did not have a usual source of care in 2005 (Figure 4.19).
- In 2005, less than half (44%) of individuals with limited English proficiency had a usual source of care who offered language assistance.
- Only 4% of individuals with limited English proficiency had a usual source of care who 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.[19,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.[20]

Poverty varies by race and ethnicity. In 2006, 24% of Blacks, 21% of Hispanics, 10% of Asians, and 8% of Whites were poor.20 People with low incomes often experience worse health and are more likely to die prematurely.[21] 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.[22]

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, poorer 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 with 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 points in time. 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 (see 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.

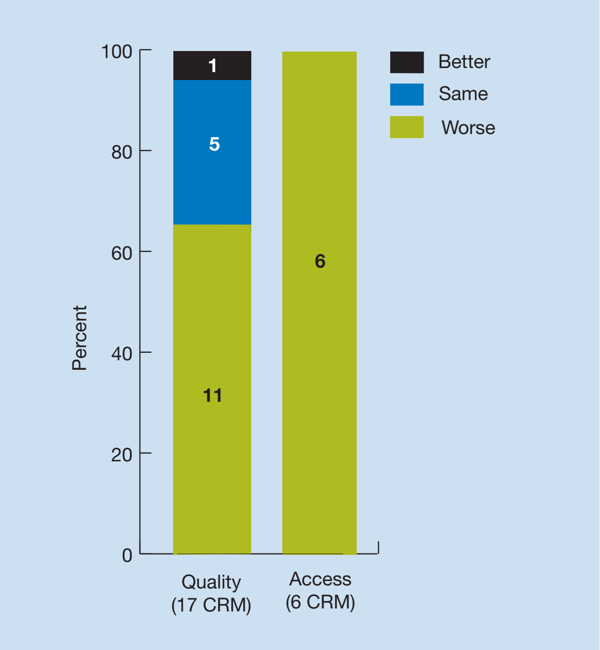
---

[x] For example, in 2006, the Federal poverty threshold for a family of two adults and two children was $20,444.

[xi] Household income less than Federal poverty thresholds.

[xii] Household income 400% of Federal poverty thresholds and higher.

Figure 4.20. 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 (see 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: 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	
Diabetes		Adults age 40 and over with diagnosed diabetes who received all three recommended services	
Heart disease			Adult current smokers who received advice to quit smoking
		Deaths per 1,000 adult hospital admissions with acute myocardial infarction (AMI)	
		Adults with obesity who ever received advice to exercise more	

Table 4.11. Poor compared with high income on measures of quality and access: Specific measures

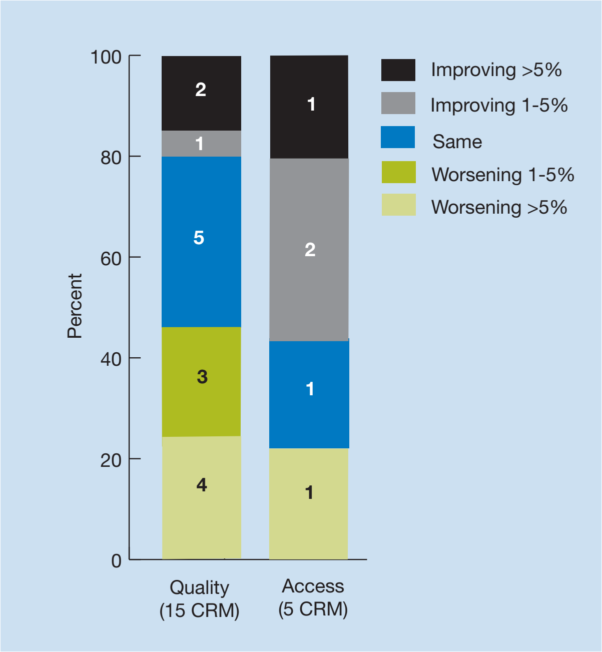
Topic	Better than high income	Worse than high income	Same as high income
Maternal and child health		Children ages 2-17 for whom a health provider ever gave advice about physical activity	Children ages 3-6 who ever had their vision checked
		Children ages 19-35 months who received all recommended vaccines	
Mental health and substance abuse	People age 12 and over who needed treatment for illicit drug use and who received such treatment at a specialty facility in the last 12 months		Adults with a major depressive episode who received treatment for depression
Respiratory diseases		Adults age 65 and over who ever received pneumococcal vaccination	
Patient safety			Failure to rescue
			Adults age 65 and over who received potentially inappropriate prescription medicines
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		Adults with poor provider-patient communication	
		Children with poor provider-patient communication	

Table 4.11. Poor compared with high income on measures of quality and access: Specific measures

Topic	Better than high income	Worse than high income	Same as high income
Access to care		People under age 65 with health insurance	
		People under age 65 who were uninsured all year	
		People with a specific source of ongoing care	
		People with a usual primary care provider	
		People unable to get or delayed in getting needed medical care, dental care, or prescription medicines	
		People without a usual source of care who indicated a financial or insurance reason for not having usual source of care	

- Fewer than half of the core report measures of quality supported estimates for poor populations.
- For 11 of the 17 core report measures of quality with income data, poor individuals had significantly poorer quality of care than high-income individuals (Figure 4.20). Only one measure (receipt of drug or alcohol treatment) was better for poor individuals than for high-income individuals.
- For all 6 core report measures of access, poor individuals had significantly worse access to care than high-income individuals.

Figure 4.21. 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 (see Table 1.2).

Note: The time period for this figure is the most recent and oldest years of data used in the NHDR. Only 20 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		Adults age 50 and over who report they ever received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test	
Diabetes		Adults age 40 and over with diagnosed diabetes who received all three recommended services	
Heart disease	Adult current smokers who received advice to quit smoking		Deaths per 1,000 adult hospital admissions with acute myocardial infarction (AMI)
			Adults with obesity who ever received advice to exercise more
Maternal and child health	Children ages 3-6 who ever had their vision checked	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

Table 4.12. Change in poor-high-income disparities over time: Specific measures

Topic	Improving	Worsening	Same
Mental health and substance abuse		People age 12 and over who needed treatment for illicit drug use and who received such treatment at a specialty facility in the last 12 months	
Respiratory diseases			Adults age 65 and over who ever received pneumococcal vaccination
Patient safety	Adults age 65 and over who received potentially inappropriate prescription medicines		Failure to rescue
Timeliness		Adults who can sometimes or never get care for illness or injury as soon as wanted	
Patient centeredness		Adults with poor provider-patient communication	
		Children with poor provider-patient communication	
Access to care	People under age 65 with health insurance	People without a usual source of care who indicated a financial or insurance reason for not having a usual source of care	People with a specific source of ongoing care
	People under age 65 who were uninsured all year		
	People with a usual primary care provider		

- Only about half of the core report measures of quality allow comparisons between poor and high-income individuals over time.

- Of core report measures of quality that could be tracked over time for poor and high-income individuals, poor-high-income differences became smaller for 3 measures (Figure 4.21). For example, the gap between poor people and high-income people in current smokers receiving advice to quite smoking and children with a vision exam became smaller. For 7 measures, the gap increased, including children who received all recommended vaccines and timeliness of care for illness or injury. For 5 measures, the poor-high-income difference did not change. For example, the gap between poor people and high-income people in pneumococcal vaccination and advice about exercise remained the same.
- Of core report measures of access that could be tracked over time for poor and high-income individuals, poor-high-income differences became smaller for 3 measures (people under age 65 with health insurance, people under age 65 who were uninsured all year, and people who have a usual primary care provider), became larger for 1 measure (people without a usual source of care due to financial or insurance reason), and remained the same for 1 measure (people with a specific source of ongoing care).

Focus on Uninsurance

Because low-paying jobs are less likely to offer health insurance as a benefit and the cost of health insurance leaves poorer individuals less likely to be able to afford it, this year's NHDR again focuses on uninsurance. Compared with insured people, uninsured people report more problems getting care and are diagnosed at later disease stages.[23,24] They report poorer health status,[25] are sicker when hospitalized, and are more likely to die during their hospital stay.[24] Uninsured people often avoid nonurgent care, such as preventive screenings; have difficulty obtaining care for illness or injury; and must bear the full cost of health care. In addition, prolonged periods of uninsurance can have a particularly serious effect on health and stability.

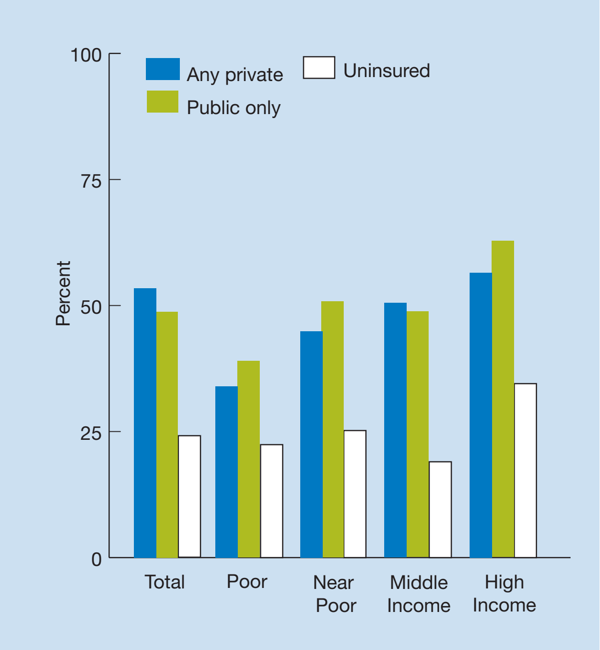
Findings presented here highlight two quality measures related to prevention (screening for colorectal cancer and counseling parents about physical activity in children) and one access measure (dental care) of special relevance to uninsured people. Two of these measures include bivariate analyses to show data by income and insurance status.

Quality of Health Care

Prevention: Screening for Colorectal Cancer

Screening for colorectal cancer is an effective way to reduce new cases of late-stage disease and mortality caused by this cancer.

Figure 4.22. Composite measure: Adults age 50 and over who received colorectal cancer screening (colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test), by income, stratified by insurance status, 2005



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2005.

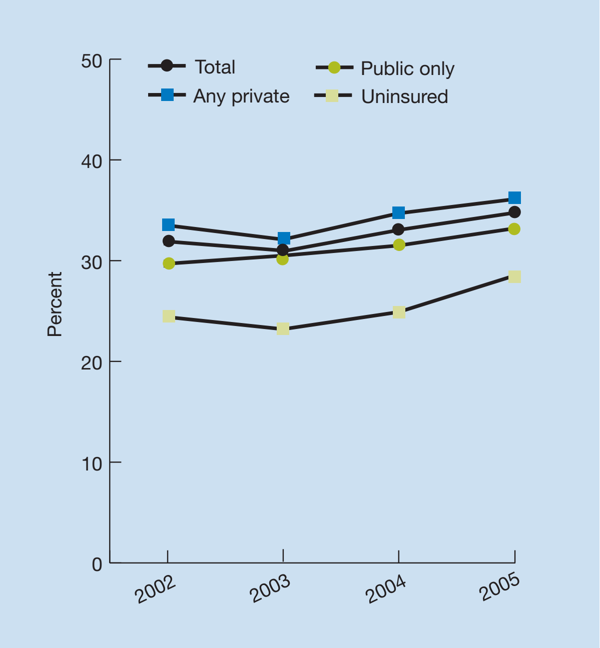
Reference population: Civilian noninstitutionalized men and women age 50 and over who reported they received a colonoscopy, sigmoidoscopy, proctoscopy, or fecal occult blood test in the last 2 years.

- Overall, adults age 50 and over without insurance were less than half as likely as adults with private insurance to report they had colorectal cancer screening in the last 2 years (24.1% compared with 53.4%; Figure 4.22). Publicly insured adults were also less likely than adults with private insurance to report they had colorectal cancer screening in the last 2 years (48.8% compared with 53.4%).
- Among poor adults, there was no statistically significant difference by insurance status.
- Among near-poor adults, the percentage was significantly lower for uninsured adults (25.2%) than for privately insured adults (44.9%).
- Among middle-income adults, the percentage was significantly lower for uninsured adults than for privately insured adults (19.0% compared with 50.5%).
- Among high-income adults, the percentage was significantly lower for uninsured adults than for privately insured adults (34.5% compared with 56.5%).

Prevention: Counseling Parents About Physical Activity in Children

Counseling about physical activity can play an important role in helping children to lose excess weight and establish healthy lifestyle behaviors.

Figure 4.23. Children ages 2-17 with ambulatory visits for whom a health provider ever gave advice about the amount and kind of exercise, sports, or physically active hobbies they should have, by insurance status, 2002-2005



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2005.

Reference population: Civilian noninstitutionalized population ages 2-17.

Note: Estimates were for children whose parents or guardians reported ever receiving advice from a health care provider about their children's physical activity. More data by race and ethnicity can be found in the Children section.

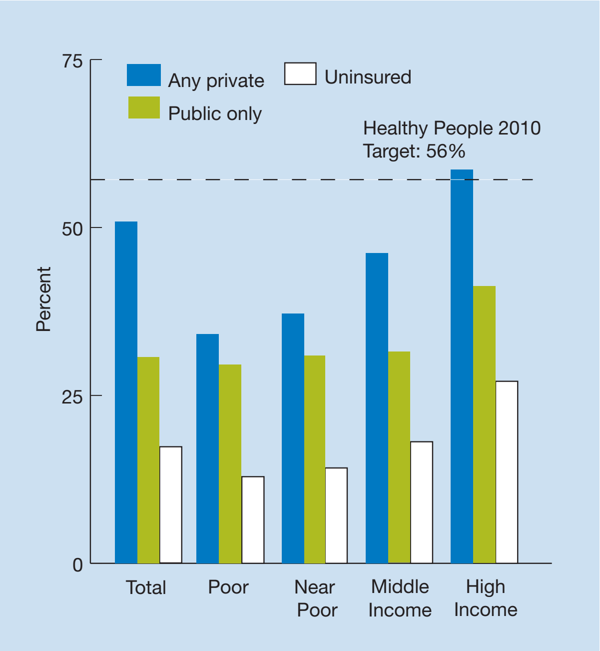
- From 2002 to 2005, the gap between uninsured children and privately insured children whose parents or guardians reported receiving advice about physical activity remained the same. In 2005, the percentage was significantly less for uninsured children than for privately insured children (28.5% compared with 36.1%; Figure 4.23).
- During this period, there was no significant difference between publicly insured and privately insured children whose parents or guardians reported receiving advice about physical activity.

Access to Health Care

Dental Care

Regular dental visits promote prevention, early diagnosis, and optimal treatment of oral diseases and conditions.

Figure 4.24. People who had a dental visit in the calendar year, by income, stratified by insurance status, 2005



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2005.

Reference population: Civilian noninstitutionalized population, all ages.

- Overall, the percentage of people with a dental visit in the past year was significantly lower for publicly insured and uninsured people than for privately insured people (30.7% and 17.3%, respectively, compared with 50.9%; Figure 4.24).
- Among poor people, the percentage did not differ significantly between publicly insured and privately insured people (29.6% compared with 34.1%) but was significantly lower for uninsured people than for privately insured people (12.9% compared with 34.1%).
- Among near-poor, middle-income, and high-income people, uninsured people were less than half as likely as privately insured people to have had a dental visit in the past year.
- Only high-income people with private health insurance met the Healthy People 2010 target of 56% of people with a dental visit in the past year (58.6%).

Women

The U.S. Census Bureau estimated 152 million females in the United States in 2006, 51% of the U.S. population,[26] of whom 47 million are members of racial or ethnic minority groups.[27] By 2050, it is projected that just under half of females in the United States will be members of racial or ethnic minority groups.[27] 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 85 and older, women outnumber men by more than 2 to 1.[28] 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.[29]

Women in the United States have a life expectancy 5.2 years longer than men[30] and lower age-adjusted death rates than men for 12 of the 15 leading causes of death.[31] However, women are more likely than men to report having arthritis, asthma,[32] and serious mental illness.[33] There is significant variation in health status and health-related behaviors for women of different races and ethnicities.[34] In general, gender differences in quality of care are small.

Many measures of relevance to women are tracked in the NHDR. Findings presented here highlight four quality measures and one access measure of particular importance to women:

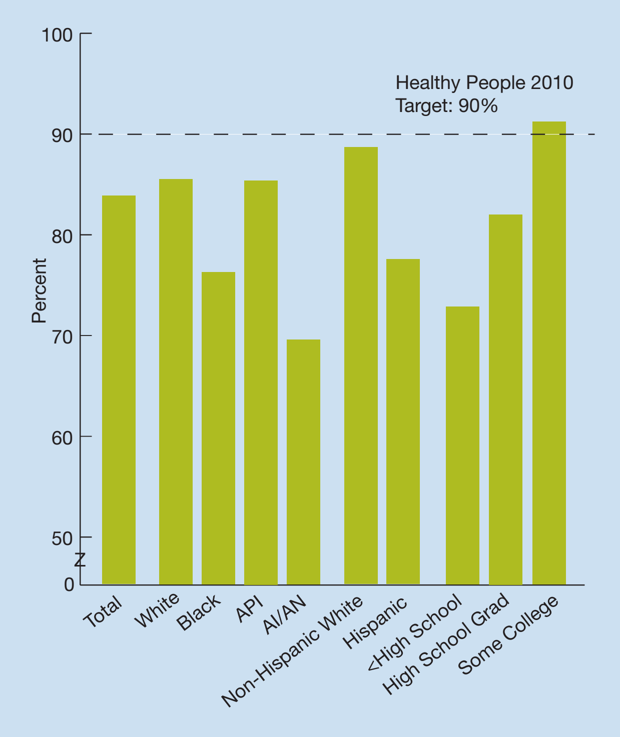
Component of health care need	Measure
Prevention	Prenatal care and maternal health, obese adults advised about exercise
Treatment	Mortality rate for acute myocardial infarction
Management	New AIDS cases
Access to care	Usual source of care

Quality of Health Care

Prevention: Prenatal Care and Maternal Health

Childbirth and reproductive care are the most common reasons for women of childbearing age to use health care services. With more than 11,000 births each day in the United States, childbirth is the most common reason for hospital admission.[35] Given that birth outcomes may have lifetime effects, good prenatal care has the potential to affect the Nation's future health and health care needs.[36] Prenatal care is expected to maintain and improve the health of both mother and newborn during pregnancy. It is recommended that women begin receiving prenatal care in the first trimester of pregnancy.

Figure 4.25. Women who completed a pregnancy in the last 12 months who first received prenatal care in the first trimester for selected States, by race, ethnicity, and education, 2005



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

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System-Natality, 2005.

Reference population: Women with live births.

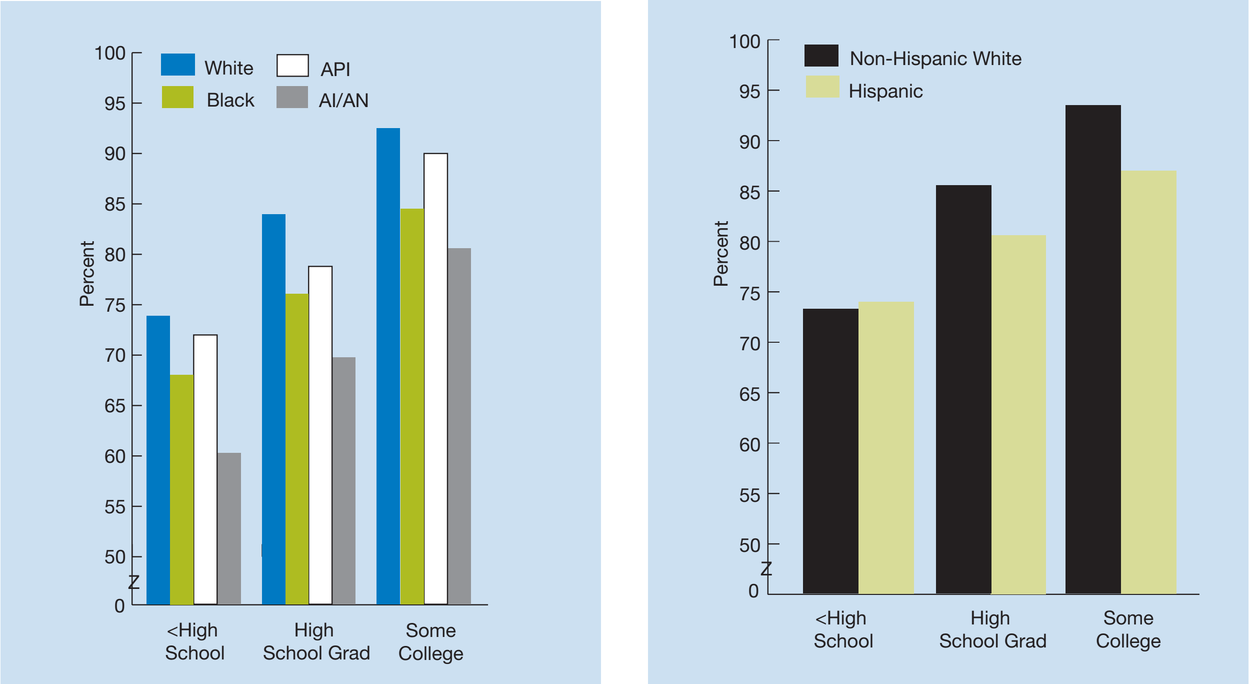
Note: Data for 2005 include the 39 reporting areas (37 States, DC, and New York City) that used the 1989 revision of the US Standard Certificate of Live Birth in 2005. Reporting areas that have adopted the 2003 revision are excluded because prenatal data based on the 2003 revision are not comparable with data based on 1989 and earlier revisions of the US Standard Certificate of Live Birth. More information on the measure specification can be found in the Measure Specifications Appendix. Further discussion of this measure can be found in the Residents of Rural Areas section.

- In 2005, the percentage was significantly lower for Blacks (76.3%) and AI/ANs (69.6%) compared with Whites (85.5%).
- In 2005, the percentage was significantly lower for Hispanics than for non-Hispanic Whites (77.6% compared with 88.7%).
- The percentage was significantly lower for women with less than a high school education (72.8%) and high school graduates (82.0%) than for women with any college education (91.2%).
- Only women with some college education achieved the Healthy People 2010 target of 90% of women receiving prenatal care in the first trimester.

> *Only college-educated women achieved the Healthy People 2010 target of 90% of women receiving prenatal care in the first trimester.*

Racial and ethnic minorities are disproportionately of lower socioeconomic status than Whites.20 Since information about income is not typically collected on birth certificates, the source of some health data, education is commonly used as a proxy for socioeconomic status. To distinguish the effects of race, ethnicity, and education on quality of health care, this measure is stratified by level of education.

Figure 4.26. Women who completed a pregnancy in the last 12 months who first received prenatal care in the first trimester for selected States, by race (left) and ethnicity (right), stratified by education, 2005



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

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System-Natality, 2005.

Reference population: Women with live births.

