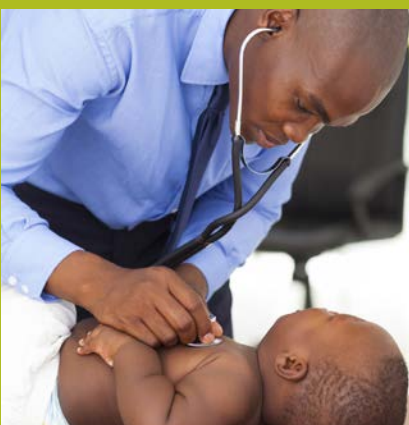


2016

National Healthcare Quality and Disparities Report



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2016 NATIONAL HEALTHCARE QUALITY AND DISPARITIES REPORT

**U.S. DEPARTMENT OF
HEALTH AND HUMAN SERVICES**

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EXECUTIVE SUMMARY

Key Findings

- ◆ Access: While most access measures (65%) tracked in this report did not demonstrate significant improvement (2000-2014), uninsurance rates (measured as uninsured at the time of interview) decreased from 2010 to 2016.
- ◆ Quality: Quality of health care improved overall from 2000 through 2014-2015 but the pace of improvement varied by priority area:
 - » **Person-Centered Care:** About 80% of person-centered care measures improved overall.
 - » **Patient Safety:** Almost two-thirds of patient safety measures improved overall.
 - » **Healthy Living:** About 60% of healthy living measures improved overall.
 - » **Effective Treatment:** More than half of effective treatment measures improved overall.
 - » **Care Coordination:** About half of care coordination measures improved overall.
 - » **Care Affordability:** About 70% of care affordability measures did not change overall.
- ◆ Disparities: Overall, some disparities were getting smaller from 2000 through 2014-2015, but disparities persist, especially for poor and uninsured populations in all priority areas:
 - » While 20% of measures show disparities getting smaller for Blacks and Hispanics, most disparities have not changed significantly for any other racial and ethnic groups.
 - » More than half of measures show that poor and low-income households have worse care than high-income households; for middle-income households, more than 40% of measures show worse care than high-income households.
 - » Nearly two-thirds of measures show that uninsured people had worse care than privately insured people.

About the National Healthcare Quality and Disparities Report

For the 14th year in a row, AHRQ is reporting on health care quality and disparities. The annual *National Healthcare Quality and Disparities Report* (QDR) is mandated by Congress to provide a comprehensive overview of the quality of health care received by the general U.S. population and disparities in care experienced by different racial and socioeconomic groups.

The report assesses the performance of our health care system and identifies areas of strengths and weaknesses, as well as disparities, for access to health care and quality of health care. Quality is described in terms of the National Quality Strategyⁱ priorities, which include patient safety, person-centered care, care coordination, effective treatment, healthy living, and care affordability.

ⁱMore information on the National Quality Strategy is available at <https://www.ahrq.gov/workingforquality/about/nqs-fact-sheets/fact-sheet.html>.

The report is based on more than 250 measures of quality and disparities covering a broad array of health care services and settings. Selected findings in each priority area are shown in this report, as are examples of large disparities, disparities worsening over time, and disparities showing improvement. The report is produced with the help of an Interagency Workgroup led by AHRQ.ⁱⁱ



ⁱⁱFederal participants on IWG: AHRQ, Administration for Children and Families, Administration for Community Living, Assistant Secretary for Planning and Evaluation, Centers for Disease Control and Prevention, Centers for Medicare & Medicaid Services, Health Resources and Services Administration, Indian Health Service, and National Institutes of Health.

OVERVIEW OF QUALITY AND ACCESS IN THE U.S. HEALTH CARE SYSTEM

The National Strategy for Quality Improvement in Health Care (National Quality Strategy, or NQS) (U.S. Department of Health and Human Services, 2011) identified three aims that form an overarching framework for this discussion of health care quality: Achieving Better Care, Achieving Healthy People/Healthy Communities, and Making Care Affordable. Although progress is being made toward these aims, variations persist among states and across health care settings.

Three Aims for Improving Health Care

The three aims for improving health care are used to guide quality improvement efforts and are used as the framework of the *National Healthcare Quality and Disparities Report* (QDR).

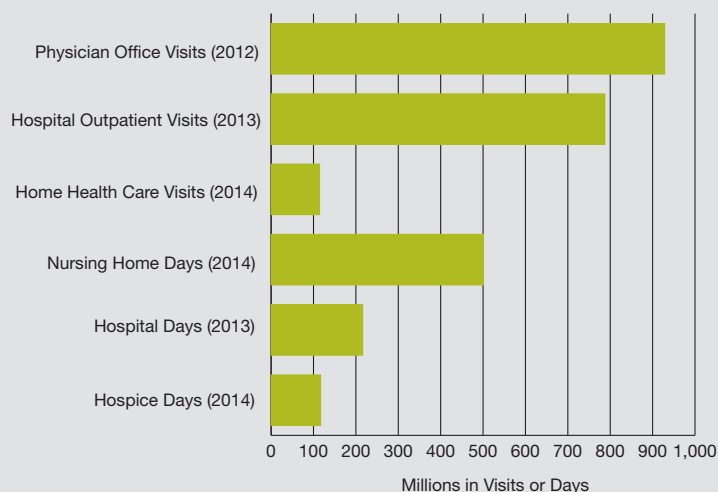
Aim 1: Achieving Better Care

Achieving Better Care requires coordinating services across a complex health care system. The health care industry employs millions of workers providing billions of services each year. Improving care requires facilities and providers to work together to expand access, enhance quality, and reduce disparities.

The QDR tracks care delivered by providers in many types of health care settings. While health is affected by many factors besides health care, receipt of appropriate high-quality services and counseling about healthy lifestyles can facilitate the maintenance of well-being and functioning.

Figure 1.