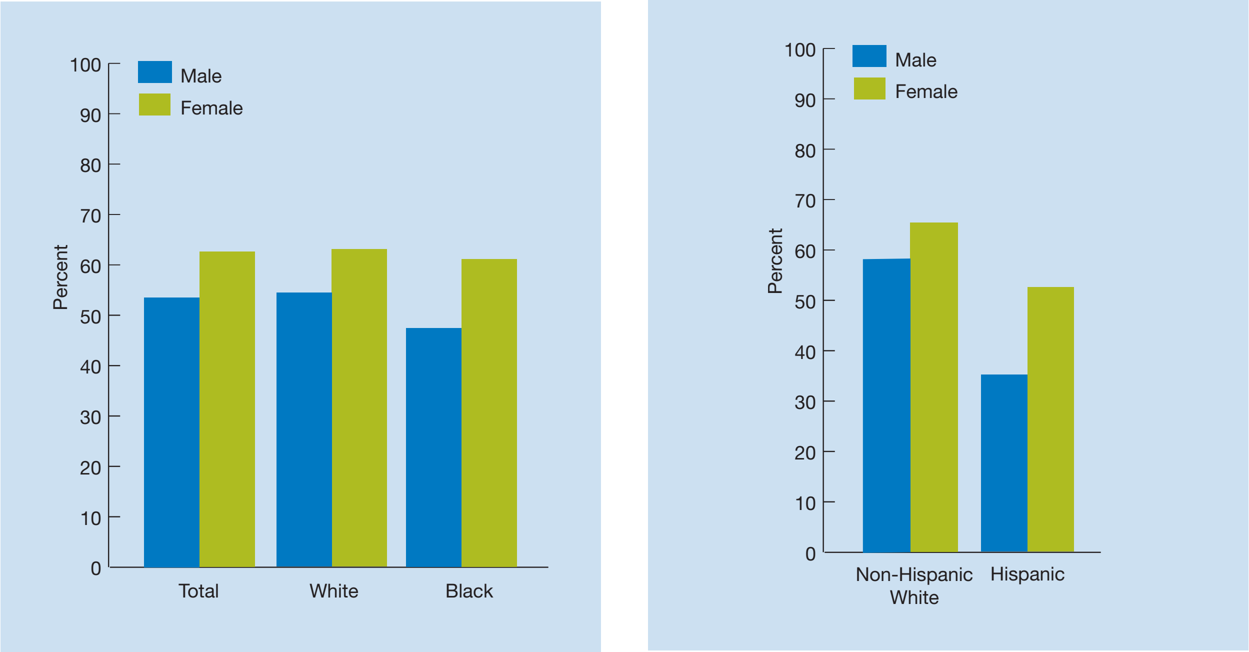
Note: Data for 2005 include the 39 reporting areas (37 States, DC, and New York City) that used 1989 revision of the US Standard Certificate of Live Birth in 2005. Reporting areas that have adopted the 2003 revision are excluded because prenatal data based on the 2003 revision are not comparable with data based on 1989 and earlier revisions of the US Standard Certificate of Live Birth.

- Education explains some but not all of the differences in prenatal care among women by race and ethnicity. Racial and ethnic differences in early prenatal care tended to persist among women with similar education (Figure 4.26).
- Only college-educated APIs (90.0%) and non-Hispanic Whites (93.2%) achieved the Healthy People 2010 target of 90% of women receiving prenatal care in the first trimester.

Prevention: Obese Adults Advised About Exercise

In 2005-2006, more than 35% of adult women age 20 and over in the United States were obese, compared with 33% of men,[37,xiii] putting them at increased risk for many chronic, deadly conditions, such as hypertension, cancer, diabetes, and coronary heart disease.[38] Reducing obesity is a major objective in preventing heart disease and stroke.[39] Research shows large racial and ethnic differences among women. The prevalence of obesity is higher for Black and Mexican-American women compared with White women.[40] 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.

Figure 4.27. Adults with obesity who ever received advice from a health provider to exercise more, by race (left) and ethnicity (right), stratified by gender, 2005



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2005.

Reference population: 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.

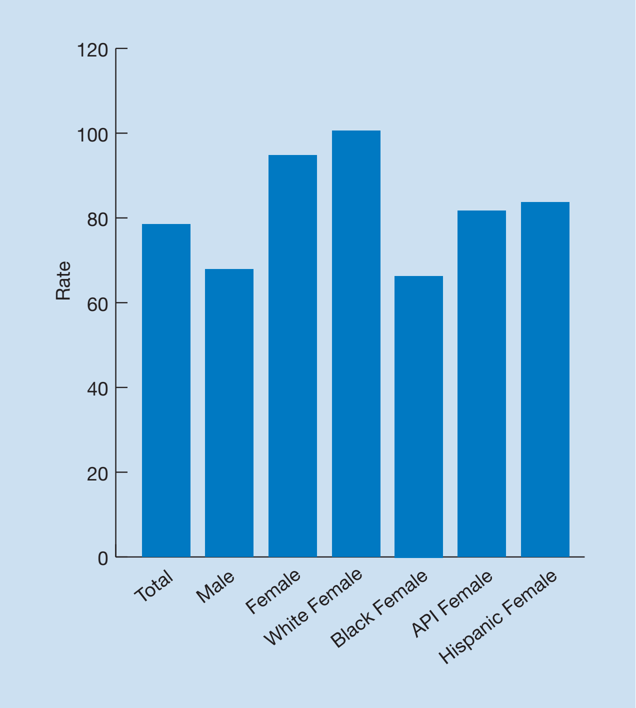
- Obese women were more likely than men to receive advice about exercise (62.6% compared with 53.5%; Figure 4.27). Among obese women, Hispanics were less likely than non-Hispanic Whites to receive advice about exercise (52.5% compared with 65.4%). There were no significant differences between Black women and White women.

[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.

Treatment: Mortality Rate for Acute Myocardial Infarction

Cardiovascular disease is the number one killer among women.[41] 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 (e.g., 73 versus 65 years on average, according to one study[42]). 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 AMI 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 an AMI patient needs. Measuring outcomes of AMI 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 4.28. Deaths per 1,000 adult hospital admissions with acute myocardial infarction (AMI), by gender and race, 2005



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, 2005.

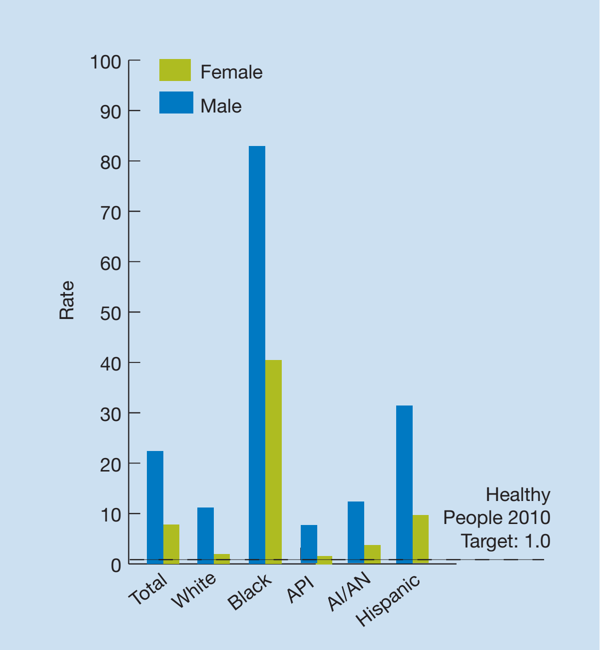
Note: Rates are adjusted by age, gender, age-gender interactions, and All Patient Refined-Diagnosis-Related Group risk of mortality score. The HCUP SID disparities analysis file is designed to provide national estimates using weighted records from a sample of hospitals from 23 States that have 63% of the U.S. resident population.

- The mortality rate for hospital admissions with AMI was higher for females compared with males (94.8 per 1,000 compared with 67.9 per 1,000; Figure 4.28). Among females, rates were lower both for Black (66.5 per 1,000) and Hispanic (83.7 per 1,000) females than for White females (100.6 per 1,000).

Management: New AIDS Cases

Although differences in the progression of HIV to AIDS do not necessarily result from differences in quality of care, early and appropriate treatment of HIV infection can delay progression to AIDS. Improved management of HIV infections has likely contributed to reduced transmission and therefore decline in new AIDS cases.

Figure 4.29. New AIDS cases per 100,000 population age 13 and over, by race/ethnicity, stratified by gender, 2006



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

Source: Centers for Disease Control and Prevention, HIV/AIDS Surveillance System, 2006.

Reference population: 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.

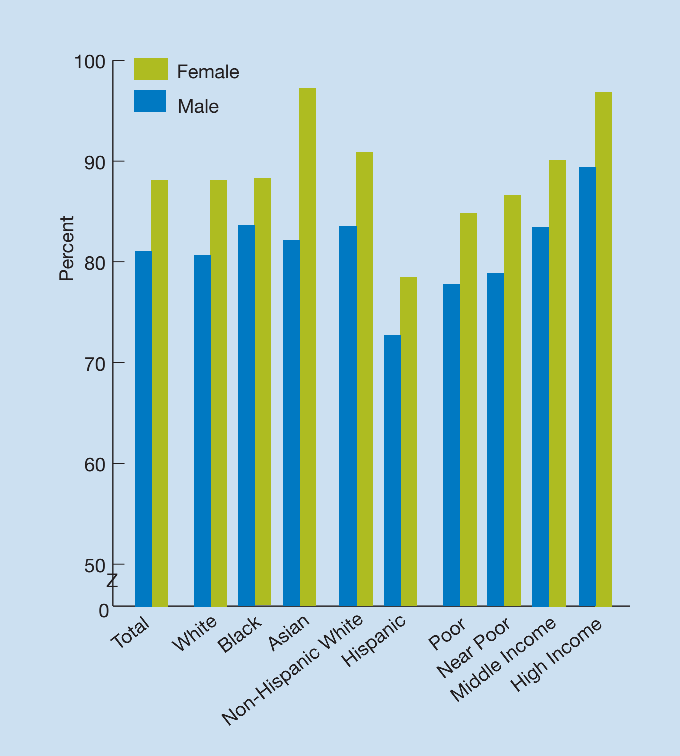
- For the overall U.S. population, the rate of new AIDS cases for males was nearly triple that for females (22.4 compared with 7.8 per 100,000 population; Figure 4.29).
- The rate was significantly higher for males than for females in all groups: Blacks (82.9 per 100,000 for males and 40.4 per 100,000 for females), APIs (7.5 per 100,000 for males and 1.6 per 100,000 for females), AI/ANs (12.2 per 100,000 for males and 3.6 per 100,000 for females), Hispanics (31.3 per 100,000 for males and 9.5 per 100,000 for females), and Whites (11.2 per 100,000 for males and 1.9 per 100,000 for females).
- Among females, Blacks and Hispanics had significantly higher rates of new AIDS cases than Whites (40.4 and 9.5 per 100,000, respectively, compared with 1.9 per 100,000). API women had lower rates than White women (1.6 per 100,000 compared with 1.9 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.[43]

Figure 4.30. People with a specific source of ongoing care, by race, ethnicity, and income, stratified by gender, 2006



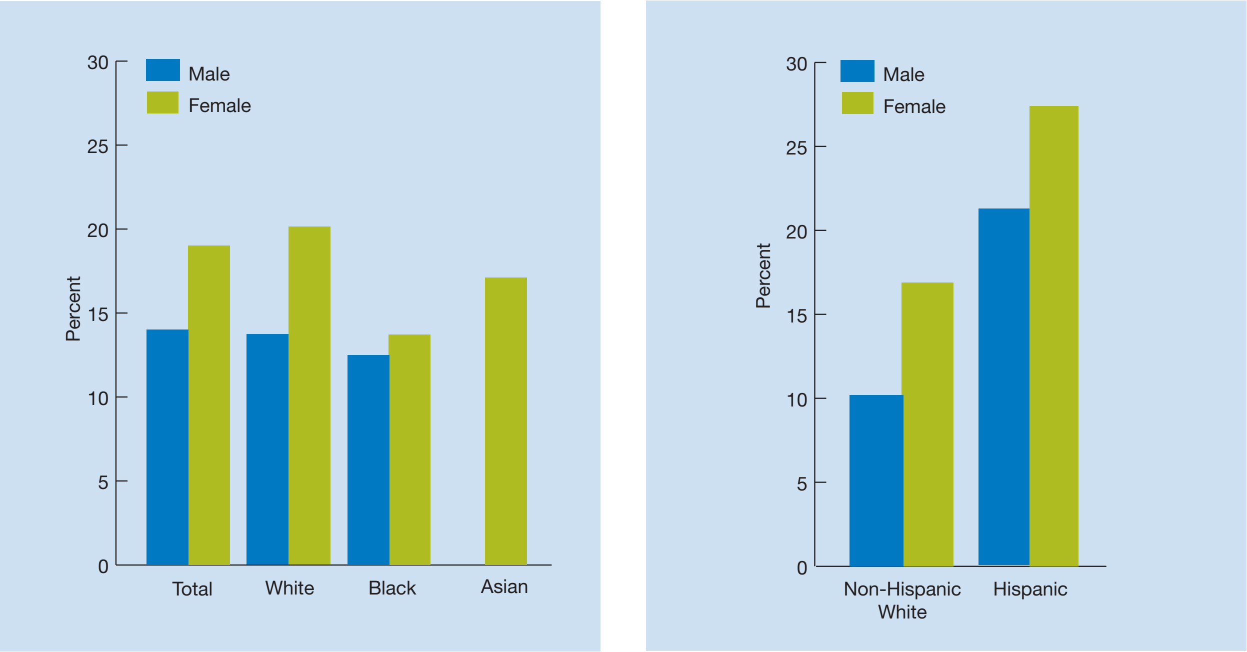
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2006.

Reference population: Civilian noninstitutionalized population, all ages.

Note: Measure is age adjusted to the 2000 standard population.

- Overall, the percentage of people with a specific source of ongoing care was significantly higher for females than for males (88.2% compared with 81.2%; Figure 4.30).
- This percentage was also significantly higher for females than males for all racial and ethnic groups: Whites (88.2% for females compared with 80.8% for males), Asians (97.3% for females compared with 82.2% for males), non-Hispanic Whites (90.9% for females compared with 83.6% for males), and Hispanics (78.5% for females compared with 72.8% for males).
- Among women, this percentage was significantly lower for poor (84.9%), near-poor (86.6%), and middle-income (90.2%) individuals than for high-income individuals (97.0%).

Figure 4.31. People without a usual source of care who indicate a financial or insurance reason for not having a source of care, by race (left) and ethnicity (right), stratified by gender, 2005



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2005.

Note: Data for Native Hawaiians and Other Pacific Islanders women, American Indians and Alaska Natives, and Asian males did not meet the criteria for statistical reliability, data quality, or confidentiality.

- Women were more likely than men to not have a usual source of care due to financial or insurance reasons (19.0% compared with 14.0%; Figure 4.31). This was also true among Blacks, non-Hispanic Whites, and Hispanics.
- There were no statistically significant racial or ethnic differences among women.

Children

Children (individuals less than 18 years old) made up 24.6% of the U.S. population, or 73.5 million people, in 2006.[26] Almost 40% of all children were members of racial and ethnic minority groups,[1] and 17.6% of children lived in families with incomes below the Federal poverty level.[19]

In 2003, Black children and AI/AN children had death rates about one and one-half to two times higher than White children. In 2005, Black infants were more than twice as likely as White infants to die during their first year.[30] Life expectancy at birth was 78.3 years for White children[30] and 73.2 years for Black children, a difference of about 5 years.[30]

Many measures relevant to children are tracked in the NHDR. Findings presented here highlight four quality measures and two access measures 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 physical activity, vision screening
Patient safety	Accidental puncture or laceration
Timeliness	Admissions with perforated appendix
Access to care	Health insurance

In addition, the final section of this chapter, which discusses individuals with special health care needs, includes findings related to children with special health care needs.

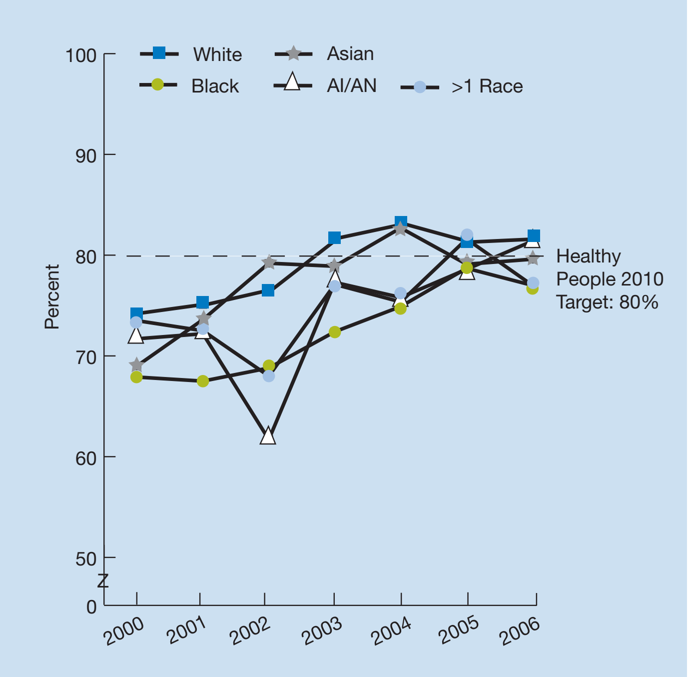
Quality of Health Care

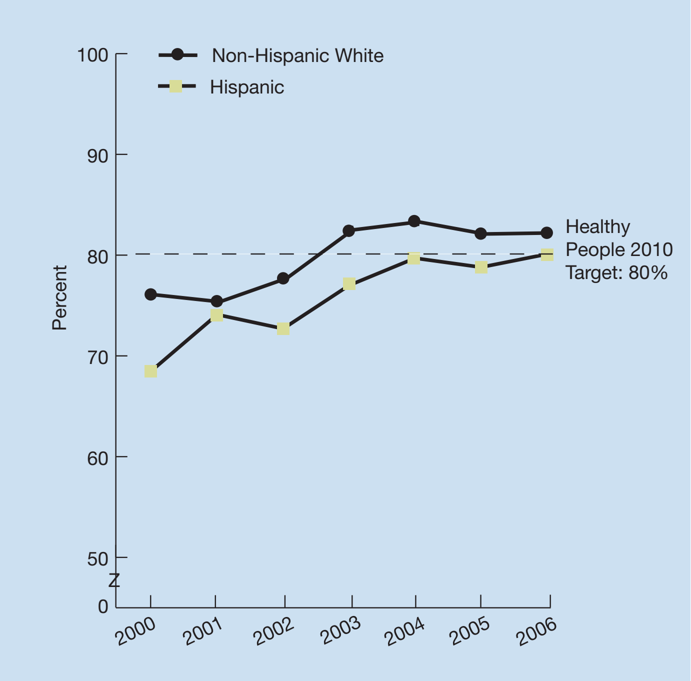
Prevention: Early Childhood Vaccinations

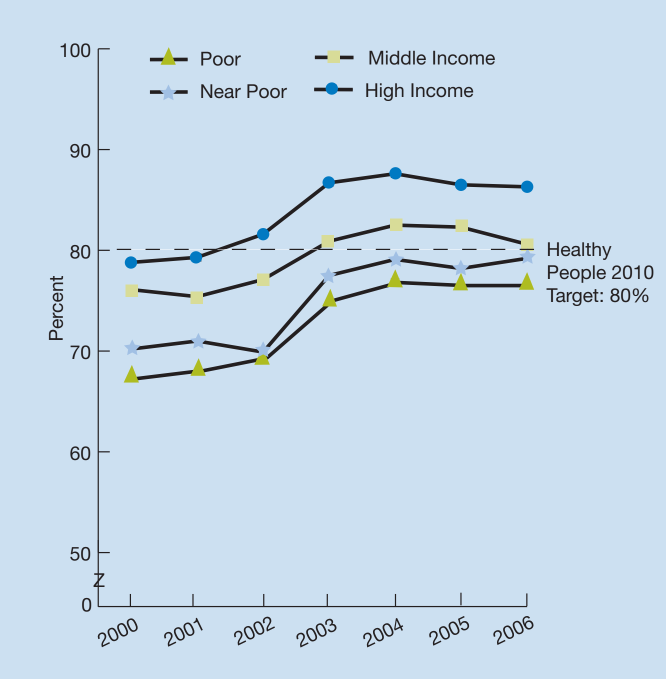
Childhood vaccinations protect recipients from illness and disability and protect others in the community. Vaccinations are important for reducing mortality and morbidity in populations.

Untreated Cavities More Common Among Low-Income Children—Austin American-Statesman

Figure 4.32. Composite measure: Children ages 19-35 months who received all recommended vaccines, by race (top), ethnicity (bottom), and income (next page top), 2000-2006







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

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Immunization Survey, 2000-2006.

Reference population: Civilian noninstitutionalized population ages 19-35 months.

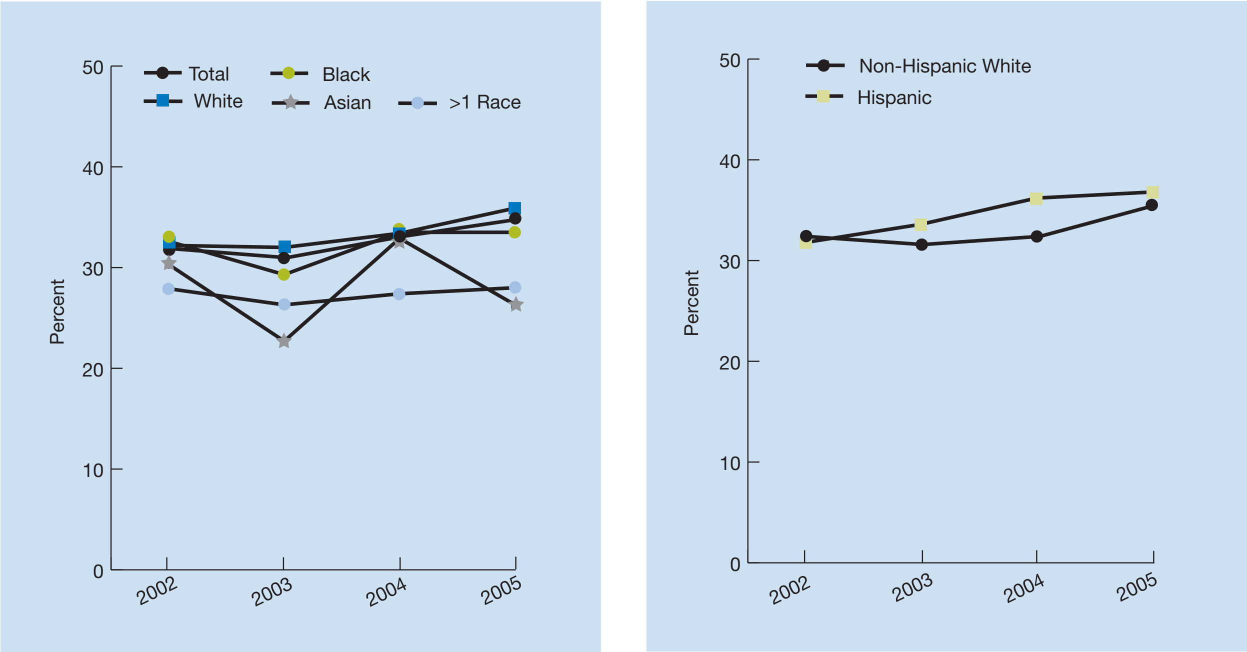
Note: Recommended vaccines for children ages 19-35 months are based on the Healthy People 2010 objective and do not include varicella vaccine or vaccines added to the recommended schedule after 1998 for children up to 35 months of age. Racial categories changed in 2000 and may not be comparable with those used for previous years. More information can be found in the Measure Specifications appendix.