Number of health care service encounters, United States, 2012, 2013, 2014



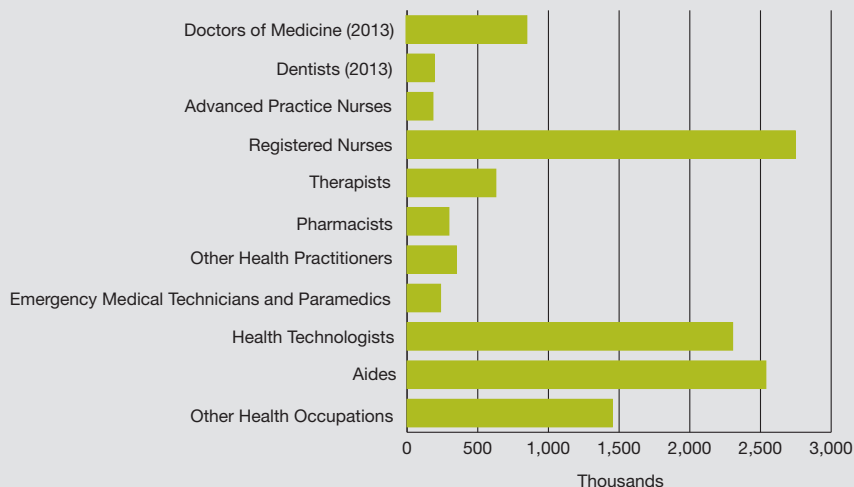
Source: National Center for Health Statistics (NCHS), *Health, United States, 2015* (physician [Table 76] and hospital visits [Table 82]) (<https://www.cdc.gov/nchs/hus/index.htm>); NCHS, Long-term care providers and services users in the United States: data from the National Study of Long-Term Care Providers, 2013-2014 (https://www.cdc.gov/nchs/data/series/sr_03/sr03_038.pdf) (nursing home days); Medicare Payment Advisory Commission (MedPAC), Health care spending and the Medicare Program: a data book, June 2016 (<http://medpac.gov/docs/default-source/data-book/june-2016-data-book-health-care-spending-and-the-medicare-program.pdf?sfvrsn=0>) (home health [Table 8-9]) and hospice data [Table 11-7]).

Note: Hospital outpatient visits include visits to the emergency department, outpatient department, referred visits (pharmacy, EKG, radiology), and outpatient surgery. Data shown represent the latest year for which data were available.

- ◆ In 2012, there were 929 million physician office visits, including visits to physicians in health centers (Figure 1).
- ◆ In 2013, there were 787 million hospital outpatient visits and 114 million home health visits.
- ◆ In 2014, patients spent 500 million days in nursing homes, 216 million days in hospitals, and 117 million days under hospice care.

Figure 2.

Number of people working in health occupations, United States, 2015



Source: National Center for Health Statistics, *Health, United States, 2015* (<https://www.cdc.gov/nchs/hus/index.htm>) (doctors and dentists); and Bureau of Labor Statistics Occupational Employment Statistics (<https://www.bls.gov/oes/>), 2015 (all other occupations).

Note: Doctors of medicine includes doctors of osteopathic medicine. Other health practitioners include physician assistants, chiropractors, dietitians and nutritionists, optometrists, podiatrists, and audiologists. Aides include nursing, psychiatric, home health, occupational therapy, and physical therapy assistants and aides.

- ◆ In 2013, there were 855,000 doctors of medicine, which includes active doctors of medicine and doctors of osteopathy, and 191,000 dentists working in the United States (Figure 2).
- ◆ In 2015, there were also 2.7 million registered nurses, 2.3 million health technologists, and 2.5 million nursing and other aides.
- ◆ In 2015, 349,000 other health practitioners provided care, including more than 98,000 physician assistants.

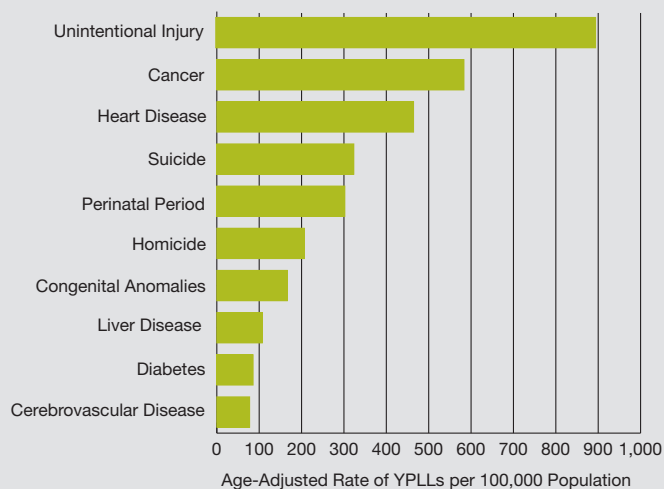
The numbers of health service encounters and people working in health occupations illustrate the large scale and inherent complexity of the U.S. health care system. The tracking of health care quality measures in this report, notably in the Trends in Quality section, attempts to quantify the progress made in improving quality and reducing disparities in the delivery of health care to the American people.

Aim 2: Achieving Healthy People/Healthy Communities

Achieving Healthy People/Healthy Communities requires optimizing population health by mitigating the effects of the leading causes of morbidity and mortality. Care for most of these conditions is tracked in the QDR. Variation in access to care and care delivery across communities contributes to disparities related to race, ethnicity, and socioeconomic status.

Figure 3.