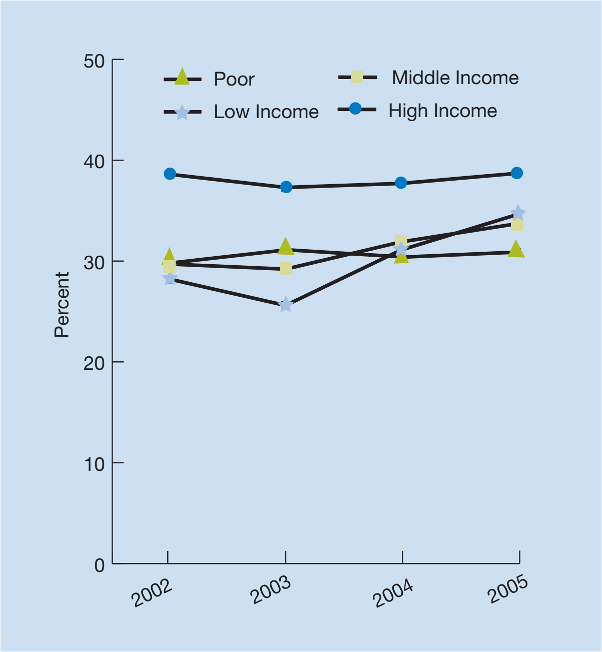
- From 2000 to 2006, the gap between Blacks and Whites and between Asians and Whites who received all recommended vaccines decreased (Figure 4.32). However, in 2006, Black children were less likely than White children to receive all recommended vaccines (77.0% compared with 81.6%).
- The gap between Hispanics and non-Hispanic Whites in the percentage of children who received all recommended vaccines decreased during this time period. In 2006, there were no statistically significant differences between Hispanics and non-Hispanic Whites.
- The gap between children from poor families and children from high-income families decreased. However, in 2006, the percentage of children who received all recommended vaccines was lower for children from poor (76.5%), near-poor (79.5%), and middle-income families (80.6%) than for children from high-income families (86.3%).
- Nationally, vaccination coverage levels among White (81.6%), AI/AN (81.4%), non-Hispanic White (82.2%), Hispanic (80.1%), middle-income (80.6%), and high-income (86.3%) children achieved the Healthy People 2010 objective of 80% of children receiving all recommended vaccines.

Prevention: Counseling About Physical Activity

Lack of physical activity contributes to overweight in children. Routine promotion of physical activity among children is widely recommended and may help them develop habits that will last into adulthood, thereby influencing better long-term health.

Figure 4.33. Children ages 2-17 for whom a health provider ever gave advice about the amount and kind of exercise, sports, or physically activity hobbies they should have, by race (top left), ethnicity (top right), and income (bottom left), 2002-2005





Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2005.

Reference population: Civilian noninstitutionalized population ages 2-17.

Note: More data by insurance status can be found in the Low-Income Groups section.

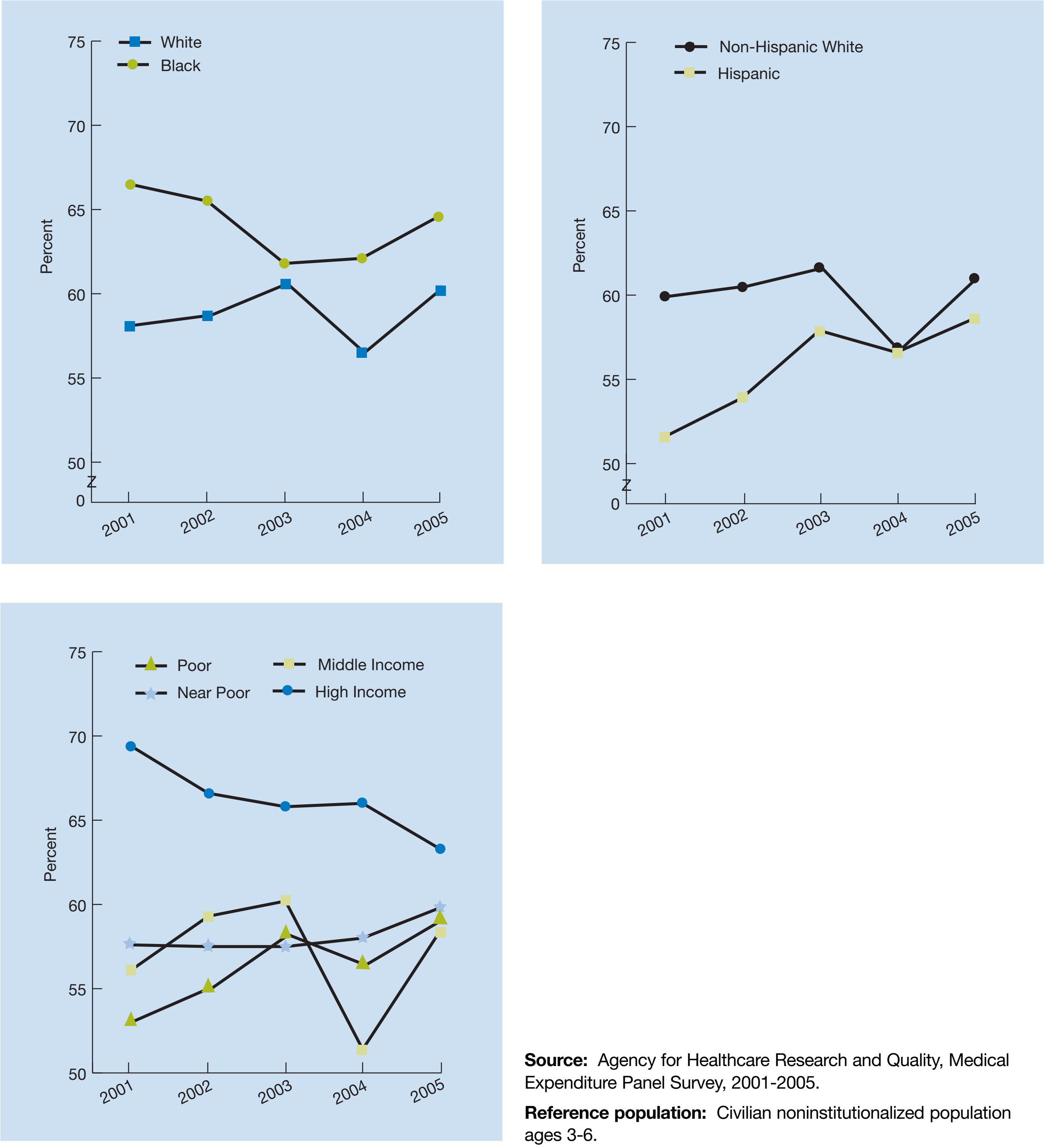
- From 2002 to 2005, the overall percentage of children whose parents or guardians reported ever receiving advice from a health provider about physical activity improved (from 31.9% to 34.8%; Figure 4.33). However, there were no significant changes for racial or ethnic groups.
- In 2005, Asian children (26.3%) and children of multiple race (28.0%) were less likely than Whites (35.9%) to have received advice about physical activity.
- From 2002 to 2005, the gap between poor and high-income families in the percentage of children whose parents or guardians reported advice from a health care provider about physical activity remained the same. In 2005, poor children (30.9%) and middle-income children (33.7%) were less likely than high-income children (38.7%) to have received advice about physical activity.
- In 2005, uninsured children were less likely than privately insured children to have received advice about physical activity (28.5% compared with 36.1%; data not shown in this figure. See Figure 4.23).

Prevention: Vision Screening

Vision checks for children can help to detect eye problems early and, in some cases, improve the chances that corrective treatments will be prescribed and successful.

> *Uninsured children were less likely than privately insured children to receive vision screening.*

Figure 4.34. Children ages 3-6 who ever had their vision checked by a health provider, by race (top left), ethnicity (top right), and income (bottom left), 2001-2005



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2001-2005.

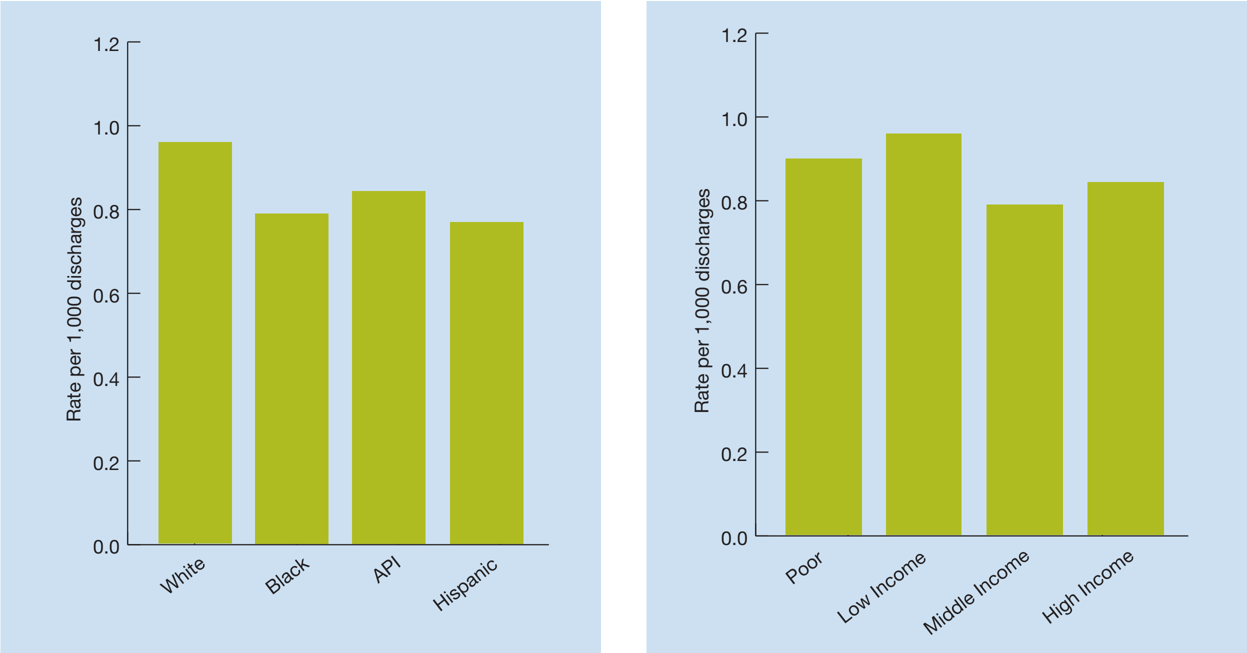
Reference population: Civilian noninstitutionalized population ages 3-6.

- There were no statistically significant racial or ethnic differences in the percentage of children who received vision screening (Figure 4.34).
- Uninsured children were less likely than privately insured children to receive vision screening (41.6% compared with 61.4%; 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, with significant associated increases in length of stay, billed charges, and inpatient mortality.[44] To the degree that such 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 4.35. Accidental puncture or laceration during procedure per 1,000 discharges, children under age 18, by race/ethnicity (left) and income (right), 2005



Key: API = Asian or Pacific Islander.

Source: Agency for Healthcare Research and Quality, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2005.

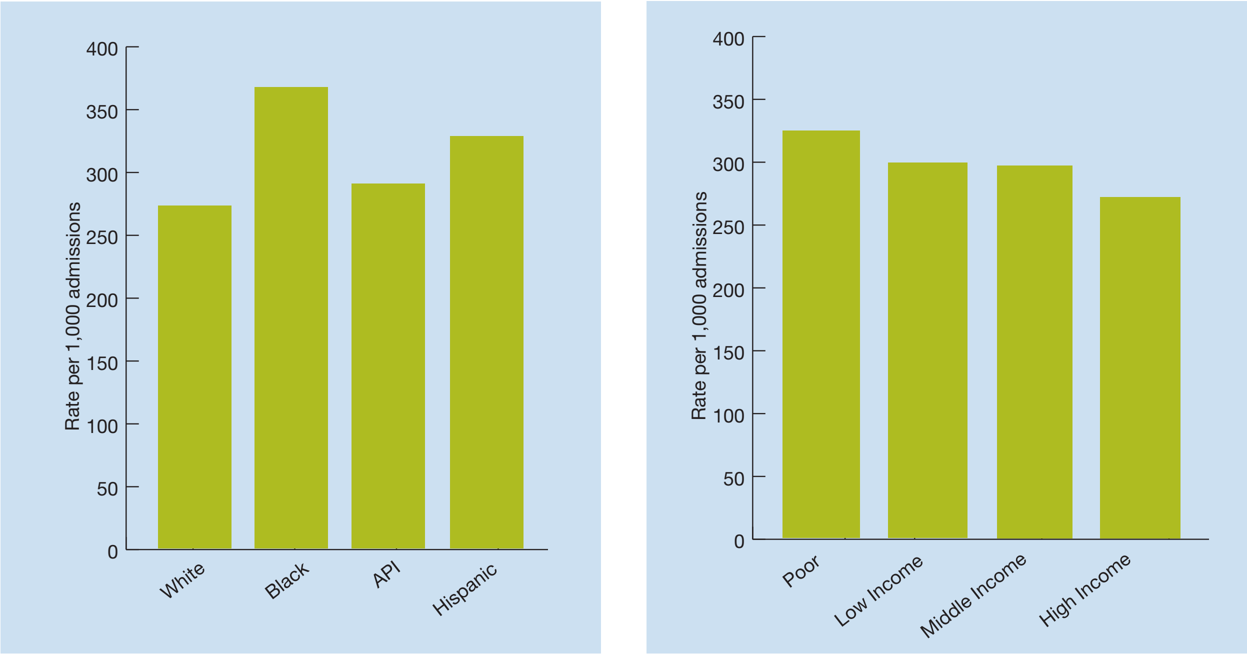
Note: White, Black, and API are non-Hispanic. The HCUP SID disparities analysis file is designed to provide national estimates on disparities using weighted records from a sample of hospitals from 23 States that have 63% of the U.S. resident population. Income categories are based on the median income of the ZIP Code of the patient's residence. These data are not risk adjusted. Rates include medical or surgical discharges only.

- Black children (0.79 per 1,000 discharges) and Hispanic children (0.77 per 1,000 discharges) had lower rates of accidental puncture or laceration than White children (0.96 per 1,000 discharges) (Figure 4.35).
- Children living in low-income communities had a higher rate of accidental puncture or laceration than children living in high-income communities (0.96 per 1,000 discharges compared with 0.84 per 1,000 discharges).

Timeliness: Admissions With Perforated Appendix

Appendiceal perforation or rupture may increase risks of internal organ damage, female infertility, and even death.[45] Research suggests that there is little lag in the United States between correct diagnosis of appendicitis and surgical intervention.[46] Therefore, perforated appendicitis in children may better reflect delayed symptom recognition by parents or providers, combined with logistical, financial, racial, sociocultural, and other barriers to timely access to acute care for what is a time-dependent acute illness.[47] Prior studies based on data from the 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.[48]

Figure 4.36. Perforated appendixes per 1,000 admissions with appendicitis, ages 1-17, by race/ethnicity (left) and income (right), 2005



Key: API = Asian or Pacific Islander.

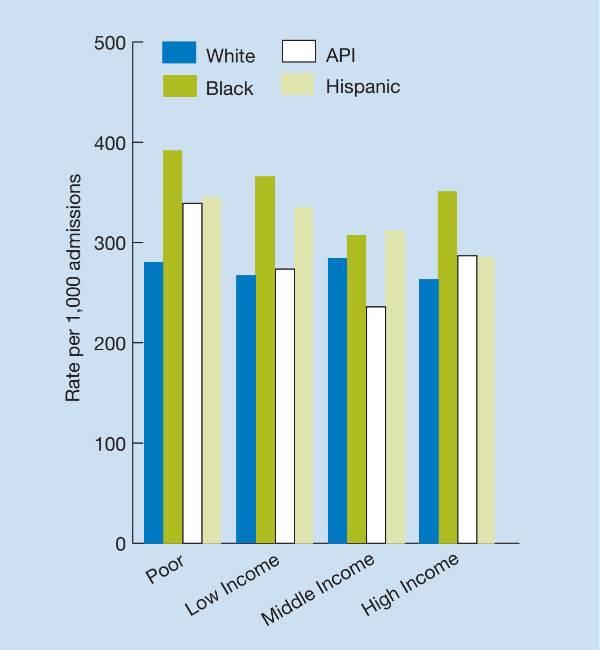
Source: Agency for Healthcare Research and Quality, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2005.

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 23 States that have 63% of the U.S. resident population. Income categories are based on the median income of the ZIP Code of the patient's residence.

- Among children with appendicitis, discharges with perforations were higher for Blacks (367.0 per 1,000 admissions) and Hispanics (328.0 per 1,000 admissions) than Whites (272.9 per 1,000 admissions) (Figure 4.36).
- Among children with appendicitis, discharges with perforations were higher for people living in poor communities (324.1 per 1,000 admissions), low-income communities (298.6 per 1,000 admissions), and middle-income communities (296.7 per 1,000 admissions) than for people living in high-income communities (271.3 per 1,000 admissions).

To distinguish between the effects of race and ethnicity and those of income on pediatric discharges with perforated appendix, this measure is stratified by income level.

Figure 4.37. Perforated appendixes per 1,000 admissions with appendicitis, ages 1-17, by race/ethnicity, stratified by income, 2005



Key: API = Asian or Pacific Islander.

Source: Agency for Healthcare Research and Quality, Center for Delivery, Organization, and Markets, Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases (SID) disparities analysis file, 2005.

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 23 States that have 63% of the U.S. resident population. Income categories are based on the median income of the ZIP Code of the patient's residence.

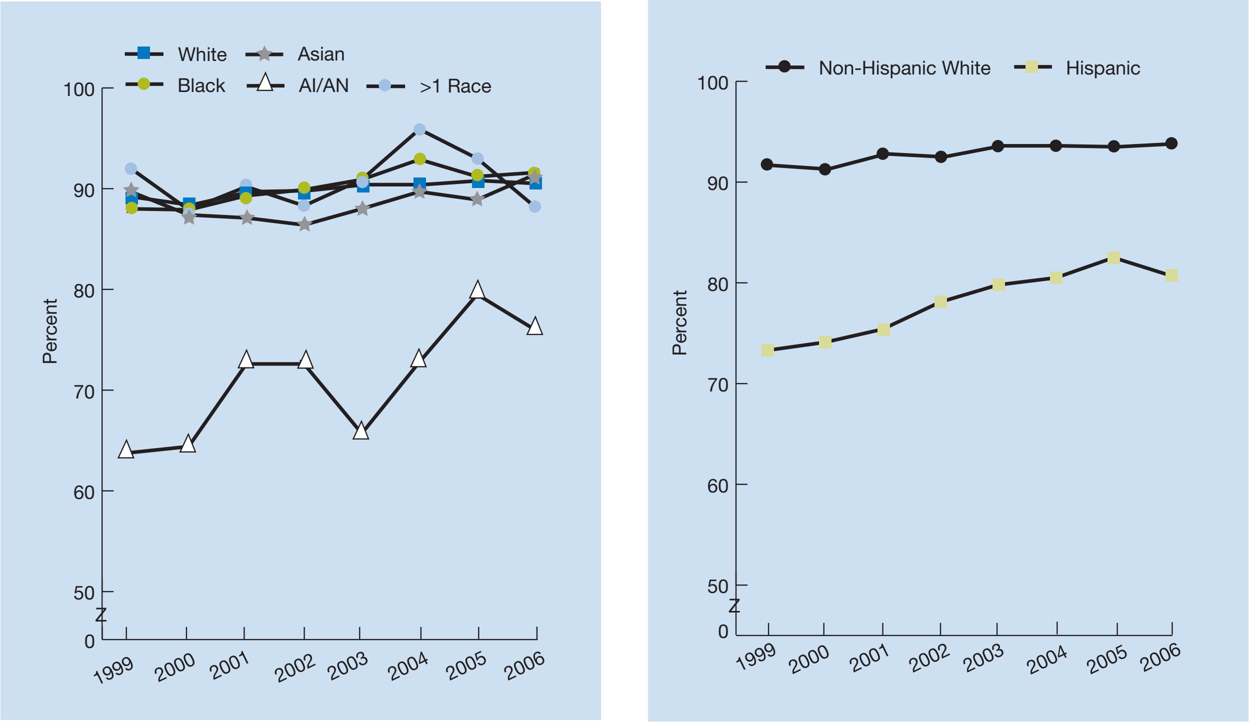
- Hispanic children living in communities of every income level except high-income communities had higher rates of hospital discharges with perforated appendix than Whites (Figure 4.37).
- Black children living in communities of every income level except middle-income communities had higher rates of hospital discharges with perforated appendix than Whites.
- There were no statistically significant differences between APIs and Whites at any income level.

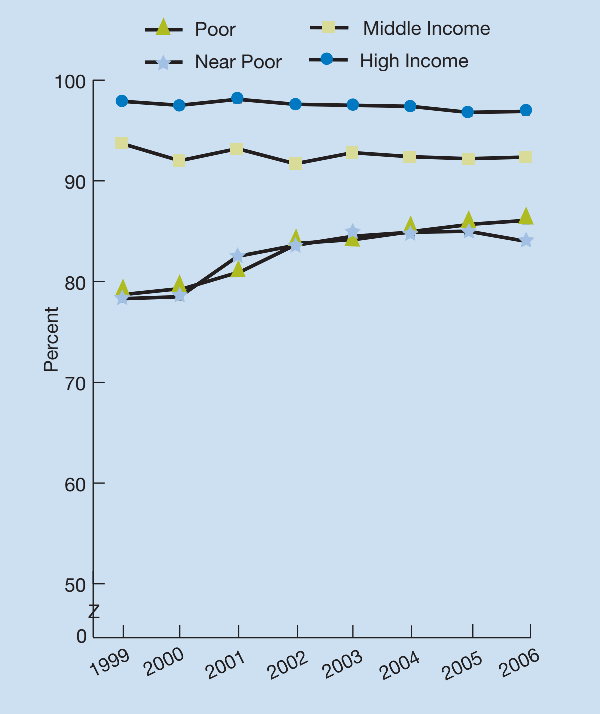
Access to Health Care

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.[49]

Figure 4.38. Children with health insurance, by race (left), ethnicity (right), and family income (next page top), 1999-2006





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

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 1999-2006.