Years of potential life lost before age 65, 2015



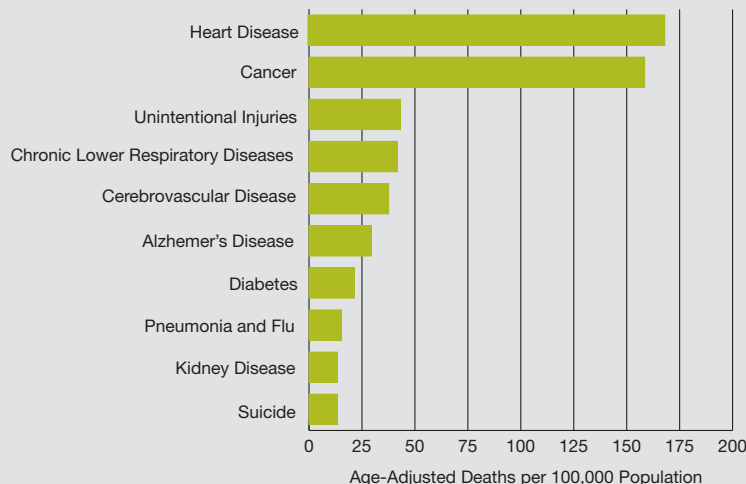
Key: YPLL = years of potential life lost.

Source: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Years of Potential Life Lost (YPLL) Reports, 1999 – 2015. <https://webappa.cdc.gov/sasweb/ncipc/ypll10.html>.

- ◆ The three leading diseases and injuries contributing to years of potential life lost (YPLLs) (unintentional injury, cancer, and heart disease) did not change between 2005 and 2015 (Figure 3).
- ◆ From 2005 to 2015, there was a 22% increase in YPLLs caused by suicide, moving its rank from number 5 to number 4.
- ◆ From 2005 to 2015, YPLLs caused by HIV decreased by 65%, moving from 8 to 11 in the ranking (data not shown). Diabetes moved from 11 to 9 in the ranking.

Figure 4.

Leading causes of death for the total population, United States, 2015



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System - Mortality. https://www.cdc.gov/nchs/data/databriefs/db267_table.pdf#3.

- ◆ Heart disease, cancer, cerebrovascular disease, chronic lower respiratory diseases, unintentional injuries, and diabetes were among the leading causes of death for the overall U.S. population (Figure 4).
- ◆ Causes of death vary by population. For example, suicide is the second leading cause of death for American Indian and Alaska Native populations for ages 10-14, 15-19, 20-24, and 25-34 (data not shown).

The years of potential life lost and leading causes of death illustrate the burden of disease experienced by the American people. Findings highlighted in the Trends in Quality section of this report attempt to quantify progress made in improving quality of care and reducing disparities in health care and ultimately reducing disease burden.

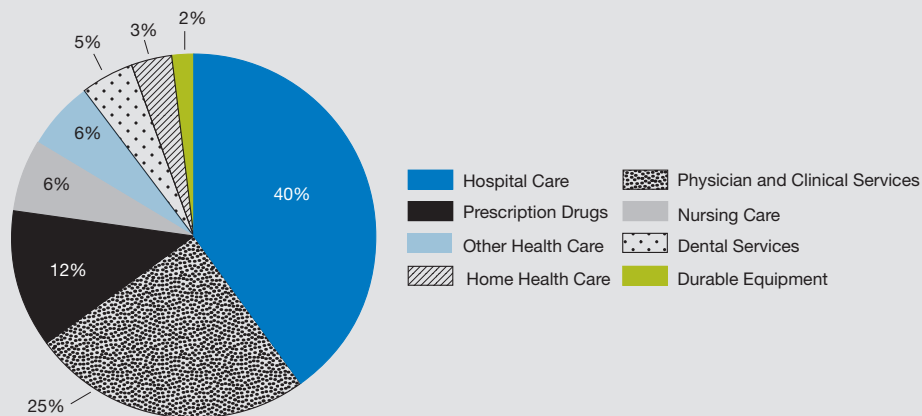
Aim 3: Making Care Affordable

Making Care Affordable requires smarter spending of limited health care dollars. Health care is costly. In 2015, U.S. health care spending increased 5.8% to reach \$3.2 trillion, or \$9,990 per person. In addition, the overall share of the U.S. economy devoted to health care spending was 17.8% in 2015, up from 17.4% in 2014 (CMS, 2015).

Multiple sources of fragmented expenditures channeled to both the public and private sectors of care make it challenging to control growth in health care costs. New delivery system models such as the patient-centered medical home (PCMH) have been developed that coordinate care across sectors and may help ensure that money is spent efficiently.

Figure 5.

Personal health care expenditures, by type of expenditure, 2014



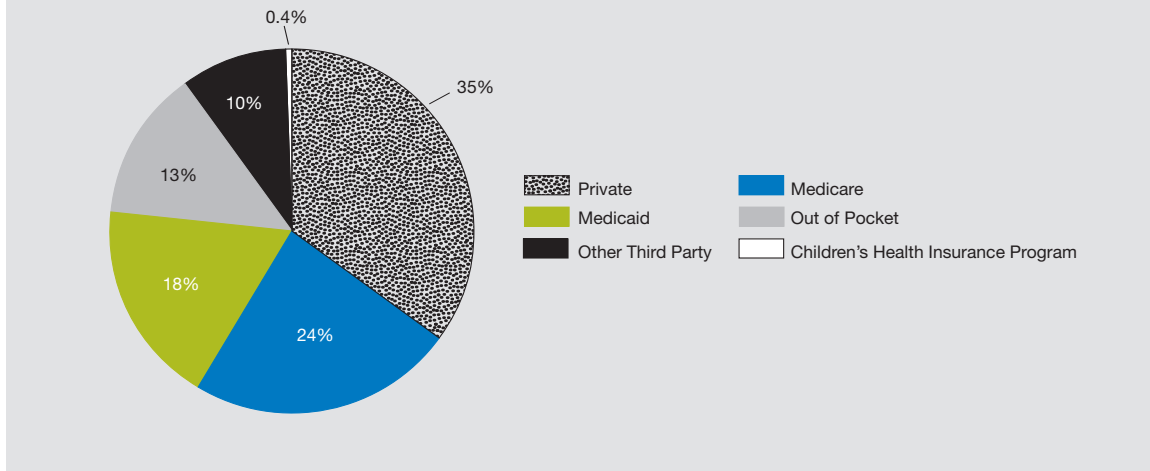
Source: CMS, National Health Expenditures Account, as reported in NCHS, *Health, United States, 2015*. <https://www.cdc.gov/nchs/hus/index.htm>.

Note: Personal health care expenditures are outlays for goods and services related directly to patient care. These expenditures are total national health expenditures minus expenditures for investment, health insurance program administration and the net cost of insurance, and public health activities. Percentages do not add to 100 due to rounding.

- ◆ In 2014, hospital care expenditures were \$971.8 billion, 40% of personal health care expenditures (Figure 5).
- ◆ Expenditures for physician and clinical services were \$603.7 billion while expenditures for dental services were \$113.5 billion, 25% and 5% of personal health care expenditures, respectively.
- ◆ Prescription drug expenditures were \$297.7 billion, 12% of personal health care expenditures.
- ◆ Nursing care facility expenditures were \$155.6 billion and home health care expenditures were \$83.2 billion, or 6% and 3% of personal health care expenditures, respectively.

Figure 6.

Personal health care expenditures, by source of funds, 2014



Source: Centers for Medicare & Medicaid Services, National Health Expenditures Account, as reported in *Health, United States, 2015*. <https://www.cdc.gov/nchs/hus/index.htm>.

Note: Personal health care expenditures are outlays for goods and services related directly to patient care. These expenditures are total national health expenditures minus expenditures for investment, health insurance program administration and the net cost of insurance, and public health activities. Percentages do not add to 100 due to rounding.

- ◆ In 2014, private insurance accounted for 35% of personal health care expenditures, followed by Medicare, Medicaid, and out of pocket (Figure 6).
- ◆ Sources of funds varied by type of expenditure (data not shown):
 - » Private insurance accounted for 37% of hospital, 42% of physician, 10% of home health, 8% of nursing home, and 43% of prescription drug expenditures.
 - » Medicare accounted for 26% of hospital, 23% of physician, 42% of home health, 23% of nursing home, and 29% of prescription drug expenditures.
 - » Medicaid accounted for 17% of hospital, 11% of physician, 36% of home health, 32% of nursing home, and 9% of prescription drug expenditures.
 - » Out-of-pocket payments accounted for 3% of hospital, 9% of physician, 9% of home health, 27% of nursing home, and 15% of prescription drug expenditures.

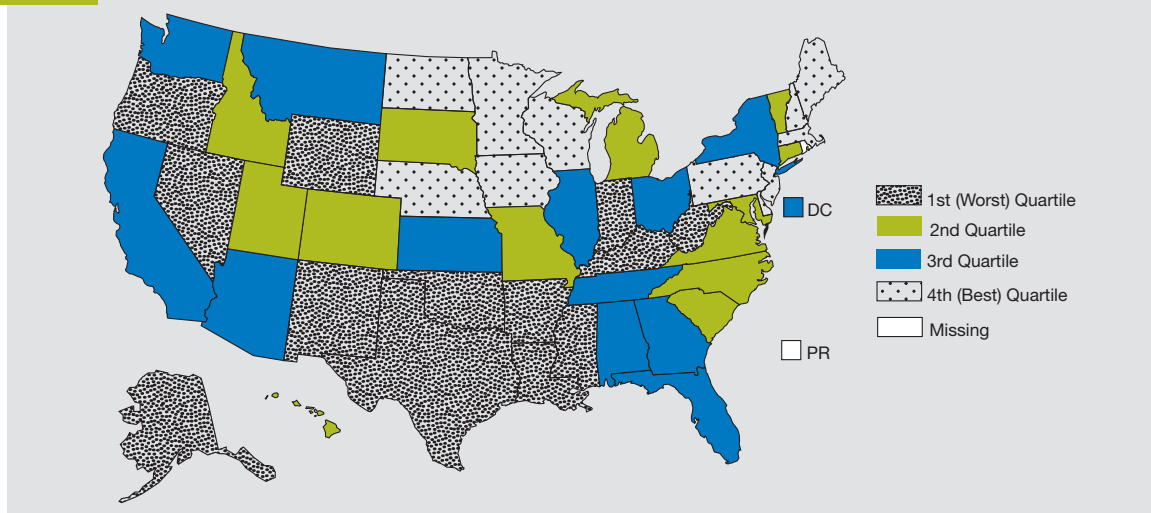
Personal health expenditures illustrate the economic burden of disease and barriers to access to health care. Findings from the Access and Disparities in Access to Health Care section of this report show the progress and opportunities for improvement in overcoming these barriers.

Variation in Health Care Quality and Disparities

State-level data show that health care quality and disparities vary widely depending on state and region. Although a state may perform well in overall quality, the same state may face significant disparities in health care access and quality.

Figure 7.