Reference population: 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.

- From 1999 to 2006, the gap between AI/ANs and Whites and between Hispanics and non-Hispanic Whites in the percentage of children with health insurance decreased (Figure 4.38).
- In 2006, the percentage of children with health insurance was significantly lower for AI/AN children than for White children (76.0% compared with 90.5%).
- In 2006, the percentage of children with health insurance was significantly lower for Hispanic children than for non-Hispanic White children (80.7% compared with 93.8%).
- In 2006, the percentage of children with health insurance was significantly lower for poor (86.1%) and near-poor children (84.0%) than for high-income children (96.9%).

Older Adults

In 2006, 37.3 million people age 65 and over lived in the United States.[50] Further, the percentage of the population over age 65 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.[51] The past century has seen significant increases in life expectancy; in 2007, 65-year-olds could expect to live an additional 18.7 years.[50] Nonetheless, older adults face greater health care concerns than younger populations. In 2006, 38.9% of noninstitutionalized older adults assessed their health as excellent or very good, compared with 65.1% of people ages 18-64,[52] and most older adults have at least one chronic condition.

Older women outnumber older men by more than one-third.[50] 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.[53] About 3.4 million older people lived below the poverty level in 2006, corresponding to a poverty rate of 9.4%.50 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.[50]

The Medicare program provides core health insurance to nearly all older Americans and reduces many financial barriers to acute and post-acute 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 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 three quality measures and one access measure of particular importance to the older population:

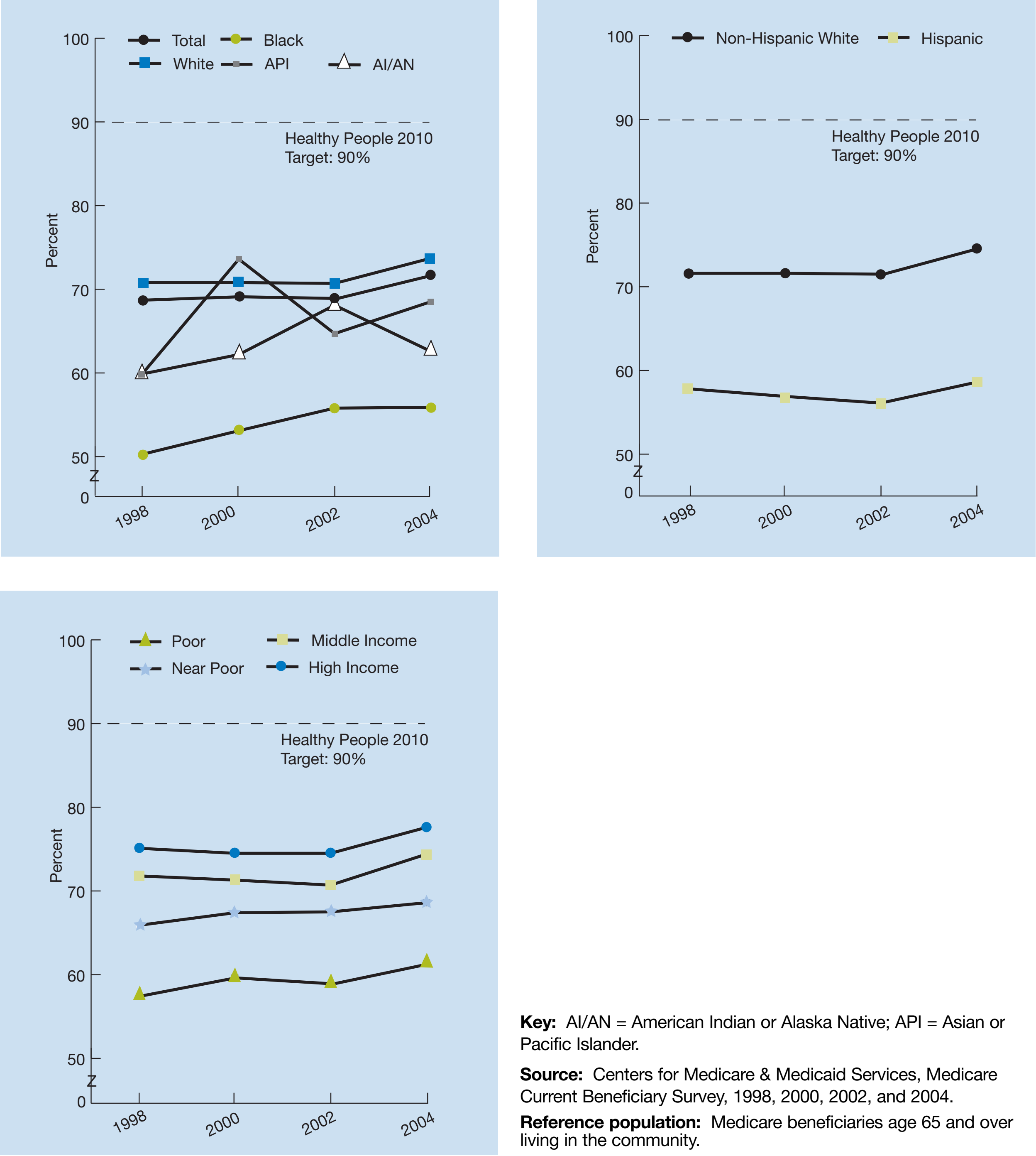
Component of health care need	Measure
Prevention	Influenza vaccination, vision screening
Access to care	Delayed care due to cost
Patient centeredness	Health literacy

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 4.39. Medicare beneficiaries age 65 and over who had an influenza vaccination in the last winter, by race (top left), ethnicity (top right), and income (bottom left), 1998, 2000, 2002, and 2004



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

Source: Centers for Medicare & Medicaid Services, Medicare Current Beneficiary Survey, 1998, 2000, 2002, and 2004.

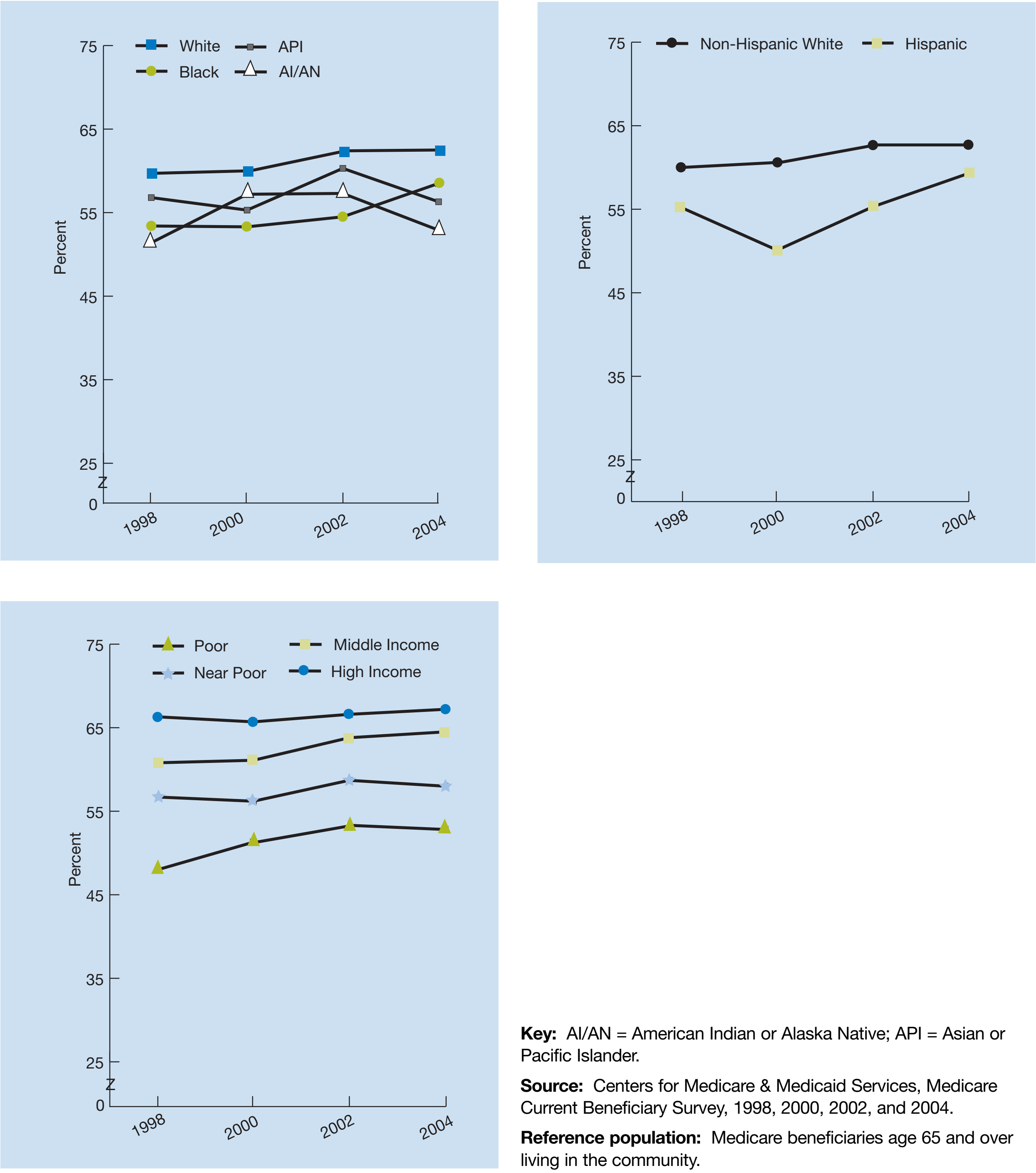
Reference population: Medicare beneficiaries age 65 and over living in the community.

- From 1998 to 2004, the percentage of Medicare beneficiaries age 65 and over with an influenza vaccination in the last winter increased overall from 68.7% to 71.7% (Figure 4.39).
- From 1998 to 2004, the gap between Blacks and Whites decreased. However, in 2004, the percentage was still significantly lower for Blacks than for Whites (55.9% compared with 73.7%).
- During this period, the gap between Hispanics and non-Hispanic Whites increased. In 2004, the percentage was also significantly lower for Hispanics than for non-Hispanic Whites (58.6% compared with 74.6%).
- In 2004, the percentage was significantly lower for poor (61.3%), near-poor (68.6%), and middle-income (74.4%) beneficiaries than for high-income beneficiaries (77.6%).
- In 2004, the Healthy People 2010 target of 90% of older Americans with influenza vaccination was not achieved by any population group.

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. Because eye problems are often not recognized by older people, the U.S. Preventive Services Task Force recommends routine vision screening.[54]

Figure 4.40. Medicare beneficiaries age 65 and over who had an eye examination in the last 12 months, by race (top left), ethnicity (top right), and income (bottom left), 1998, 2000, 2002, and 2004



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

Source: Centers for Medicare & Medicaid Services, Medicare Current Beneficiary Survey, 1998, 2000, 2002, and 2004.

Reference population: Medicare beneficiaries age 65 and over living in the community.

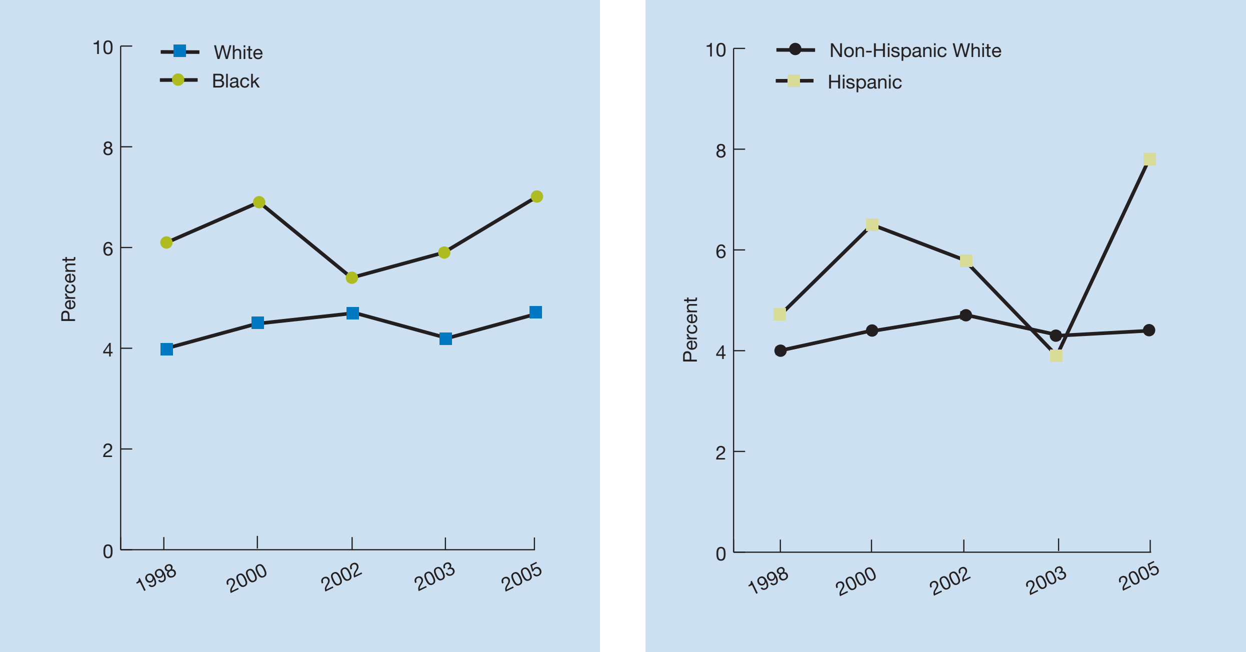
- From 1998 to 2004, the gap between Blacks and Whites in the percentage of Medicare beneficiaries age 65 and over with an eye exam in the past year decreased. In 2004, there was no statistically significant difference between Blacks and Whites (Figure 4.40).
- During this period, there were no statistically significant changes or differences between Hispanics and non-Hispanic Whites.
- During this period, the gap between poor individuals and high-income individuals remained the same. In 2004, poor (52.8%) and near-poor (58.0%) individuals were less likely than high-income individuals (67.2%) to have had an eye exam in the past year.

Access to Care

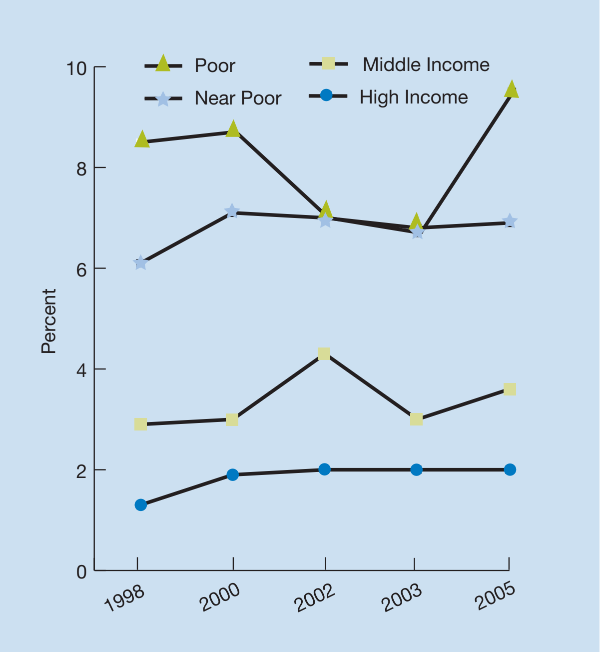
Delayed Care Due to Cost

Timely delivery of appropriate 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 reduce opportunities for optimal treatment.[xiv]

Figure 4.41. Medicare beneficiaries age 65 and over with delayed care due to cost, by race (left), ethnicity (right), and income (next page top), 1998, 2000, 2002, 2003, and 2005



[xiv] In this measure, delayed care due to cost is self-reported by patients.



Source: Centers for Medicare & Medicaid Services, Medicare Current Beneficiary Survey, 1998, 2000, 2002, 2003, and 2005.

Reference population: Medicare beneficiaries age 65 and over living in the community.

- The percentage of Medicare beneficiaries age 65 and over who delayed care due to cost was higher for Hispanics compared with non-Hispanic Whites (7.8% compared with 4.4%; Figure 4.41).
- From 1998 to 2005, there were no significant changes in the gap between poor and high-income people in the percentage of Medicare beneficiaries age 65 and over who delayed care due to cost. In 2005, the percentage delaying care was significantly higher for poor (9.5%), near-poor (6.9%), and middle-income (3.6%) beneficiaries than for high-income beneficiaries (2.0%).

Focus on Health Literacy

Healthy People 2010's Objective 11-2 is to improve Americans' health literacy, defined as the capacity to obtain, process, and understand basic health information and services needed to make appropriate health care decisions.[55] In 2003, the first-ever national assessment of health literacy was conducted—the Health Literacy Component (HLC) of the National Assessment of Adult Literacy (NAAL). The HLC assesses responses to health-related tasks presented in written form. These tasks fall into three categories: clinical, prevention, and health system navigation.

The HLC tasks require familiarity with health-related words; experience with written materials, such as drug labels and health insurance forms; or knowledge of how the health care system works. The HLC did not measure the ability to obtain or understand information from nonprint sources.

There are racial and ethnic differences in health literacy, with minority adults having lower health literacy than White adults, with the exception of Asians and Pacific Islanders.[56] There is evidence that inadequate health literacy is linked to all-cause mortality and cardiovascular mortality among older adults.[57]

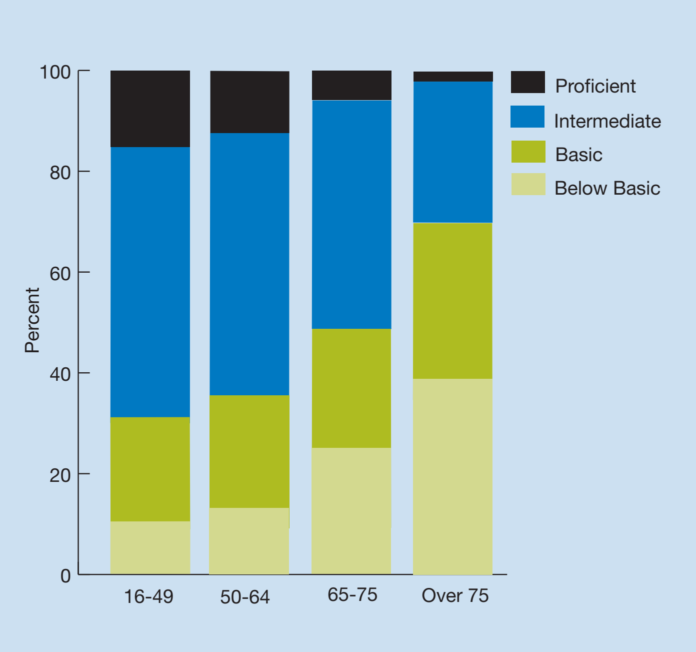
The HLC measures the English health literacy of adults in the United States. Four million adults had language barriers or cognitive or mental disabilities that prevented them from taking the NAAL; therefore, they are not included in the results presented below. The NAAL captures no information on these adults' literacy in another language.

The NAAL groups adults without language barriers into four performance levels:

- **Below basic:** This performance level indicates that a person can understand no more than the most simple and concrete skills (e.g., circle the date of a medical appointment on a hospital appointment slip). Thirty million adults were found to have below basic health literacy; 7 million of these were unable to answer the simplest of questions and were determined to be nonliterate in English.
- **Basic:** This performance level indicates that a person can perform the skills needed for simple and everyday activities (e.g., give two reasons a person with no symptoms of a specific disease should be tested for the disease, based on information in a clearly written pamphlet). Forty-seven million adults were found to have basic health literacy.
- **Intermediate:** This performance level indicates that a person can perform the skills needed for moderately challenging activities (e.g., identify three substances that may interact with an over-the-counter drug to cause a side effect, using the information on the over-the-counter drug label). One hundred and fourteen million adults were found to have intermediate health literacy.
- **Proficient:** This performance level indicates that a person can perform the skills needed for more complex and challenging activities (e.g., find the information required to define a medical term by searching through a complex document) needed to manage health and prevent disease. Twenty-six million adults were found to have proficient health literacy.

Racial and ethnic disparities in health literacy were discussed in the 2007 NHDR.[58] Findings on health literacy continue to be a topic of interest in the area of health disparities. This year, differences by age are discussed here.

Figure 4.42. Adults at each health literacy level, by age, 2003



Source: National Assessment of Adult Literacy, Health Literacy Component, 2003.

Note: Adults are defined as people age 16 years and over living in households or prisons. Adults who could not be interviewed because of language spoken or cognitive or mental disabilities (3% in 2003) are excluded from this figure.

- Adults age 65 and over were more likely to have below basic or basic health literacy skills than those under age 65 (Figure 4.42).
- The health literacy of adults over age 75 was significantly worse than adults ages 65 to 75. More than two-thirds of adults over age 75 had below basic or basic health literacy.
- Age had relatively little relationship to health literacy among adults who were under age 65.

Residents of Rural Areas

About one in five Americans lives in a nonmetropolitan area.[59] Compared with their urban counterparts, rural residents are more likely to be older, poor,[60] and in fair or poor health and to have chronic conditions.[59] Rural residents are less likely to receive recommended preventive services and report, on average, fewer visits to health care providers.[61]

Although 20% of Americans live in rural areas,[xv] only 9% of physicians in America practice in those settings.[62] Nurse practitioners, nurse midwives, and physician assistants also deliver care. Multiple programs and services deliver needed services in rural areas, such as the National Health Service Corps Scholarship Program, Indian Health Service, 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,[63] 1,500 of which have 50 or fewer beds. Most of these hospitals are critical access hospitals that have 25 or fewer beds. Rural hospitals largely provide primary care and chronic disease management. They face unique challenges due to their size and case mix. During the 1980s, many were forced to close because of financia1 losses[64]; however, 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"[xvi] in the Nation, most have limited health care services and many do not have any.[65]

Many measures of relevance to residents of rural areas are tracked in the NHDR. Findings presented here highlight four 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
Prevention	Prenatal care and maternal health
Management	Recommended services for diabetes
Treatment	Recommended care for colorectal cancer
Timeliness	Care for illness or injury as soon as wanted
Access to care	Health insurance

[xv] Many terms are used to refer to the continuum of geographic areas. For Census 2000, the U.S. Census Bureau's classification of "rural" consists of all territory, population, and housing units located outside of 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.

[xvi] "Frontier counties" have a population density of less than 7 people per square mile; thus, residents 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, in addition to presenting data from MEPS and HCUP, the NHDR presents a measure from the National Vital Statistics System-Natality. Federal definitions of micropolitan and noncore statistical areas (not metropolitan or micropolitan areas) published in June 2003 are used.[66] In addition, urban influence codes are used to subdivide metropolitan areas into large and small metropolitan areas. 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 areas of 1 million or more inhabitants.
- Medium metropolitan statistical area: counties in metropolitan areas of 250,000-999,999 inhabitants.
- Small metropolitan statistical area: metropolitan area of 50,000-249,999 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.