Overall quality of care, by state, 2014-2015

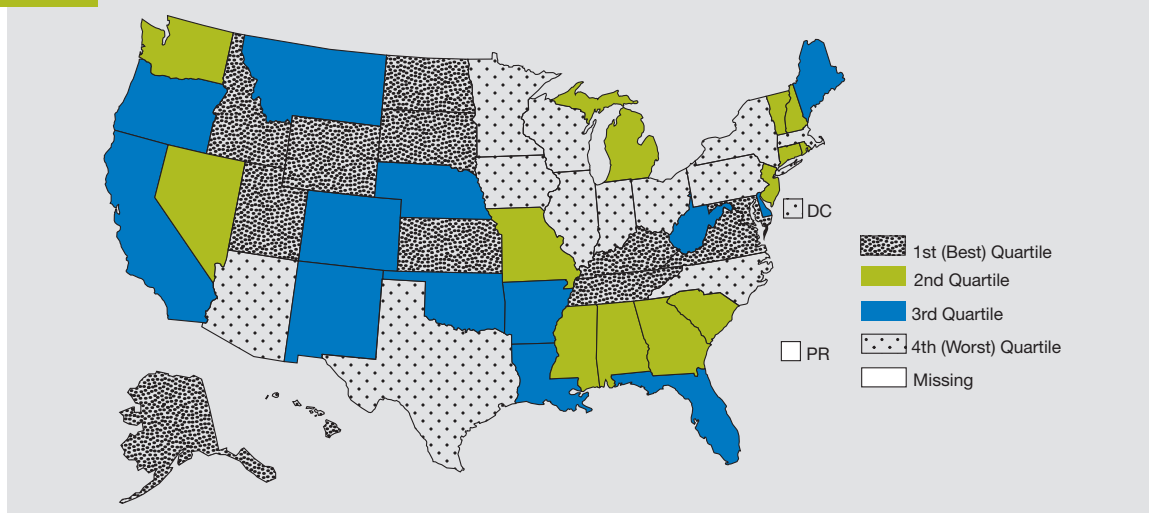


Note: All measures in the report with state-level data are used to compute an overall quality score for each state based on the number of quality measures above, at, or below the average across all states. States were ranked and quartiles are shown on the map. The states with the worst quality score are in the first quartile, and states with the best quality score are in the fourth quartile.

- ◆ Overall quality of care varied across the United States (Figure 7):
 - » Some states in the Midwest (Iowa, Minnesota, Nebraska, North Dakota, and Wisconsin) and some in the Northeast (Delaware, Maine, Massachusetts, New Hampshire, New Jersey, Pennsylvania, and Rhode Island) had the highest overall quality scores. Scores were based on the number of measures that were better, same, or worse than the national average for each measure.
 - » Many Southern and Southwestern states (Arkansas, Kentucky, Louisiana, Mississippi, New Mexico, Oklahoma, Texas, and West Virginia), several Western states (Nevada, Oregon, and Wyoming), and one Midwestern state (Indiana) had the lowest overall quality scores.

Figure 8.

Average differences in quality of care for Blacks, Hispanics, and Asians compared with Whites, by state, 2014-2015



Note: All measures in this report that had state-level data to assess racial and ethnic disparities were used. Separate quality scores were computed for Whites, Blacks, Hispanics, and Asians. For each state, the average of the Black, Hispanic, and Asian scores was divided by the White score. State-level American Indian/Alaska Native data were not available for analysis. States were ranked on this ratio, and quartiles are shown on the map. Disparity scores were not risk adjusted for population characteristics in each state. The states with the worst disparity score are in the fourth quartile, and states with the best disparity score are in the first quartile.

- ◆ Racial and ethnic disparities varied across the United States (Figure 8):
 - » Some Western and Midwestern states (Alaska, Hawaii, Idaho, Kansas, North Dakota, South Dakota, Utah, and Wyoming) and several Southern states (Kentucky, Maryland, Tennessee, and Virginia) had the fewest racial and ethnic disparities overall.
 - » Several Northeastern states (Massachusetts, New York, and Pennsylvania), some Midwestern states (Illinois, Indiana, Iowa, Minnesota, Ohio, and Wisconsin), one Southern state (North Carolina), one Southwestern state (Texas), and one Western state (Arizona) had the most racial and ethnic disparities overall.



ACCESS AND DISPARITIES IN ACCESS TO HEALTH CARE

To obtain high-quality care, Americans must first gain entry into the health care system. Measures of access to care tracked in the QDR include having health insurance, having a usual source of care, encountering difficulties when seeking care, and receiving care as soon as wanted. Historically, Americans have experienced variable access to care based on race, ethnicity, socioeconomic status, age, sex, disability status, sexual orientation, gender identity, and residential location.

Figure 9.

Number and percentage of access measures for which measure trends were better, same, or worsening, 2014



Key: n = number of measures.

Note: The measures represented in this chart are available in Appendix B online.

Most access measures did not experience significant improvement over time (2000-2014; Figure 9; Appendix A, Graph 1 shows examples). Some of these measures are:

- ◆ 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 needed.
- ◆ People who were unable to get or delayed in getting needed prescription medicines in the last 12 months.
- ◆ People with a usual primary care provider.

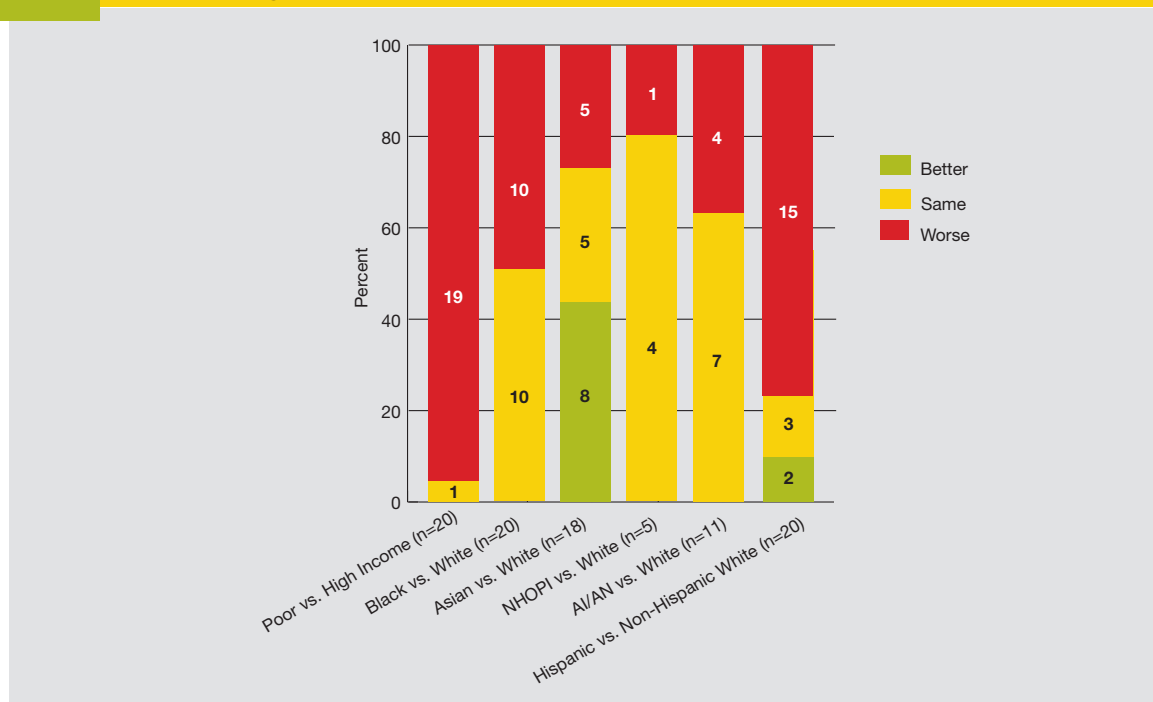
There were significant gains in having health insurance. Several subgroups did better than reference groups in 2014 on health insurance coverage measures for people under 65. Most of the recent increases in insurance coverage for people under 65 were due to Medicaid and Marketplace coverage (Selden, et al., 2016; Vistnes & Miller, 2016).

Most disparities showed no statistically significant changes, with a few exceptions, including the following measures that improved over time. The disparity between the comparison groups and reference groups are shrinking for the following measures:

- ◆ People under age 65 with any private health insurance:
 - » Adults with limitations in basic activities vs. neither basic nor complex activities
- ◆ Adults age 65 and over with any private health insurance:
 - » Hispanics vs. non-Hispanic Whites
 - » American Indians/Alaska Natives (AI/ANs) vs. Whites
 - » Blacks vs. Whites
- ◆ People with a usual source of care, excluding hospital emergency rooms, who has office hours at night or on weekends:
 - » AI/ANs vs. Whites
- ◆ Adults who had a doctor's office or clinic visit in the last 12 months and needed care, tests, or treatment who sometimes or never found it easy to get the care, tests, or treatment:
 - » Asians vs. Whites

Figure 10.

Number and percentage of access measures for which members of selected groups experienced better, same, or worse access to care compared with reference group, 2013-2015



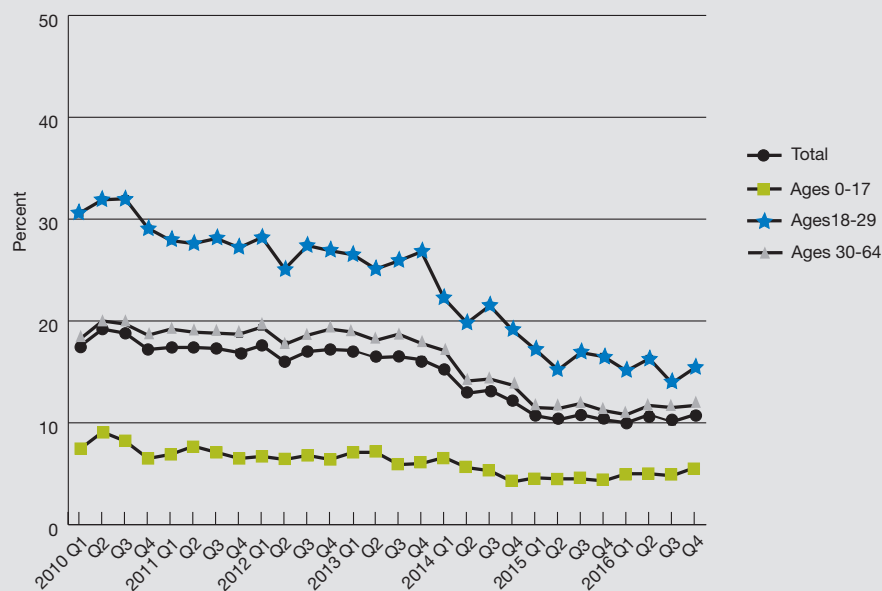
Key: n = number of measures; NHOPI = Native Hawaiian or Other Pacific Islander; AI/AN = American Indian or Alaska Native.

Note: The measures represented in this chart are available in Appendix B online. The number of measures is based on the measures that have data for each population group.

- ◆ Poor people (at or below 100% of the Federal Poverty Level [FPL]) experienced worse access to care compared with high-income people (400% or more of FPL) for all access measures except one measure (Figure 10): People with a usual source of care, excluding hospital emergency rooms, with office hours at night or on weekends (AHRQ, Medical Expenditure Panel Survey [MEPS]).
- ◆ Blacks experienced worse access to care compared with Whites for 50% of measures.
- ◆ Asians experienced worse access to care compared with Whites for 28% of measures and better access for 44% of measures.
- ◆ Among the 11 measures that had data for AI/ANs, 64% showed no statistically significant differences between AI/ANs and Whites.
- ◆ Hispanics experienced worse access to care compared with Whites for 75% of measures.

Figure 11.

Improving: People ages 0-64 who were uninsured at the time of interview, by age, 2010-2016, by quarter



Key: Q = quarter.

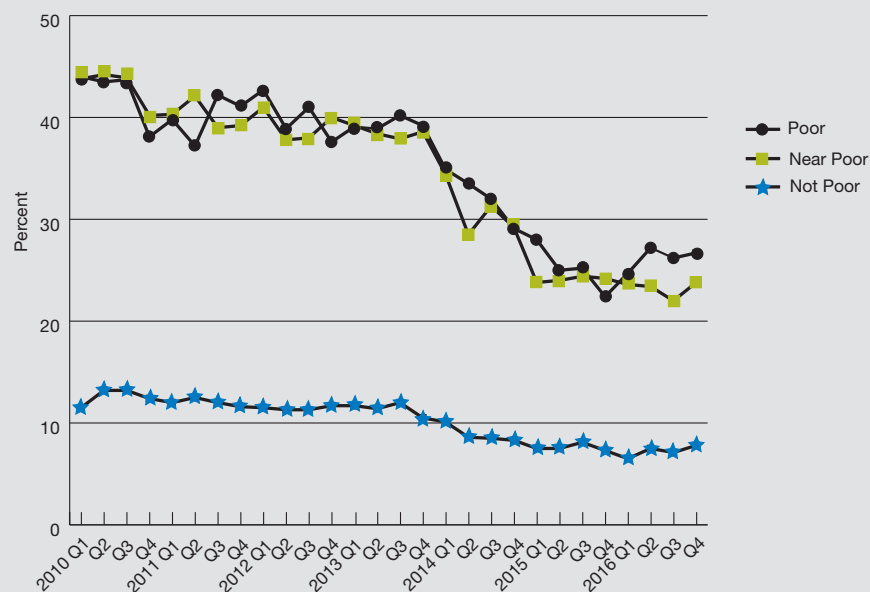
Source: National Center for Health Statistics, National Health Interview Survey Early Release Program, January 2010-December 2016.