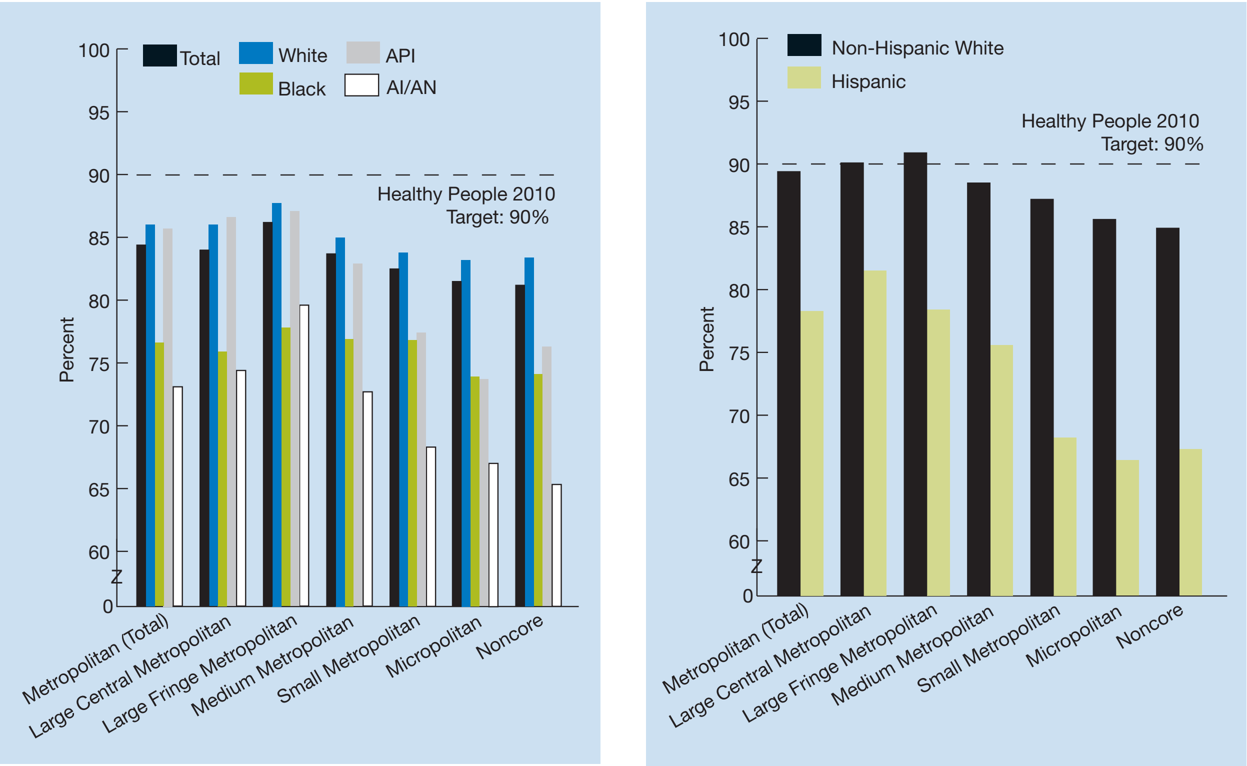
Urban-rural contrasts for measures from MEPS and HCUP compare residents of rural statistical areas (including both micropolitan and noncore statistical areas) with residents of urban statistical areas (including both large central, large fringe, medium, and small metropolitan statistical areas). Sample sizes are often too small to provide reliable estimates for noncore statistical areas, limiting the ability to assess disparities among residents of these areas.

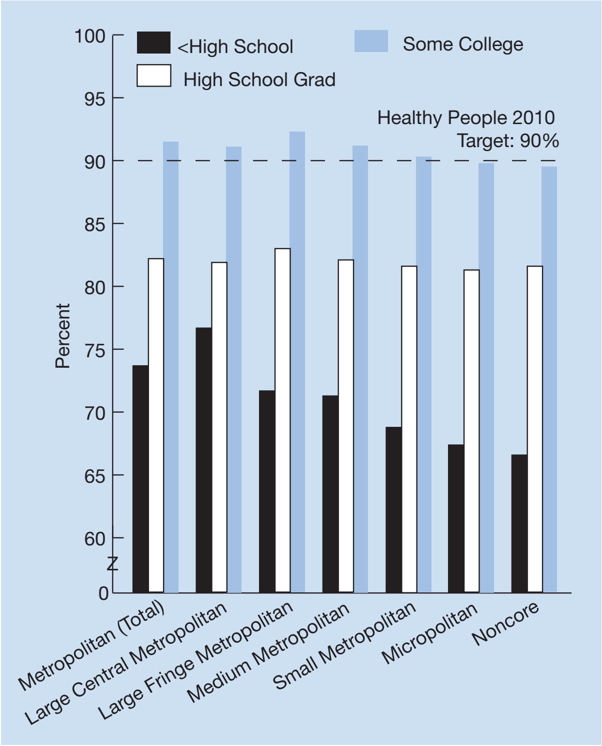
Quality of Health Care

Prevention: Prenatal Care and Maternal Health

Childbirth and reproductive care are the most common reasons for women of childbearing age to use health care services, and childbirth is the most common reason for hospital admission.[67] It is recommended that women begin receiving prenatal care in the first trimester of pregnancy.

Figure 4.43. Women who completed a pregnancy in the last 12 months who first received prenatal care in the first trimester, selected States, by geographic location, stratified by race (top left), ethnicity (top right), and education (bottom left), 2005





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

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System-Natality, 2005.

Reference population: Women with live births.

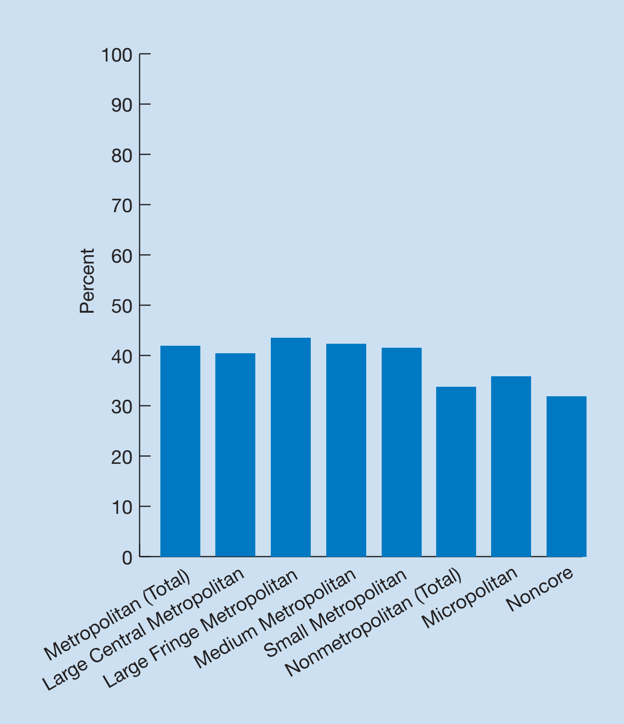
Note: Data for 2005 include the 39 reporting areas (37 States, DC, and New York City) that used 1989 revision of the U.S. Standard Certificate of Live Birth in 2005. Reporting areas that have adopted the 2003 revision are excluded because prenatal data based on the 2003 revision are not comparable with data based on 1989 and earlier revisions of the U.S. Standard Certificate of Live Birth.

- In 2005, there were no significant differences observed between geographic locations in the percentage of women who initiated prenatal care in the first trimester (Figure 4.43).
- In micropolitan and noncore (rural) areas, there were significant racial and educational disparities. In these areas, Black women were less likely than White women to receive prenatal care (micropolitan, 73.9% compared with 83.2%; noncore, 74.1% compared with 83.4%). In micropolitan areas, APIs were also less likely than Whites to receive prenatal care (73.7% compared with 83.2%). In both areas, women with less than a high school education were less likely than women with at least some college education to receive prenatal care (micropolitan, 67.4% compared with 89.8%; noncore, 66.6% compared with 89.5%).
- In large central metropolitan areas, there were significant racial and education disparities. In these areas, Black women were less likely than White women to receive prenatal care (75.9% compared with 86.0%). Individuals with less than a high school education (76.7%) and high school graduates (81.9%) were less likely to receive prenatal care than individuals with at least some college education (91.2%).
- In medium and small metropolitan areas, there were significant ethnic and educational disparities. Hispanic women were less likely than non-Hispanic White women to receive prenatal care (medium, 75.6% compared with 88.5%; small, 68.2% compared with 87.2%). Women with less than a high school education were less likely than women with at least some college education to receive prenatal care (medium, 71.3% compared with 91.2%; small, 68.8% compared with 90.3%).
- In 2005, only women with at least some college education who lived in metropolitan areas and non-Hispanic White women in large central and large fringe metropolitan areas achieved the Healthy People 2010 target of 90% of women receiving prenatal care in the first trimester.

Management: Recommended Services for Diabetes

The NHDR presents a composite measure that tracks receipt of three recommended services for effective management of diabetes: hemoglobin A1c testing, dilated eye examination, and foot examination in the past year.

Figure 4.44. Composite measure: Adults age 40 and over with diagnosed diabetes who received all three recommended services for diabetes in the calendar year (hemoglobin A1c measurement, dilated eye examination, and foot examination), by geographic location, 2005



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, 2005.

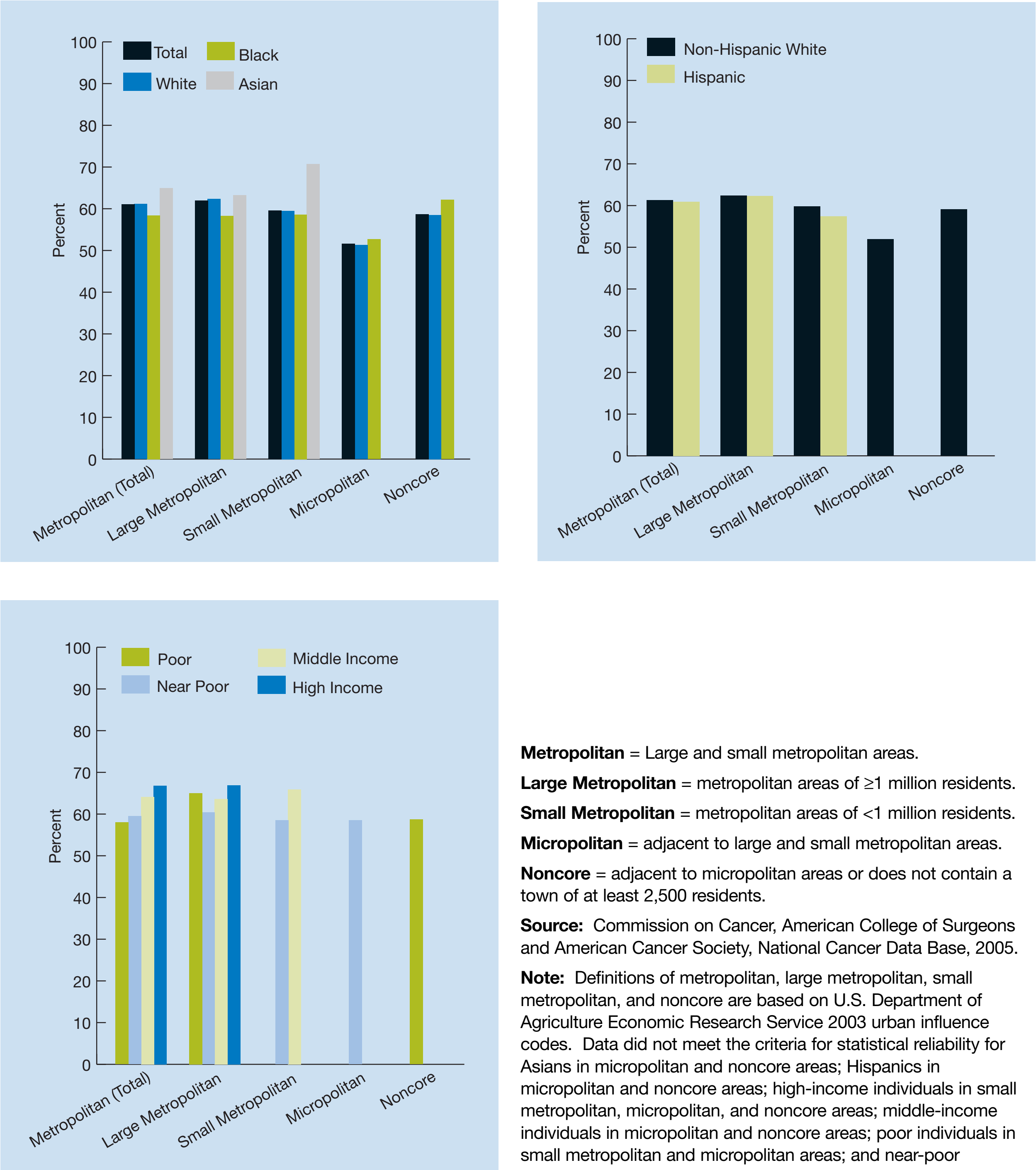
Reference population: Civilian noninstitutionalized population age 40 and over.

Note: Recommended services for diabetes are (1) hemoglobin A1c testing, (2) dilated eye examination, and (3) foot examination. Sample sizes were too small to provide estimates by race, ethnicity, income, or education in all areas except metropolitan (total).

- In 2005, the percentage of diabetes patients who received all three recommended services for diabetes was lower for patients in noncore areas overall than in metropolitan areas (31.9% compared with 41.9%; Figure 4.44).
- In metropolitan areas (total), there were significant ethnic, income, and educational disparities (data not shown). Hispanics were less likely than non-Hispanic Whites to receive recommended care for diabetes (33.6% compared with 45.4%). Poor (32.4%), near-poor (31.1%), and middle-income (38.6%) individuals were less likely than high-income individuals (54.6%) to receive recommended care for diabetes. Individuals with less than a high school education were less likely than individuals with at least some college education to receive recommended care for diabetes (33.2% compared with 48.4%).

Treatment: Recommended Care for Colorectal Cancer

Figure 4.45. Patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined, by geographic location, stratified by race (top left), ethnicity (top right), and income (bottom left), 2005



Metropolitan = Large and small metropolitan areas.

Large Metropolitan = metropolitan areas of ≥1 million residents.

Small Metropolitan = metropolitan areas of <1 million residents.

Micropolitan = adjacent to large and small metropolitan areas.

Noncore = adjacent to micropolitan areas or does not contain a town of at least 2,500 residents.

Source: Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base, 2005.

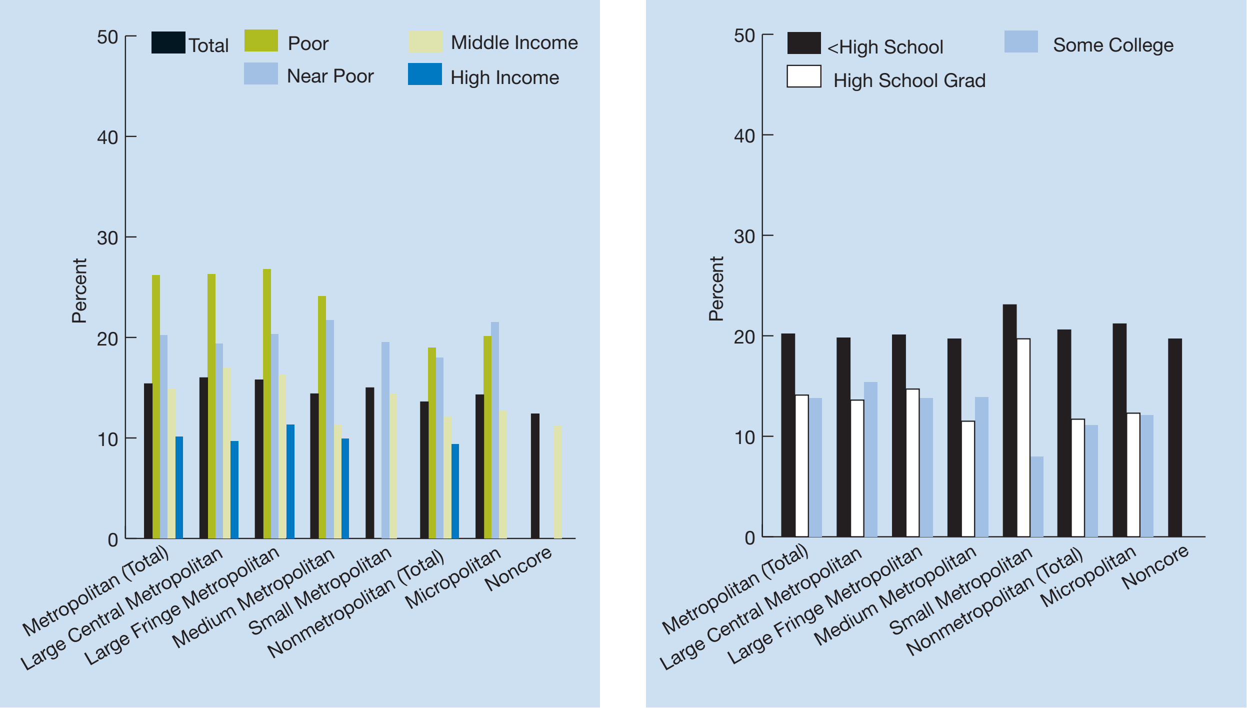
Note: Definitions of metropolitan, large metropolitan, small metropolitan, and noncore are based on U.S. Department of Agriculture Economic Research Service 2003 urban influence codes. Data did not meet the criteria for statistical reliability for Asians in micropolitan and noncore areas; Hispanics in micropolitan and noncore areas; high-income individuals in small metropolitan, micropolitan, and noncore areas; middle-income individuals in micropolitan and noncore areas; poor individuals in small metropolitan and micropolitan areas; and near-poor individuals in noncore areas.

- There are statistically significant differences among geographic locations in the percentage of colon cancer patients who received recommended treatment. Patients in micropolitan areas (51.6%) were less likely to receive recommended treatment than patients in metropolitan areas (61.0%; Figure 4.45).
- In small metropolitan areas, Asian patients with colon cancer were more likely than White patients with colon cancer to receive recommended treatment (70.7% compared with 59.5%).
- In metropolitan areas, the overall percentages of poor patients with colon cancer (58.0%) and near-poor (59.5%) patients who received recommended treatment were lower than the percentage of high-income patients (66.8%).
- Findings for other geographic locations and other comparisons were not statistically significant.

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 4.46. Adults who needed care right away for an illness, injury, or condition last 12 months who sometimes or never got care as soon as wanted, by geographic location, stratified by income (left) and education (right), 2005



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, 2005.

Reference population: Civilian noninstitutionalized population age 18 and over.

Note: Data are not available for all income or education groups in noncore areas. Data are not available for poor and high-income groups in small metropolitan areas or for high-income groups in micropolitan areas.

- There were no significant differences observed between different geographic locations in the overall rate of adults who sometimes or never get care for illness or injury as soon as wanted (Figure 4.46).
- There were significant differences by income in nonmetropolitan areas. Poor (19.0%), and near-poor (18.0%) individuals were more likely than high-income individuals (9.4%) to sometimes or never get care for illness or injury as soon as wanted in these areas.
- Differences by education were also observed in nonmetropolitan areas. In micropolitan areas, individuals with less than a high school education (21.2%) were more likely than individuals with at least some college education (12.1%) to sometimes or never get care for illness or injury as soon as wanted.
- There were significant differences by income in metropolitan locations. Poor, near-poor, and middle-income individuals were more likely than high-income individuals to sometimes or never get care for illness or injury as soon as wanted in large central metropolitan and large fringe metropolitan areas.
- There were also some differences by education in metropolitan locations. Individuals with less than a high school education were more likely than individuals with at least some college education to sometimes or never get care for illness or injury as soon as wanted in small and medium metropolitan areas.