Note: For this measure, lower rates are better.

- ◆ From the first quarter of 2010 to the fourth quarter of 2016, the percentage of people ages 18-29 years who were uninsured at the time of interview decreased from 30.6% to 15.4% (Figure 11).
- ◆ During this time, the percentage of people who were uninsured at the time of interview also decreased for all other age groups under 65.

Figure 12.

Improving: Adults ages 18-64 who were uninsured at the time of interview, by poverty status, 2010-2016, by quarter



Key: Q = quarter.

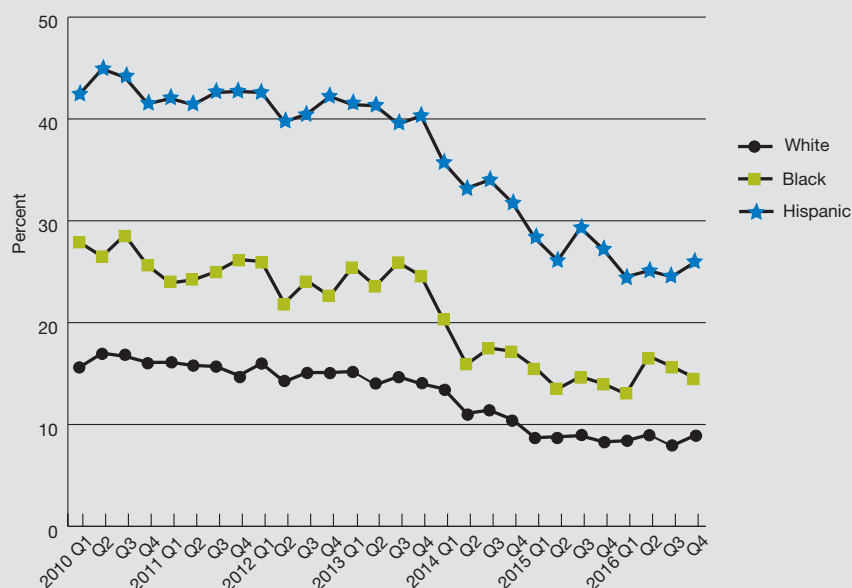
Source: National Center for Health Statistics, National Health Interview Survey Early Release Program, January 2010-December 2016.

Note: For this measure, lower rates are better. Poverty categories are based on the Federal Poverty Level (FPL). Poor = below the FPL; near poor = 100% to <200% of the FPL; not poor = 200% or more of the FPL.

- ◆ From the first quarter of 2010 to the fourth quarter of 2016, the percentage of people ages 18-64 who were uninsured at the time of interview decreased for all poverty status groups (Figure 12). The percentage of uninsured near-poor adults dropped from 43.8% to 23.8% during this time.
- ◆ In quarter 4 of 2016, 26.7% of poor adults were uninsured at the time of interview compared with 7.8% of adults who were not poor.

Figure 13.

Improving: Adults ages 18-64 who were uninsured at the time of interview, by race/ethnicity, 2010-2016



Key: Q = quarter.

Source: National Center for Health Statistics, National Health Interview Survey Early Release Program, January 2010-December 2016.

Note: For this measure, lower rates are better. White and Black are non-Hispanic. Hispanic includes all races. Data for Asian and Pacific Islanders and American Indians/Alaska Natives are not available for this measure.

- ◆ From the first quarter of 2010 to the fourth quarter of 2016, the percentage of people ages 18-64 who were uninsured at the time of interview declined for Whites (15.6% to 8.9%), Blacks (27.9% to 14.6%), and Hispanics (42.4% to 25.9%) (Figure 13).
- ◆ In addition, the disparities between Blacks and Whites and Hispanics and Whites were getting smaller over time.



QUALITY AND DISPARITIES IN QUALITY OF HEALTH CARE

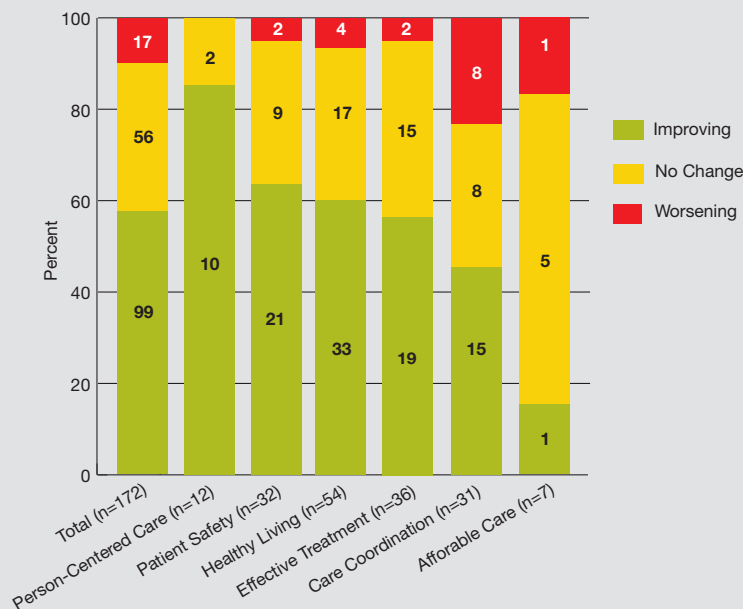
The QDR examines quality and disparities based on the six priority areas and access. The findings below provide examples of measures that showed large disparities, worsening disparities, or large improvements over time. A comprehensive list of measures improving, worsening, or staying the same, as well as disparities with reference groups and trends in disparities, can be found in Appendix B online.