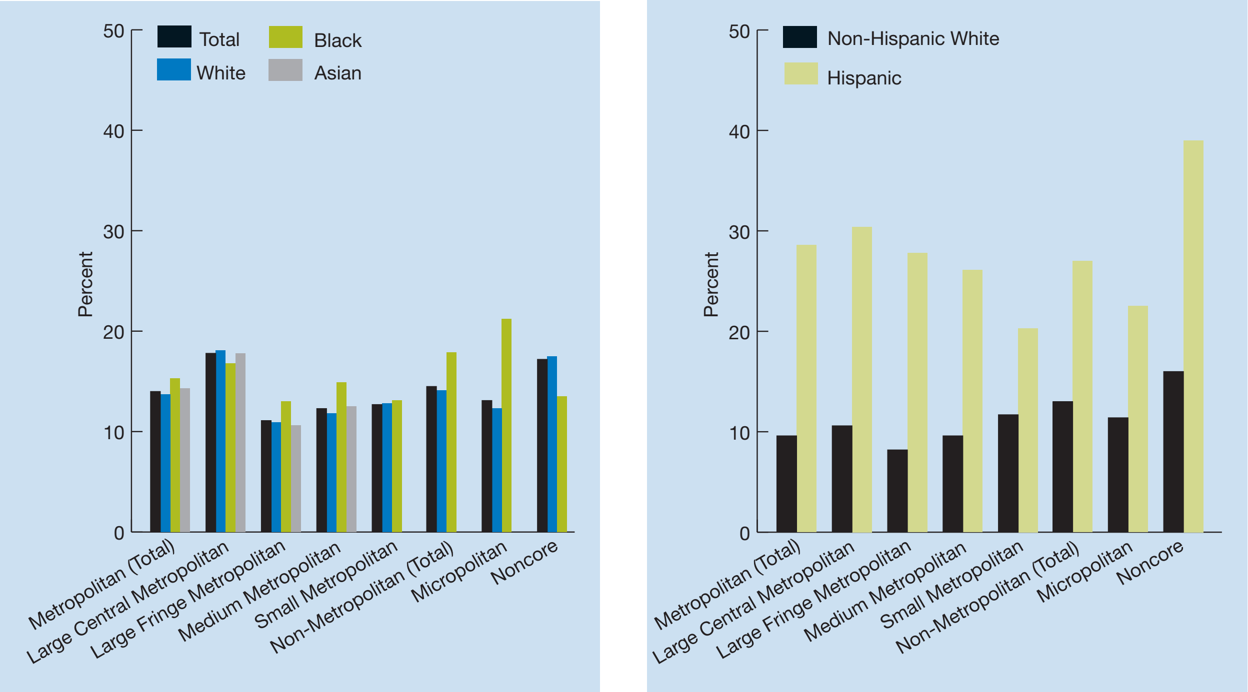
Access to Health Care

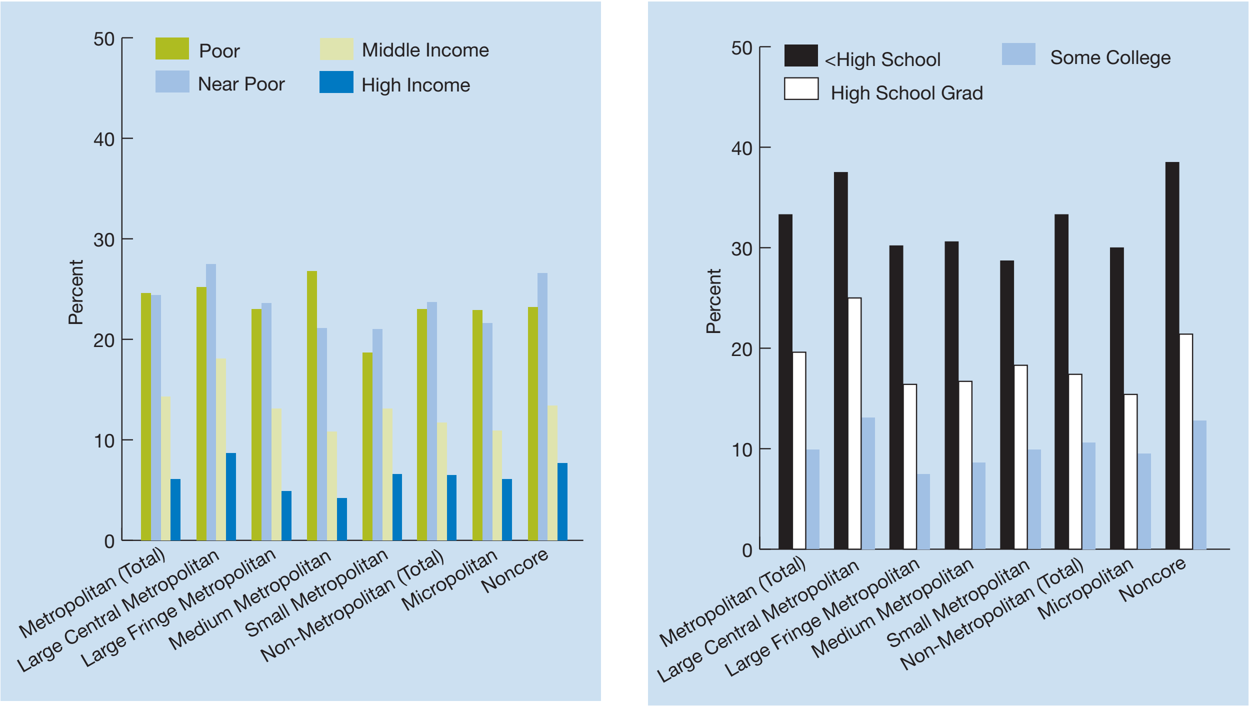
Health Insurance

Access to health care services is a prerequisite to receipt of care, yet many Americans still face barriers to care. Data for prolonged periods of uninsurance (no insurance coverage for a full year) are presented.

In rural areas, Hispanics were more than twice as likely as non-Hispanic Whites to be uninsured all year.

Figure 4.47. Adults under age 65 who were uninsured all year, by geographic location, stratified by race (left), ethnicity (right), income (next page left), and education (next page right), 2005





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, 2005.

Reference population: Civilian noninstitutionalized population age 18 and over.

Note: Estimates for Asians in small metropolitan, nonmetropolitan, micropolitan, and noncore areas did not meet criteria for statistical reliability and are not reported here.

- There were statistically significant differences within metropolitan areas in the percentage of adults under age 65 who were uninsured all year (lowest percentage of uninsured overall was in large fringe metropolitan areas, 11.1%; Figure 4.47), as well as between metropolitan and nonmetropolitan areas. In metropolitan areas, small metropolitan areas had a higher percentage of adults who were uninsured than large fringe metropolitan areas (12.7% compared with 11.1%). In nonmetropolitan areas, micropolitan areas had a higher percentage of adults who were uninsured than large fringe metropolitan areas (13.1% compared with 11.1%).

- 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 (39.0% compared with 16.0%). Poor individuals and near-poor individuals (23.2% and 26.6%, respectively) were more likely than high-income individuals (7.7%) to be uninsured all year. Individuals with less than a high school education (38.5%) and high school graduates (21.4%) were more likely than individuals with at least some college education (12.8%) 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 (21.2% compared with 12.3%). Hispanics were almost twice as likely as non-Hispanic Whites to be uninsured all year (22.5% compared with 11.4%). Poor individuals (22.9%), near-poor individuals (21.6%), and middle-income individuals (10.9%) were also more likely than high-income individuals (6.1%) to be uninsured all year. Individuals with less than a high school education (30.0%) and high school graduates (15.4%) were less likely than individuals with at least some college education (9.5%) to be uninsured all year.
- Large central metropolitan areas had significant ethnic and income disparities. In these areas, Hispanics were almost three times as likely as non-Hispanic Whites to be uninsured all year (30.4% compared with 10.6%). Poor individuals (25.2%), near-poor individuals (27.5%), and middle-income individuals (18.1%) were also more likely than high-income individuals (8.7%) to be uninsured all year.
- Large fringe metropolitan areas had significant ethnic, income, and education disparities. In these areas, Hispanics were more than three times as likely to be uninsured all year (27.8% compared with 8.2%). Poor individuals (23.0%), near-poor individuals (23.6%), and middle-income individuals (13.1%) were also more likely than high-income individuals (4.9%) to be uninsured all year. Individuals with less than a high school education (30.2%) and high school graduates (16.4%) were less likely than individuals with at least some college education (7.5%) to be uninsured all year.
- Medium metropolitan areas had significant ethnic, income, and education disparities. In these areas, Hispanics were almost three times as likely to be uninsured all year (26.1% compared with 9.6%). Poor individuals (26.8%), near-poor individuals (21.1%), and middle-income individuals (10.8%) were also more likely than high-income individuals (4.2%) to be uninsured all year. Individuals with less than a high school education (30.6%) and high school graduates (16.7%) were less likely than individuals with at least some college education (8.6%) to be uninsured all year.
- Small metropolitan areas had significant ethnic, income, and education disparities. In these areas, Hispanics were almost twice as likely to be uninsured all year (20.3% compared with 11.7%). Poor individuals (18.7%), near-poor individuals (21%), and middle-income individuals (13.1%) were also more likely than high-income individuals (6.6%) to be uninsured all year. Individuals with less than a high school education (28.7%) and high school graduates (18.3%) were less likely than individuals with at least some college education (9.9%) to be uninsured all year.

Individuals With Disabilities or Special Health Care Needs

Individuals with disabilities or special health care needs include individuals with disabilities, individuals who use nursing home and home health care or end-of-life health care, and children with special heath care needs (CSHCN). Many measures of relevance to individuals with special health care needs are tracked in the NHDR.

In this year's report, data on quality and access are presented for adults with disabilities and CSCHN. This is the second 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. In this year's report, the Adults With Disabilities section uses data from the National Health Interview Survey (NHIS) for the first time. In the 2007 report, this section used MEPS data.

The appendix tables in this year's report include activity limitations as a stub variable for all NHIS and MEPS appendix tables. The goal for future reports is to include more information about individuals with disabilities using NHIS, MEPS, and additional data sources. As in previous reports, data on quality and access are presented for CSHCN.

Adults With Disabilities

Component of health care need	Measure
Prevention	Pneumococcal vaccination for adults age 65 and over
Access to care	Private health insurance for adults ages 18-64; specific source of ongoing care; and use of hospital, emergency department, or clinic as a source of ongoing care

Children With Special Health Care Needs

Component of health care need	Measure
Management	Care coordination
Patient centeredness	Family-centered care
Access to care	Health insurance status; adequacy of health insurance

Additionally, findings for people who use nursing home care are presented in the section on nursing home, home health, and hospice care in Chapter 2, Quality of Health Care.

Adults With Disabilities

In reaching its goal to include more information about individuals with disabilities, AHRQ convened a disabilities subgroup of the NHQR/NHDR Interagency Work Group with the assistance of the Interagency Subcommittee on Disability Statistics of the Interagency Committee on Disability Research. The charge to this group was to advise AHRQ on measures of disabilities from existing data that could track disparities for disabled individuals in quality of and access to care for the NHDR and that would be comparable across national surveys. For this initial effort, the subgroup focused on measures for adults, a population for which the most survey data are available.

Several ways of defining and measuring disability exist. Among the more common approaches are to identify individuals who have problems in performing everyday functions such as vision, hearing, communication, self-care, mobility, learning, and behavior; have difficulty with complex activities such as working; or 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 collections do not capture disability. When data are collected, the collection methods are different.

The International Classification of Functioning, Disability and Health (ICF)[68] was adopted by the disabilities subgroup as a model to guide the deliberations. The subgroup carefully reviewed questions and response categories for three national surveys (NHIS, MEPS, and Medicare Current Beneficiary Survey) for consistencies and discrepancies in measurement of the major domains of disabilities in the ICF.

For the 2008 NHDR, as for the 2007 NHDR, AHRQ is using a broad, inclusive measure of disability that 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[69,70]) 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 that can be associated with a 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:

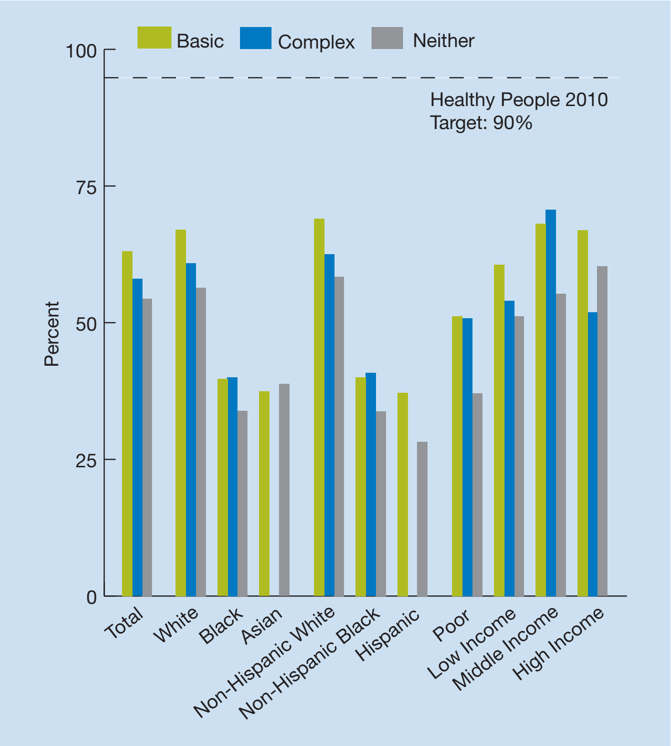
- Limitations in *basic* activities represent problems with mobility and other basic functioning at the person level.
- Limitations in *complex* activities represent limitations encountered when the person, in interaction with his or her environment, attempts to participate in community life.

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 disability[3,71] and is consistent with the ICF separation of activities and participation domains.[1] These two categories are not mutually exclusive; people may have limitations in both basic activities and complex activities.

Prevention: Pneumococcal Vaccination for Adults Age 65 and Over

Vaccination is an effective strategy for reducing illness, death, and disparities associated with pneumococcal disease and influenza.[72,73] Receiving a pneumococcal vaccination is particularly important for high-risk individuals, including older adults, adults with specified chronic conditions, and residents of long-term care facilities.[74,75] Such groups are overrepresented by individuals with disabilities. In 2006, the overall percentage of adults age 65 and over who had ever received a pneumococcal vaccination was 57.3% (data not shown). The Healthy People 2010 target is to have 90% of adults age 65 and over receive a pneumococcal vaccination.

Figure 4.48. Adults age 65 and over who ever received pneumococcal vaccination by race, ethnicity, and family income, stratified by activity limitation, 2006



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 limitations.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2006.

Reference population: Civilian noninstitutionalized population age 65 and over.

Note: Estimates are age adjusted to the 2000 U.S. standard population. Data for Asians and Hispanics with complex limitations did not meet criteria for statistical reliability.

- For all adults age 65 and over, those with basic activity limitations were significantly more likely than those with neither limitation to have had a pneumococcal vaccination (63.1% compared with 54.4%; Figure 4.48).
- For White, non-Hispanic White, poor, low-income, and middle-income adults age 65 and over, those with basic activity limitations were significantly more likely than those with neither limitation to have had a pneumococcal vaccination.

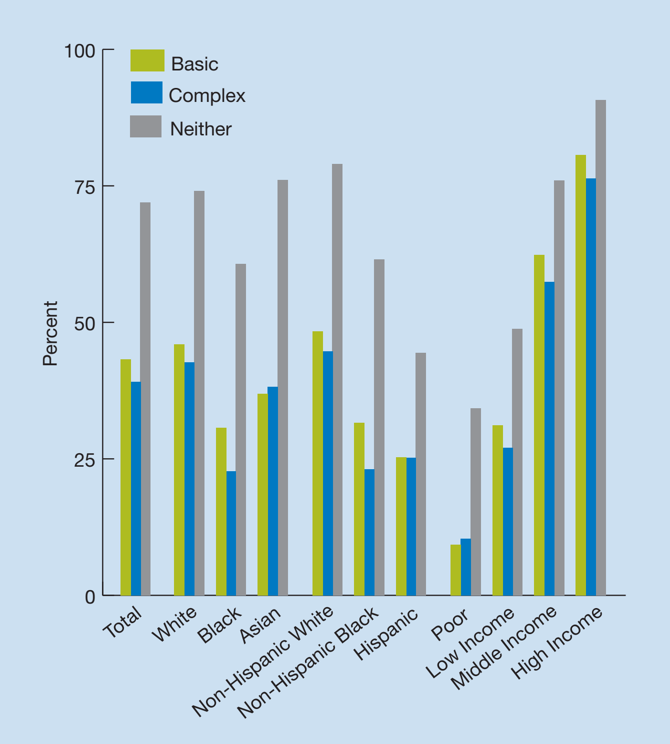
- For middle-income adults age 65 and over, those with complex activity limitations were significantly more likely than those with neither limitation to have had a pneumococcal vaccination (70.7% compared with 55.3%). Differences between those with complex activity limitations and those with neither limitation were not significant for any other income, race, or ethnic group among adults age 65 and over.
- For adults age 65 and over, Blacks were significantly less likely than Whites and non-Hispanic Blacks were significantly less likely than non-Hispanic Whites to have had a pneumococcal vaccination overall and within each of the three activity limitation groups (basic, complex, and neither). For adults age 65 and over, Asians were significantly less likely than Whites and Hispanics were significantly less likely than non-Hispanic Whites to have had a pneumococcal vaccination for those with basic activity limitations and those with neither limitation.
- Poor adults age 65 and over were significantly less likely than high-income individuals to have had a pneumococcal vaccination among those with basic activity limitations and those with neither limitation. Poor adults age 65 and over were significantly less likely than those with high income to have had a pneumococcal vaccination among those with neither limitation (37.1% vs. 60.3%).

Access to Care: Private Health Insurance for Adults Ages 18-64

Health insurance facilitates entry into the health care system and private health insurance may be associated with the amount and quality of health care received.[76] Private health insurance is mainly associated with individuals' employment and may be less available to people with disabilities because individuals with disabilities are less likely to be employed.[77]

Among adults, those with basic activity limitations were more likely than those with no limitations to use hospitals, emergency rooms, or clinics as their source of ongoing care.

Figure 4.49. Adults ages 18-64 with any private health insurance, by race, ethnicity, and family income, stratified by activity limitation, 2006



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 limitations.

Key: NH = non-Hispanic.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2006.

Reference population: Civilian noninstitutionalized population ages 18-64.

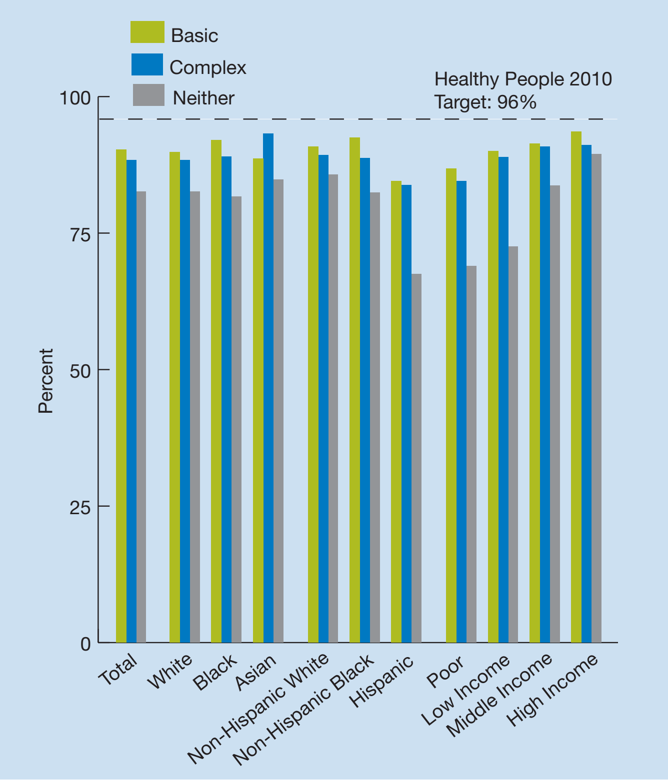
Note: Estimates are not age adjusted to the 2000 U.S. standard population.

- For all adults ages 18-64, those with complex activity limitations were significantly less likely than those with basic activity limitations to have any private health insurance (39.1% compared with 43.2%; Figure 4.49). Those with basic activity limitations were significantly less likely than those with neither limitation to have any private health insurance (43.2% compared with 72.0%). This same pattern (those with complex activity limitations being less likely than those with basic activity limitations to have private insurance and those with basic activity limitations being less likely than those with neither to have private insurance) holds for Blacks and non-Hispanic Blacks.
- For White, Asian, non-Hispanic White, Hispanic, poor, low-income, middle-income, and high-income adults ages 18-64, those with basic or complex activity limitations were significantly less likely than those with neither limitation to have any private health insurance.
- For adults ages 18-64, Blacks were significantly less likely than Whites, and non-Hispanic Blacks and Hispanics were significantly less likely than non-Hispanic Whites, to have any private health insurance within each of the three activity limitation groups (basic, complex, and neither).
- Poor, low-income, and middle-income adults ages 18-64 were significantly less likely than high-income individuals to have any private health insurance within each of the three activity limitation groups (basic, complex, and neither). Adults ages 18-64 with basic activity limitations and high income were more than eight times as likely as those who were poor to have any private health insurance (80.7% vs. 9.3%).

Access to Care: Specific Source of Ongoing Care

People with a usual source of care (a facility where one regularly receives ongoing care) experience improved health outcomes and reduced disparities (smaller differences between groups)[78] and costs.[79] In 2006, the overall percentage of adults who had a specified source of ongoing care was 86.1 (data not shown). The Healthy People 2010 target is to have 96% of adults with a source of ongoing care.

Figure 4.50. Adults with a specific source of ongoing care, by race, ethnicity, and family income, stratified by activity limitation, 2006



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 limitations.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2006.

Reference population: Civilian noninstitutionalized population age 18 and over.

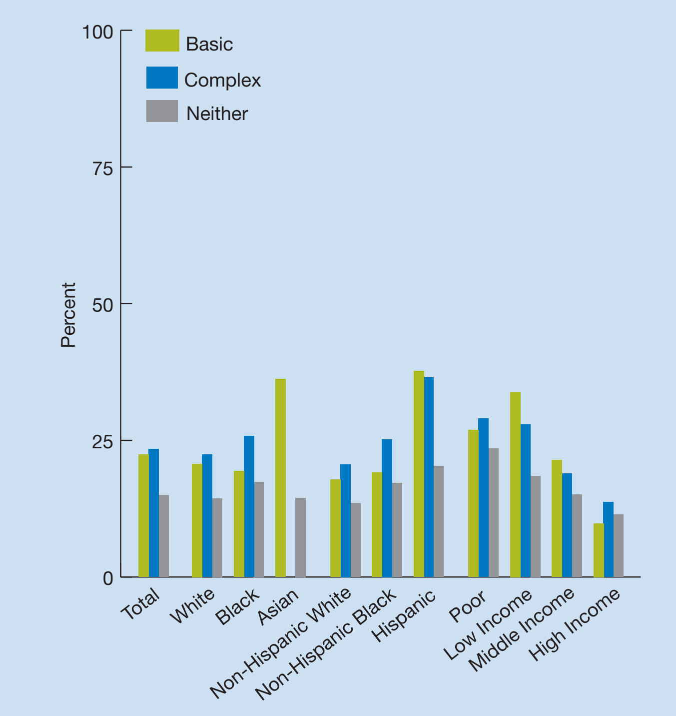
Note: Estimates are age adjusted to the 2000 U.S. standard population.

- For Hispanic, poor, or low-income adults age 18 and over, those with basic or complex activity limitations were significantly more likely than those with neither limitation to have a specific source of ongoing care (Figure 4.50). For Black or non-Hispanic Black adults age 18 and over, those with basic activity limitations were significantly more likely than those with neither limitation to have a specific source of ongoing care. Asian adults age 18 and over with complex activity limitations were significantly more likely than those with neither limitation to have a specific source of ongoing care (93.2% compared with 84.8%).
- For adults age 18 and over with neither limitation, Hispanics were significantly less likely than non-Hispanic Whites to have a specific source of ongoing care. Poor and low-income adults with neither limitation were significantly less likely than high-income adults to have a specific source of ongoing care. None of the other racial, ethnic, or income differences were statistically significant within any of the three activity limitation groups.

Access to Care: Use of Hospital, Emergency Room, or Clinic as a Source of Ongoing Care

In many cases, individuals have a source of ongoing care, but it is not a primary care physician or other health professional who can be seen regularly. Some people use hospitals, emergency rooms, or clinics as a source of ongoing care. Although these may meet certain patients' needs, they may not always provide the continuity of care associated with a regular primary care provider.

Figure 4.51. Adults who identified a hospital, emergency room, or clinic as a source of ongoing care, by race, ethnicity, and family income, stratified by activity limitation, 2006



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 limitations.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2006.

Reference population: Civilian noninstitutionalized population age 18 and over.

Note: Estimates are age adjusted to the 2000 U.S. standard population. Data for Asians with complex limitations did not meet criteria for statistical reliability.

- Among adults age 18 and over, those with basic activity limitations were more likely than those with neither limitation to use hospitals, emergency rooms, or clinics as their source of ongoing care (22.4% compared with 15.0%; Figure 4.51). This finding was also true for those with complex activity limitations (23.4% compared with 15.0%).
- Among White, Hispanic, and low-income adults age 18 and over, those with basic or complex activity limitations were significantly more likely than those with neither limitation to use hospitals, emergency rooms, or clinics as a source of ongoing care. Among Black, non-Hispanic White, non-Hispanic Black, and poor adults age 18 and over, those with complex activity limitations were significantly more likely than those with neither limitation to use hospitals, emergency rooms, or clinics as a source of ongoing care. Asian adults age 18 and over with basic activity limitations were significantly more likely than those with neither limitation to use hospitals, emergency rooms, or clinics as a source of ongoing care (36.2% compared with 14.5%).

Children With Special Health Care Needs

Addressing questions on access to and quality of care for children with chronic conditions is difficult due to the relatively low prevalence of most conditions in children.[80,81,82] A standard definition of CSHCN was developed in 1995.[80,83] This definition was subsequently used to develop the CSHCN Screener Questionnaire[80] and was included in the 2001 and 2005-2006 National Survey of Children With Special Healthcare Needs (NSCSHCN),[84,85,86] among other surveys.

According to MEPS, in 2004, approximately 13.8 million children, or 20% of the child population ages 0-17, were identified as having a special health care need (i.e., a specific chronic condition with a functional limitation or other consequence). Among the most highly prevalent chronic conditions of childhood in 2005 were asthma (13% of children under age 18), upper respiratory allergies (12% of children under age 18), learning disabilities (7% of children ages 3-17), and attention-deficit/hyperactivity disorder (7% of children ages 3-17).[87] Other conditions that may affect CSHCN include depression, spina bifida, hemophilia, HIV infection, cystic fibrosis, and metabolic disorders.[88]

Having higher health care needs makes CSHCN susceptible to cost, quality, and access weaknesses in the health care system.[89] Because they need more medical care, CSHCN have higher medical expenses, on average, than other children.[80,84,90] For more than one in five CSHCN, costs of care caused financial problems for their families.[85]

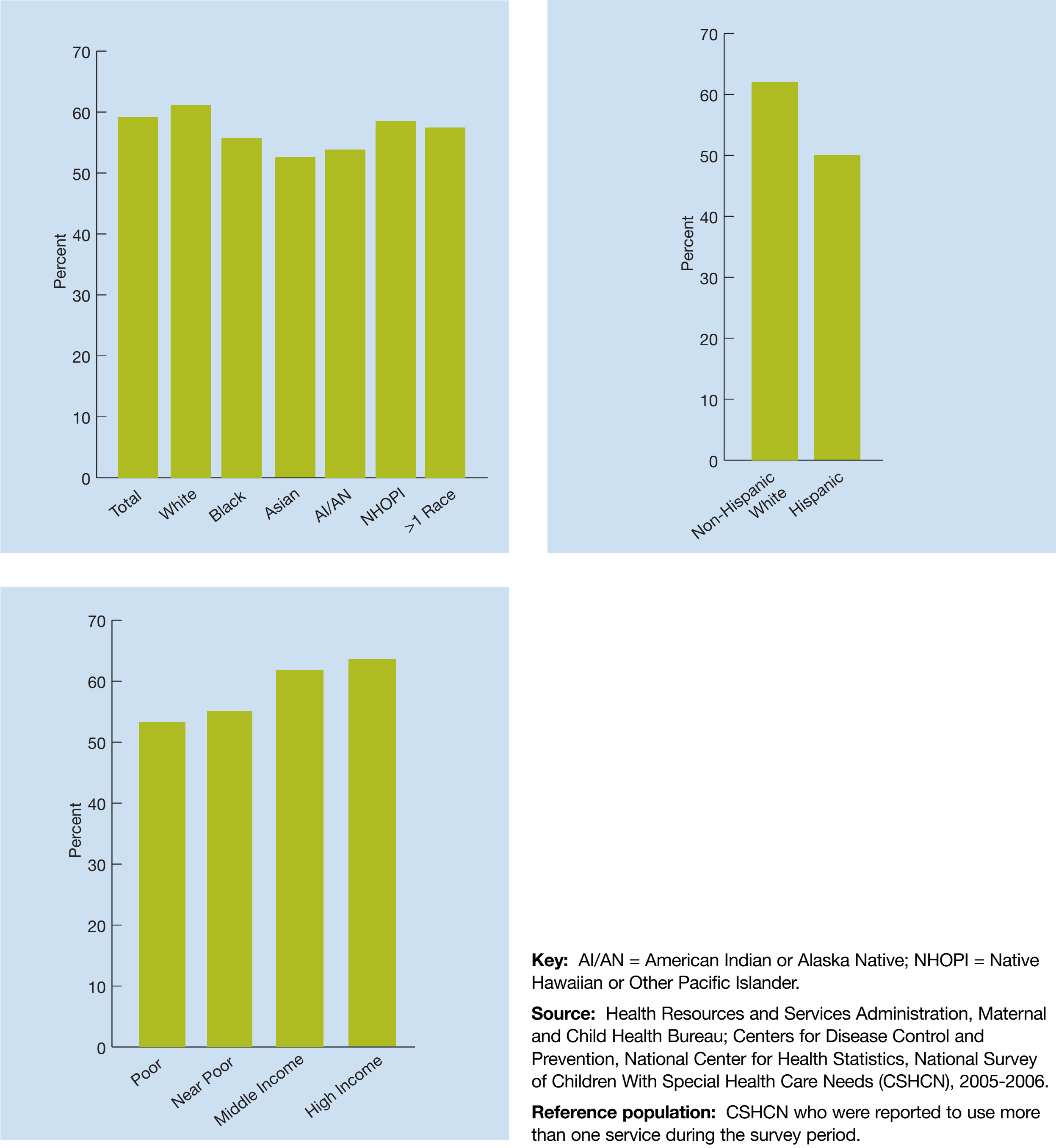
In addition to financial burdens, families of CSHCN spend considerable time caring for them. An estimated 9.7% of CSHCN had families who spent 11 or more hours per week providing or coordinating care in 2005-2006.85 Studies have documented that children with chronic conditions in poor families and racial and ethnic minority groups may experience lower quality care.[91,92] Children with chronic conditions are reported by their parents to be less likely than other children to receive the full range of needed health services.[93] Among CSHCN, minorities are more likely than White children to be without health insurance coverage or a usual source of care.[94]

Two quality measures (care coordination and family-centered care) and two access measures (health insurance status and adequacy of health insurance) of relevance to CSHCN are tracked in this section of the NHDR.

Focus on Care Coordination

CSHCN often need access to multiple health professionals. The children's families may need assistance coordinating care across providers and settings. For families who use more than one health or related service and wanted or needed help with care coordination, effective care coordination requires receiving "as much help as a family wants with arranging or coordinating care."

Figure 4.52. Children with special health care needs who received wanted or needed care coordination, by race (top left), ethnicity (top right), and family income (bottom left), 2005-2006



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

Source: Health Resources and Services Administration, Maternal and Child Health Bureau; Centers for Disease Control and Prevention, National Center for Health Statistics, National Survey of Children With Special Health Care Needs (CSHCN), 2005-2006.

Reference population: CSHCN who were reported to use more than one service during the survey period.

- Overall, 59.2% of CSHCN were reported to have received needed or wanted care coordination (Figure 4.52).

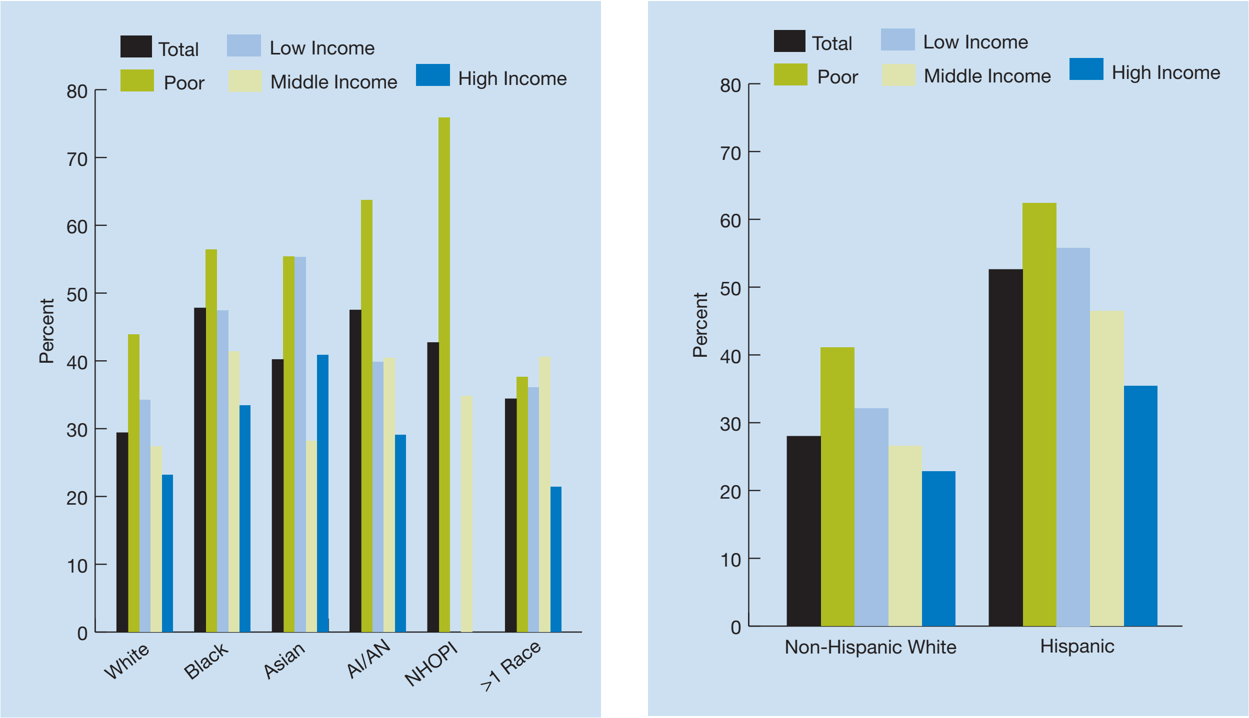
- AI/AN and Asian CSHCN were reported to have the lowest levels of care coordination among racial groups (53.9% and 52.5%, respectively, compared with White CSHCN, 61.1%).
- Hispanic CSHCN received less care coordination than non-Hispanic White CSHCN (49.9% compared with 62.0%).
- CSHCN in high- and middle-income families had higher rates of care coordination (63.5% and 61.9%, respectively) than CSHCN in poor and near-poor families (53.3% and 55.1%, respectively).

Focus on Family-Centered Care

Family-centered care requires providers who:

- Spend adequate time with the child.
- Listen carefully to the parent.
- Show sensitivity to family values and customs.
- Communicate specific needed health information.
- Help the family feel like a partner in the child's care.
- Help the family with language interpretation when needed.

Figure 4.53. Children with special health care needs without family-centered care, by race (top) and ethnicity (bottom), stratified by income, 2005-2006



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

Source: Health Resources and Services Administration, Maternal and Child Health Bureau; Centers for Disease Control and Prevention, National Center for Health Statistics, National Survey of Children With Special Health Care Needs, 2005-2006.

Reference population: Civilian noninstitutionalized population ages 0-17 with special health care needs.

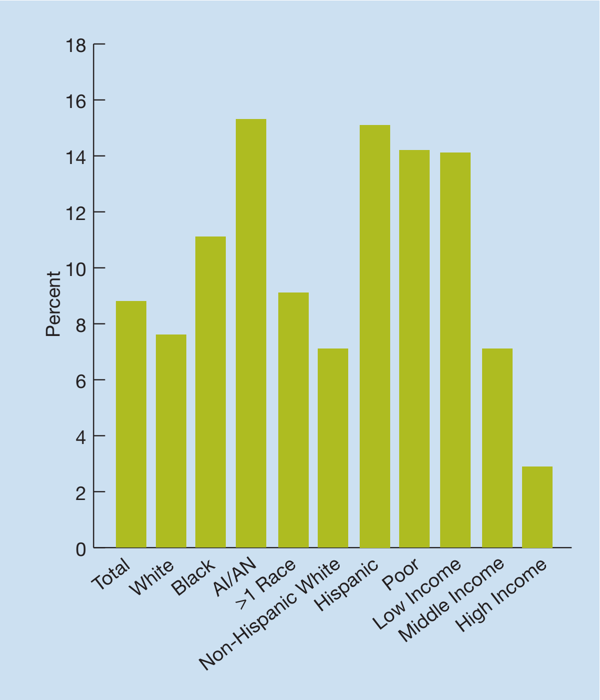
Note: Data for low-income and high-income Native Hawaiians and Pacific Islanders did not meet criteria for statistical reliability.

- Overall, 34.5% of CSHCN were without family-centered care in 2005-2006 (data not shown).
- The contribution of income to differences in family-centered care by race and ethnicity was significant. For example, 43.9% of poor White CHSCN lacked family-centered care, compared with 29.4% of White CSHCN overall (Figure 4.53). More than half of poor Black CSHCN (56.4%) lacked family-centered care, compared with 47.8% of Black CSHCN overall. More than 60% of poor Hispanic CSHCN (62.4%) lacked family-centered care, compared with 35.4% of high-income Hispanic CSHCN.
- Significant differences between racial and ethnic groups remained overall. More than half (52.6%) of Hispanic CSHCN lacked family-centered care, compared with 28.0% of non-Hispanic White CSHCN, not accounting for variations in income.

Access to Care

Access to care for CSHCN is especially critical since they may require more frequent and costly visits than other children. Having health insurance is an important facilitator to accessing needed medical care.

Figure 4.54. Children with special health care needs who were without health insurance at some point in the last 12 months, by race, ethnicity, income, and parental education, 2005-2006



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

Source: Health Services and Research Administration; Maternal and Child Health Bureau; Centers for Disease Control and Prevention, National Center for Health Statistics, National Survey of Children With Special Health Care Needs, 2005-2006.

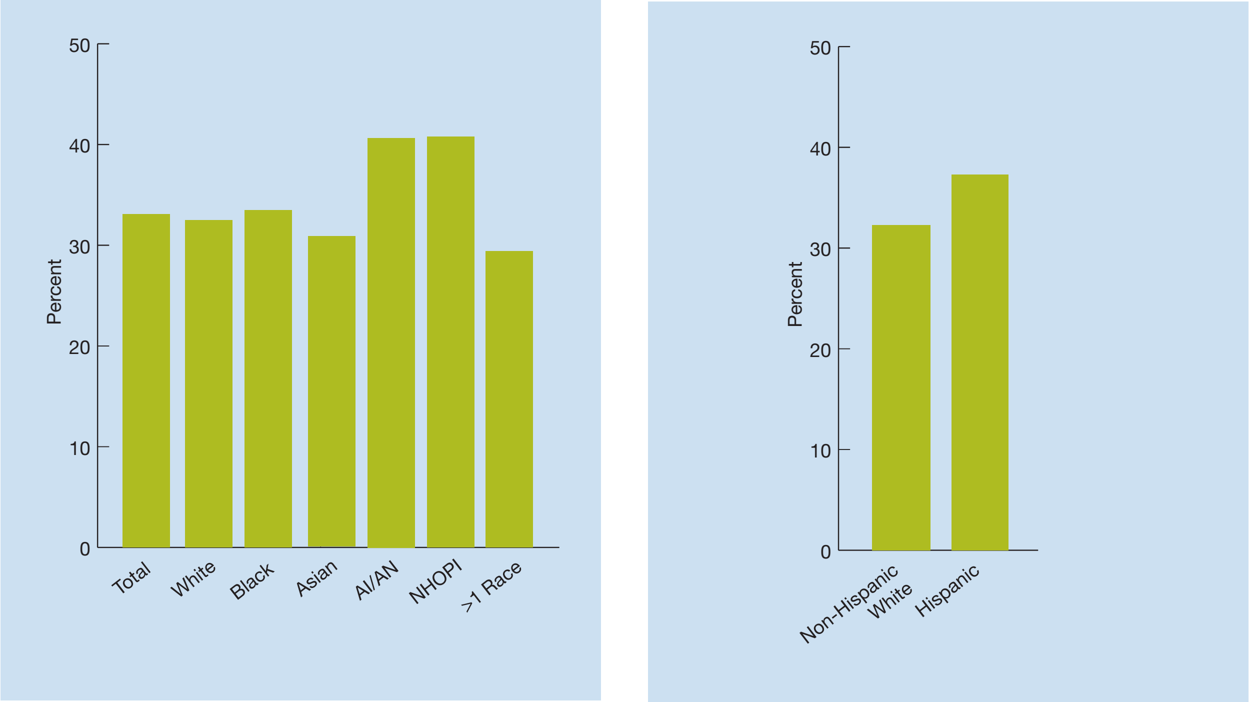
Reference population: Civilian noninstitutionalized population ages 0-17 with special health care needs.

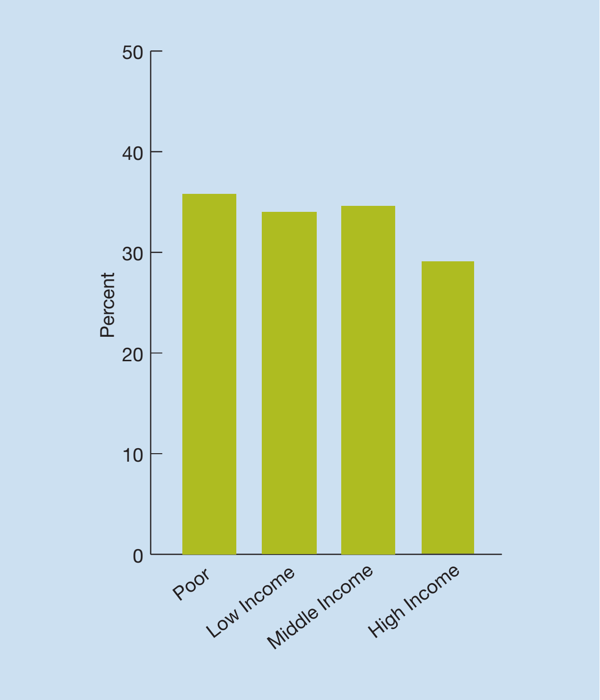
Note: Data for Asians and Native Hawaiian and Pacific Islanders did not meet criteria for statistical reliability.

- Overall, 8.8% of CSHCN were without health insurance at some point during 2005-2006.
- White CSHCN were less likely to be without health insurance (7.6%). Black (11.1%), AI/AN (15.3%), and multiple-race (9.1%) CSHCN were more likely to be without insurance at some point during 2005-2006. Among Hispanic CSHCN, 15.1% were without insurance at some point during 2005-2006, compared with 7.1% of non-Hispanic White CSHCN.
- Poor and low-income CSHCN were more likely to be without health insurance (14.2% and 14.1%, respectively) than middle- and high-income CSHNC (7.1% and 2.9%, respectively).
- Compared with data from 2001, in 2005-2006, the percentage of CSHCN without health insurance at some point during the past year declined for White CSHCN (10.4% in 2001 and 7.6% in 2005-2006) and CSHCN of more than one race (14.3% in 2001 and 9.1% in 2005-2006) but did not change between 2001 and 2005-2006 for Black CSHCN (11.1% at both time points) (data not shown). The 2001 data are insufficient to make comparisons for other racial groups.

- The percentage of Hispanic CSHCN without health insurance declined between 2001 and 2005-2006 (19.4% and 15.1%, respectively; data not shown, available at http://www.ahrq.gov/qual/nhdr04/fullreport/Appd.htm).
- Similarly, the percentage of poor and low-income CSHCN without health insurance declined between 2001 and 2005-2006 (21.8% and 20.3%, respectively, in 2001, and 14.2% and 14.1% in 2005-2006), as did the percentages for middle- and high-income CSHCN (2001 data not shown).

Figure 4.55. Currently insured children with special health care needs whose insurance is not adequate, by race (left), ethnicity (right), and income (next page top), 2005-2006





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

Source: Health Resources and Services Administration, Maternal and Child Health Bureau; Centers for Disease Control and Prevention, National Center for Health Statistics, National Survey of Children With Special Health Care Needs (CSHCN), 2005-2006.

Reference population: Civilian noninstitutionalized population ages 0-17 with special health care needs who have health insurance.

Note: Among CSHCN with insurance, adequacy of health insurance assesses the degree to which benefits cover the child's needs, uncovered costs are reasonable, and the child is able to see the providers he or she needs.

- Overall, the percentage of CSHCN with less than adequate insurance was 33.1% in 2005-2006 (Figure 4.55).
- In 2005-2006, the percentage of CSHCN with less than adequate insurance was higher for AI/ANs and NHOPIs (40.7% and 40.8%, respectively) than for Whites (32.5%).
- Hispanic CSHCN were more likely to have less than adequate insurance than non-Hispanic White CSHCN (37.3% compared with 32.3%). Poor, low-income, and middle-income CSHCN were more likely to have less than adequate insurance (35.8%, 34.0%, and 34.6%, respectively) than high-income CSHCN (29.0%).
- From 2001 to 2005-2006, the overall percentage of CSHCN with less than adequate insurance remained the same (33.5% in 2001, 33.1% in 2005-2006).[xvii] However, the percentage for Hispanic CSHCN decreased (from 45.9% to 37.3%; data not shown). The percentage for poor CSHCN also decreased (from 43.0% to 35.8%; data not shown).

[xvii] The 2001 data not shown are available at http://www.ahrq.gov/qual/nhdr04/fullreport/Appd.htm.

References

1. National Center for Health Statistics. Health, United States, 2006. With chartbook on trends in the health of Americans. Hyattsville, MD: Centers for Disease Control and Prevention; 2006. Available at: http://www.cdc.gov/nchs/data/hus/hus06.pdf. Accessed April 24, 2007.

2. Population Estimates Program. Table T4-2007. Hispanic or Latino by race. Washington, DC: U.S. Census Bureau. Available at: http://www.factfinder.census.gov/servlet/DTTable?_bm=y&-geo_id=01000US&-ds_name=PEP_2007_EST&-_lang=en&-redoLog=true&-mt_name=PEP_2007_EST_G2007_T004_2007&-format=&-CONTEXT=dt. Accessed August 27, 2008.

3. U.S. Census Bureau. State and County QuickFacts; last revised March 23, 2007. Available at: http://quickfacts.census.gov/qfd/states/00000.html. Accessed April 24, 2007.

4. Smedley BD, Stith AY, Nelson AR. Unequal treatment: confronting racial and ethnic disparities in health care. Institute of Medicine, Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care. Washington, DC: National Academies Press; 2003.

5. Lillie-Blanton M, Rushing O, Ruiz S. Key facts: race, ethnicity, and medical care. Menlo Park, CA: Kaiser Family Foundation; 2003. Available at: http://www.kff.org/minorityhealth/upload/Key-Facts-Race-Ethnicity-Medical-Care-Chartbook.pdf. Accessed November 14, 2007.

6. Collins KS, Hughes DL, Doty MM, et al. Diverse communities, common concerns: assessing health care quality for minority Americans. New York, NY: Commonwealth Fund; 2002.

7. Office of Management and Budget. Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity. Federal Register 1997 Oct 30;62(210):58782-58790. Available at: http://www.whitehouse.gov/omb/fedreg/ombdir15.html. Accessed October 30, 2007.

8. Balabis J, Pobutsky K, Kromer Baker C, et al. The burden of cardiovascular disease in Hawaii 2007. Honolulu: Hawaii State Department of Health; 2007.

9. Indian Health Service. Trends in Indian health, 2000-2001 edition. Washington, DC: Government Printing Office; May 2003. p.33. Available at: http://www.ihs.gov/NonMedicalPrograms/IHS_Stats/IHS_HQ_Publications.asp. Accessed September 18, 2007.

10. Indian Health Service. Regional differences in Indian health, 2000-2001 edition. Washington, DC: Government Printing Office; February 2004. p. 24. Available at: http://permanent.access.gpo.gov/lps5091/2000-2001/2000-2001.pdf.

11. Census 2000 summary file 2 (SF2). American Indian and Alaska Native population by place of residence: 2000. Washington, DC: U.S. Census Bureau; 2002. Accessed August 31, 2007.

12. U.S. Commission on Civil Rights. Broken promises: evaluating the Native American healthcare system. Washington, DC: U.S. Commission on Civil Rights; September 2004. p. 70-71.

13. Larsen LJ. The foreign-born population in the United States: 2003. Population characteristics. Current Population Reports, P20-551. Washington, DC: U.S. Census Bureau; August 2004. Available at: http://www.census.gov/prod/2004pubs/p20-551.pdf. Accessed May 3, 2007.

14. Malone N, Baluja KF, Costanzo JM, et al. The foreign-born population in the United States: 2000. Census 2000 Brief. C2-KBR-34. Washington, DC: U.S. Census Bureau; December 2003. Available at: http://www.census.gov/prod/2003pubs/c2kbr-34.pdf. Accessed August 28, 2008.

15. Reported tuberculosis in the United States, 2006. Atlanta: Centers for Disease Control and Prevention; September 2007. Available at: http://www.cdc.gov/tb/surv/surv2006/pdf/FullReport.pdf. Accessed October 30, 2007.

16. Office for Civil Rights, U.S. Department of Health and Human Services. Guidance to Federal financial assistance recipients regarding Title VI prohibition against national origin discrimination affecting limited English proficient persons. 68 Fed. Reg. 47311-02 (August 8, 2003). Available at: http://www.hhs.gov/ocr/civilrights/resources/specialtopics/lep/policyguidancedocument.html.

17. Shin HB, Brun R. Language use and English-speaking ability: 2000. Census 2000 Brief. C2KBR-29. Washington, DC: U.S. Census Bureau; 2003. Available at: http://www.census.gov/prod/2003pubs/c2kbr-29.pdf. Accessed May 3, 2007.

18. Morales LS, Elliott M, Weech-Maldonado R, et al. The impact of interpreters on parents' experiences with ambulatory care for their children. Med Care Res Rev 2006 February;63(1):110-28.

19. Housing and Household Economic Statistics Division. Poverty thresholds 2006. Washington, DC: U.S. Census Bureau; 2008. Available at: http://www.census.gov/hhes/www/poverty/threshld/thresh06.html. Accessed August 21, 2008.

20. DeNavas-Walt C, Proctor BD, Smith J. Income, poverty, and health insurance coverage in the United States: 2006. U.S. Census Bureau Current Population Reports, P60-233. Washington, DC: Government Printing Office; 2006. Available at: http://www.census.gov/prod/2007pubs/p60-233.pdf. Accessed September 15, 2007.

21. Adler N, Newman K. Socioeconomic disparities in health: pathways and policies. Health Aff 2002 Mar-Apr;21(2):60-76.

22. Brown AF, Gross AG, Gutierrez PR, et al. Income-related differences in the use of evidence-based therapies in older persons with diabetes mellitus in for-profit managed care. J Am Geriatr Soc 2003 May; 51(5):665-70.

23. Institute of Medicine, Committee on the Consequences of Uninsurance. A shared destiny: community effects of uninsurance. Washington, DC: National Academies Press; 2003.

24. Hadley J. Sicker and poorer: the consequences of being uninsured. Paper prepared for the Kaiser Commission on Medicaid and the Uninsured. Washington, DC: The Urban Institute; May 2002 (updated February 2003).

25. Self-assessed health status and selected behavioral risk factors among persons with and without health-care coverage—United States, 1994-1995. MMWR Morb Mortal Wkly Rep 1998 Mar 13;47(9):176-80.

26. American Community Survey, Table S0101. Washington, DC: U.S. Census Bureau; 2006. Available at: http://factfinder.census.gov/servlet/STTable?_bm=y&-geo_id=01000US&-qr_name=ACS_2006_EST_G00_S0101&-ds_name=ACS_2006_EST_G00_&-redoLog=false&-CONTEXT=st. Accessed August 22, 2008.

27. Day JC. Population projections of the United States by age, sex, race, and Hispanic origin: 1995 to 2050. U.S. Bureau of the Census Current Population Reports, P25-1130. Washington, DC: Government Printing Office; 1996. Available at: http://www.census.gov/prod/1/pop/p25-1130/p251130.pdf. Accessed August 22, 2008.

28. Spraggins RE. Women and men in the United States: March 2002. U.S. Census Bureau Current Population Reports, P20-544. Available at: http://www.census.gov/prod/2003pubs/p20-544.pdf. Accessed May 3, 2007.

29. Annual social and economic supplement, Table POV01: Age and sex of all people, family members and unrelated individuals iterated by income-to-poverty ratio and race: 2006. Below 100% of poverty—all races. Current Population Survey. Washington, DC: U.S. Census Bureau; 2007. Available at: http://pubdb3.census.gov/macro/032007/pov/new01_100_01.htm. Accessed August 22, 2008.

30. Hoyert DL, Kung HC, Smith BL. Deaths: preliminary data for 2003. Natl Vital Stat Rep 2005 Feb 28;53(15):1-48. Available at: http://www.cdc.gov/nchs/pressroom/05facts/lifeexpectancy.htm. Accessed October 30, 2007.

31. Miniño AM, Heron M, Murphy SL, et al. Deaths: final data for 2004. NCHS Health E-Stats. Hyattsville, MD: National Center for Health Statistics; November 24, 2006. Available at: http://www.cdc.gov/nchs/products/pubs/pubd/hestats/finaldeaths04/finaldeaths04.htm. Accessed May 3, 2007.

32. Pleis JR, Lethbridge-Çejku M. Summary health statistics for U.S. adults: National Health Interview Survey, 2005. Vital Health Stat 10 2006;(232):1-153.

33. National Center for Health Statistics. Health, United States, 2006. With chartbook on trends in the health of Americans with special feature on pain. Table 61. Available at: http://www.cdc.gov/nchs/data/hus/hus06.pdf. Accessed May 3, 2007.

34. Office of Research on Women's Health. Women of color health data book, 3rd ed. Bethesda, MD: National Institutes of Health; 2006. Available at: http://orwh.od.nih.gov/pubs/WomenofColor2006.pdf. Accessed June 19, 2006.

35. Martin JA, Hamilton BE, Sutton PE, et al. Births: final data for 2005. Natl Vital Stat Rep 2007;56(6):1-103. Available at: http://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_06.pdf.

36. Sackett K, Pope RK, Erdley WS. Demonstrating a positive return on investment for a prenatal program at a managed care organization. An economic analysis. J Perinat Neonatal Nurs 2004 Apr-Jun;18(2):117-27.

37. Ogden CL, Carroll MD, McDowell MA, et al. Obesity among adults in the United States—no change since 2003-2004. NCHS Data Brief No 1. Hyattsville, MD: National Center for Health Statistics; 2007.

38. Available at: Centers for Disease Control and Prevention. Overweight and Obesity. http://www.cdc.gov/nccdphp/dnpa/obesity/. Accessed May 8, 2006.

39. Racial/ethnic and socioeconomic disparities in multiple risk factors for heart disease and stroke—United States, 2003. MMWR Morb Mortal Wkly Rep 2005 Feb 11;54(5):113-7.

40. Wang F, Beydoun MA. The obesity epidemic in the United States-gender, age, socioeconomic, racial/ethnic, and geographic characteristics: a systematic review and meta-regression analysis. Epidemiol Rev 2007;29:6-28.

41. Available at: National Heart, Lung and Blood Institute. The Heart Truth. 2006. http://www.nhlbi.nih.gov/health/hearttruth/press/infograph_dressgraph.pdf. Accessed August 22, 2007.

42. Blomkalns AL, Chen AY, Hochman JS, et al. CRUSADE Investigators. Gender disparities in the diagnosis and treatment of non-ST-segment elevation acute coronary syndromes: large-scale observations from the CRUSADE (Can Rapid Risk Stratification of Unstable Angina Patients Suppress Adverse Outcomes With Early Implementation of the American College of Cardiology/American Heart Association Guidelines) National Quality Improvement Initiative. J Am Coll Cardiol 2005;45:832-7.

43. Phillips RL, Proser M, Green LA, et al. The importance of having health insurance and a usual source of care. One-Pager Number 29. Washington, DC: The Robert Graham Center: Policy Studies in Family Practice and Primary Care; September 2004. Available at: http://www.graham-center.org/online/graham/home/publications/onepagers/2004/op29-importance-insurance.html. Accessed October 30, 2007.

44. Miller MR, Zhan C. Pediatric patient safety in hospitals: a national picture in 2000. Pediatrics 2004;113:1741-6.

45. Silen W, Cope Z. Cope's early diagnosis of the acute abdomen. New York: Oxford University Press; 1987.

46. Nelson DS, Bateman B, Bolte RG. Appendiceal perforation in children diagnosed in a pediatric emergency department. Pediatr Emerg Care 2000;16:233-7.

47. Bickell NA, Siu AL. Why do delays in treatment occur? Lessons learned from ruptured appendicitis. Health Serv Res 2001;36:1-5.

48. Jablonski KA, Guagliardo MF. Pediatric appendicitis rupture rate: a national indicator of disparities in healthcare access. Popul Health Metr 2005;3:4. Available at: http://www.ncbi.nlm.nih.gov/pubmed/15871740?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum.

49. Institute of Medicine, Committee on the Consequences of Uninsurance. Insuring America's health: principles and recommendations. Washington, DC: National Academies Press; 2004.

50. Administration on Aging. A profile of older Americans: 2007. Washington, DC: U.S. Department of Health and Human Services; 2007. Available at: http://www.agingcarefl.org/aging/AOA-2007profile.pdf. Accessed August 22, 2008.

51. Administration on Aging. Older population by age: 1900 to 2050. Washington, DC: U.S. Department of Health and Human Services. Available at: http://www.aoa.gov/prof/statistics/online_stat_data/agepop2050.aspx. Accessed July 31, 2007.

52. Data table for Figure 11.3. Percentage of persons of all ages who had excellent or very good health, by age group and sex: United States, January-September 2006. In: Early release of selected estimates based on data from the January-September 2006 National Health Interview Survey. Hyattsville, MD: National Center for Health Statistics; March 2007. Available at: http://www.cdc.gov/nchs/data/nhis/earlyrelease/200703_11.pdf. Accessed May 30, 2007.

53. Administration on Aging. A profile of Older Americans: 2002. Washington, DC: U.S. Department of Health and Human Services; 2002. Available at: http://www.aoa.gov/PROF/Statistics/profile/2002/profiles2002.aspx. Accessed September 3, 2008.

54. U.S. Preventive Services Task Force. Guide to clinical preventive services, 2nd ed. Report of the U.S. Preventive Services Task Force. Section One: Screening 33. Screening for visual impairment. Washington, DC: U.S. Department of Health and Human Services; 1996. Available at: http://www.ahrq.gov/clinic/uspstf/uspsvisi.htm.

55. Health communication. In: U.S. Department of Health and Human Services. Healthy People 2010, 2nd ed. With Understanding and improving health and objectives for improving health. 2 vols. Washington, DC: Government Printing Office, November 2000. Available at: http://www.healthypeople.gov/Document/HTML/Volume1/11HealthCom.htm. Accessed May 18, 2007.

56. Institute of Education Sciences, National Center for Education Statistics. The health literacy of America's adults. Results from the 2003 National Assessment of Adult Literacy. Washington, DC: U.S. Department of Education; 2006. Publication No. NCES 2006483. Available at: http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2006483. Accessed August 14, 2007.

57. Baker DW, Wolf MS, Feinglass J, et al. Health literacy and mortality among elderly persons. Arch Intern Med 2007 Jul 23;167(14):1503-9.

58. Agency for Healthcare Research and Quality. 2007 National healthcare disparities report. Rockville, MD: U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality; February 2008. AHRQ Publication No. 08-0041. Available at: http://www.ahrq.gov/qual/nhdr07/nhdr07.pdf.

59. Institute of Medicine, Committee on the Future of Rural Health Care. Quality through collaboration: the future of rural health. Washington, DC: National Academies Press; 2005.

60. Ziller EC, Coburn AF, Loux SL, et al. Health insurance coverage in rural America. Washington, DC: Kaiser Commission on Medicaid and the Uninsured; 2003. Available at: http://www.kff.org/uninsured/4093.cfm. Accessed October 30, 2007.

61. Larson S, Fleishman JA. Rural-urban differences in usual source of care and ambulatory service use: analyses of national data using Urban Influence Codes. Med Care 2003 Jul;41(7 Suppl):III65-III74.

62. van Dis J. Where we live: health care in rural vs. urban America. JAMA 2002 Jan 2;287(1):108.

63. Available at: American Hospital Association. Fast facts on U.S. hospitals [data from the 2005 annual survey]. http://www.aha.org/aha/resource-center/Statistics-and-Studies/fast-facts.html. Updated October 20, 2006. Accessed May 30, 2007.

64. Improving health care for rural populations. Research in action fact sheet. Rockville, MD: Agency for Health Care Policy and Research (now Agency for Healthcare Research and Quality); 1996. AHCPR Publication No. 96-P040. Available at: http://www.ahrq.gov/research/rural.htm. Accessed October 30, 2007.

65. Frontier Education Center. Geography of frontier America: the view at the turn of the century. Santa Fe, NM: Frontier Education Center; 2000.

66. Revised definitions of metropolitan statistical areas, new definitions of micropolitan statistical areas and combined statistical areas, and guidance on uses of the statistical definitions of these areas. Washington, DC: Office of Management and Budget; 2003. OMB Bulletin No. 03-04. Available at: http://www.whitehouse.gov/omb/bulletins/b03-04.html. Accessed October 30, 2007.

67. Hamilton BE, Martin JA, Ventura SJ. Births: preliminary data for 2005. NCHS Health E-Stats. Hyattsville, MD: National Center for Health Statistics; November 21, 2006. Available at: http://www.cdc.gov/nchs/products/pubs/pubd/hestats/prelimbirths05/prelimbirths05.htm. Accessed May 3, 2007.

68. World Health Organization. International Classification of Functioning, Disability and Health (ICF). Geneva, Switzerland: World Health Organization; 2001.

69. Office of the Surgeon General. The Surgeon General's call to action to improve the health and wellness of people with disabilities. Washington, DC: U.S. Department of Health and Human Services; 2005.

70. LaPlante MP. The demographics of disability. Millbank Q 1991;69 Suppl 1-2:55-77.

71. Institute of Medicine. The future of disability in America. Washington, DC: National Academies Press; 2007. p. 34.

72. Davis MM. Race-based immunization recommendations and the potential to reduce health disparities. JAMA 2004 May 12;291(18):2253-55.

73. Flannery B, Schrag S, Bennett NM, et al. Active bacterial core surveillance/emerging infections program network. Impact of childhood vaccination on racial disparities in invasive Streptococcus pneumoniae infections. JAMA 2004 May 12;291(18):2197-2203.

74. Prevention of pneumococcal disease: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Morb Mortal Wkly Rep 1997;46(RR-08);1-24. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/00047135.htm.

75. Recommended adult immunization schedule—United States, October 2007-September 2008. MMWR Morb Mortal Wkly Rep 2007;56(41):Q1-Q4. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5641a7.htm.

76. Coughlin, TA, Long SK, Shen YC. Assessing access to care under Medicaid: evidence for the nation and thirteen States. Health Affairs 2005;24(4):1073-83.

77. Chevarley FM, Thierry JM, Gill CJ, et al. Health, preventive health care, and health care access among women with disabilities in the 1994-1995 National Health Interview Survey. Supplement on disability. Women's Health Issues 2006 Nov-Dec;16(6):297-312.

78. Starfield B, Shi L. The medical home, assess to care and insurance. Pediatrics 2004;113(5 Suppl):1493-8.

79. De Maeseneer JM, De Prins L, Gosset C, et al. Provider continuity in family medicine: does it make a difference for total health care costs? Ann Fam Med 2003;1:144-8.

80. Bethell C, Read D, Stein RE, et al. Identifying children with special health care needs: development and evaluation of a short screening instrument. Ambul Pediatr 2002 Jan-Feb;2(1):38-48.

81. Perrin JM. Health services research for children with disabilities. Milbank Q 2002;80(2):303-24.

82. Mangione-Smith R, McGlynn EA. Assessing the quality of healthcare provided to children. Health Serv Res 1998 Oct;33(4 Pt 2):1059-90.

83. McPherson M, Arango P, Fox H, et al. A new definition of children with special health care needs. Pediatrics 1998 Jul;102(1 Pt 1):137-40.

84. Health Resources and Services Administration, Maternal and Child Health Bureau. The National Survey of Children With Special Health Care Needs chartbook 2001. Rockville, MD: U.S. Department of Health and Human Services; 2004.

85. Health Resources and Services Administration, Maternal and Child Health Bureau. The National Survey of Children With Special Health Care Needs chartbook 2005-2006. Rockville, MD: U.S. Department of Health and Human Services; 2008; Available at: http://www.cdc.gov/nchs/about/major/slaits/nscshcn_05_06.htm.

86. Van Dyck PC, McPherson M, Strickland BB, et al. The National Survey of Children With Special Health Care Needs. Ambul Pediatr 2002 Jan-Feb;2(1):29-37.

87. Bloom B, Dey AN, Freeman G. Summary health statistics for U.S. children: National Health Interview Survey, 2005. Vital Health Stat 10 2006 Dec;(231):1-84.

88. Perrin JM, Bloom SR, Gortmaker SL. The increase of childhood chronic conditions in the United States. JAMA 2007 June 297(24):2755-59.

89. Simpson L, Dougherty D. Accessing quality care for children with special health care needs: the future of policy and research. In: Sobo EJ, Kurtin PS, eds. Optimizing care for young children with special health care needs: knowledge and strategies for navigating the system. Baltimore: Paul H Brookes Publishing Co.; 2006. p. 235-75.

90. Neff JM, Sharp VL, Muldoon J, et al. Profile of medical charges for children by health status group and severity level in a Washington State health plan. Health Serv Res 2004 Feb;39(1):73-89.

91. Christakis DA, Feudtner C, Pihoker C, et al. Continuity and quality of care for children with diabetes who are covered by Medicaid. Ambul Pediatr 2001 Mar-Apr;1(2):22-103.

92. Lozano P, Grothaus L, Finkelstein J, et al. Variability in asthma care and services for low-income populations among practice sites in managed Medicaid systems. Health Serv Res 2003;38(6 Pt 1):1563-78.

93. Silver EJ, Stein RE. Access to care, unmet health needs and poverty status among children with and without chronic conditions. Ambul Pediatr 2001 Nov-Dec;1(6):314-20.

94. Newacheck PW, Hung YY, Wright KK. Racial and ethnic disparities in access to care for children with special health care needs. Ambul Pediatr 2002 Jul-Aug;2(4):247-54.

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						
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	✔	✔			✔
Hospital admissions for lower extremity amputations per 1,000 population age 18 and over with diabetes	NHDS	✔	✔			✔
Dialysis patients registered on a waiting list for transplantation	USRDS	✔	✔	✔	✔	
Hemodialysis patients with adequate dialysis	ESRD CPMP	✔	✔	✔	✔	
Adult smokers who received advice to quit smoking	MEPS	✔	✔			✔
Adults with obesity who received advice to exercise more	MEPS	✔	✔			✔
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	✔	✔	✔	✔	
Pregnant women who received prenatal care in first trimester	NVSS-N	✔	✔	✔	✔	
Infant deaths per 1,000 live births, birth weight <1,500 g	NVSS-I	✔	✔	✔	✔	
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	✔	✔			✔
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 and who received such treatment at a specialty facility	NSDUH	✔	✔			✔
People treated for substance abuse who completed treatment course	TEDS	✔	✔			
Adults age 65 and over who ever received pneumococcal vaccination	NHIS	✔	✔	✔		✔
Hospital care for pneumonia patients	QIO	✔	✔	✔	✔	
Visits with antibiotics prescribed for a diagnosis of common cold per 10,000 population	NAMCS-NHAMCS					
Patients with tuberculosis who completed a curative course of treatment within 1 year of initiation of treatment	CDC TB Surveillance	✔	✔	✔	✔	
Long-stay nursing home residents with physical restraints	MDS	✔	✔	✔	✔	
High-risk, long-stay nursing home residents with pressure sores	MDS	✔	✔	✔	✔	
Short-stay nursing home residents with pressure sores	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.

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
Bloodstream infections or mechanical adverse events per 1,000 central venous catheter placements	MPSMS	✔				
Deaths per 1,000 discharges potentially resulting from complications of care	HCUP	✔	✔	✔		✔
Adults age 65 and over who received potentially inappropriate prescription medicines	MEPS	✔	✔	✔		✔
Adults who can sometimes or never get 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 due to a financial or insurance reason for not having a source of care	MEPS	✔	✔	✔		✔
People unable to get or delayed in receiving needed medical care, dental care, or prescription medication due to financial or insurance reasons	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.

Key: API=Asian or Pacific Islander; AI/AN=American Indian or Alaska Native; Poor=individuals with household incomes <100% of Federal poverty thresholds.

Key to Data Sources:

CDC = Centers for Disease Control and Prevention
ESRD CPMP = End Stage Renal Disease Clinical Performance Measures Project
HCUP = Healthcare Cost and Utilization Project
MDS = Medicare Minimum Data Set
MEPS = Medical Expenditure Panel Survey
MPSMS = Medicare Patient Safety Monitoring System
NAMCS = National Ambulatory Medical Care Survey
NHAMCS = National Hospital Ambulatory Medical Care Survey
NHDS = National Hospital Discharge Survey
NHIS = National Health Interview Survey
NIS = National Immunization Survey
NSDUH = National Survey on Drug Use and Health
NVSS-I = National Vital Statistics System, Linked Birth-Infant Death
NVSS-M = National Vital Statistics System, Mortality
NVSS-N = National Vital Statistics System, Natality
OASIS = Centers for Medicare and Medicaid Services Outcome and Assessment Information Set
QIO = Quality Improvement Organization Program
SEER = Surveillance, Epidemiology, and End Results Program
TEDS = Treatment Episode Data Set
USRDS = United States Renal Data System

U.S. Department of
Health and Human Services

Agency for Healthcare Research and Quality
540 Gaither Road
Rockville, MD 20850

AHRQ Publication No. 09-0002
March 2009