Trends in Quality

Quality of health care improved overall through 2014, but the pace of improvement varied by priority area.

Figure 14.

Number and percentage of all quality measures that were improving, not changing, or worsening, total and by priority area, from 2000 through 2014



Key: n = number of measures.

Note: Most measures are tracked from 2000 through 2014 and others begin in later years. For more information, please review Appendix B.

Trends in Person-Centered Care

Person-centered care means defining success not just by the resolution of clinical symptoms but also by whether patients achieve their desired outcomes. About 80% of person-centered care measures were improving overall. For example, overall trends from 2002 to 2014 showed significant improvement in provider-patient communication for adults who had doctor visits in the past 12 months (Appendix A, Graph 2) (AHRQ, Medical Expenditure Panel Survey [MEPS]).

Trends in Patient Safety

Ensuring patient safety means providing care free from accidental injury due to medical care or medical errors (Kohn, et al., 2000). The QDR tracks a number of patient safety measures organized around the major health care settings that must measure, understand, and improve health care so that Americans can be cared for in a safer health care environment. Measures include hospital-acquired infections, pressure ulcers in nursing homes, inappropriate prescription medications, and hospital readmissions.

Almost two-thirds of patient safety measures were improving overall. However, no statistically significant changes overall were observed in measures such as adult hospital patients with an anticoagulant-related adverse drug event to warfarin. In 2009, the rate for this measure was 4.4% and in 2014 the rate was 4.8% (AHRQ and Centers for Medicare & Medicaid Services [CMS], Medicare Patient Safety Monitoring System [MPSMS]).

Several patient safety measures improved, including:

- ◆ Hospital admissions with central venous catheter-related bloodstream infections, which declined from 1.9 per 1,000 discharges in 2008 to 0.67 per 1,000 discharges in 2014 (Appendix A, Graph 3) (AHRQ, Healthcare Cost and Utilization Project [HCUP], Nationwide Inpatient Sample [NIS], 2008-2011; State Inpatient Databases [SID], 2012-2014; and AHRQ Quality Indicators, version 4.4).
- ◆ Adult patients receiving hip joint replacement due to fracture who had adverse events, which improved from 16.4% in 2009 to 9.8% in 2014 (Appendix A, Graph 3) (AHRQ and CMS, MPSMS).
- ◆ Adult hospital patients with an anticoagulant-related adverse drug event to low-molecular-weight heparin and factor Xa, which improved from 5.6% in 2009 to 3.5% in 2014 (Appendix A, Graph 4) (AHRQ and CMS, MPSMS).

Trends in Healthy Living

Healthy living measures in the QDR track process measures that focus on helping individuals maintain healthy lifestyles and wellness in their communities. These include measures for clinical preventive services, maternal and child care, obesity prevention, functional status preservation and rehabilitation, and supportive and palliative care.

About 60% of healthy living measures were improving overall, including adolescent vaccination. From 2008 to 2014, the percentage of adolescents ages 16-17 who received meningococcal conjugate vaccine increased from 38.6% to 79.1% (Appendix A, Graph 5) (Centers for Disease Control and Prevention [CDC], National Center for Immunizations and Respiratory Diseases and National Center for Health Statistics [NCHS], National Immunization Survey – Teen). However, no statistically significant changes overall were observed for influenza vaccinations for high-risk adults.

About 7% of all measures showed worsening performance, including one women's health measure and one children's health measure. In 2000, 87.5% of women ages 21-65 received a Pap smear in the last 3 years, but in 2013, 80.7% of women reported receiving this test (Appendix A, Graph 6). From 2002 to 2014, the percentage of children ages 12-19 with obesity increased from 16% to 20.5% (Appendix A, Graph 6) (CDC, NHANES).

Trends in Effective Treatment

Delivering optimal treatments for acute illness can help reduce the consequences of illness and promote the best recovery possible. The QDR effective treatment measures include process measures for preventive care, treatment of acute illness, and chronic disease management. Some outcome measures are also tracked in the QDR since timely treatment of acute illness and injury and meticulous management of chronic disease can positively affect mortality, morbidity, and quality of life.

More than half of Effective Treatment measures were improving. However, several areas show no statistically significant changes overall, including diabetes care, treatment for illicit drug use, and treatment for alcohol problems for people age 12 and over who needed such treatment.

Trends in Care Coordination

Care coordination is a conscious effort to ensure that all key information needed to make care decisions is available to health care consumers and providers. Care coordination is defined as the deliberate organization of patient care activities between two or more participants involved in a person's care to facilitate appropriate delivery of health care services (Shojania, et al., 2007). Coordinating basic patient information among providers is essential so that important information is not ignored, lost, or never communicated. Incomplete or inaccurate information and lack of followup care lead to confusion, higher costs, and misuse of medications, tests, and therapies for all patients, which results in poor outcomes (Carney Moore, et al., 2015).

About a quarter of all care coordination measures showed worsening performance. For example, avoidable admissions for hypertension per 100,000 population age 18 and over increased from 46.1 in 2000 to 54.2 in 2014 (AHRQ, HCUP, NIS, SID). From 2007 to 2014, the rate of emergency department visits with a principal diagnosis related to mental health increased from 1,063 per 100,000 population to 1,391 per 100,000 population (AHRQ, HCUP, Nationwide Emergency Department Sample [NEDS]).

About half of Care Coordination measures were improving overall. Among the best performing measures was hospital patients with heart failure who were given complete written discharge instructions. In 2013, 94.6% of patients received written discharge instructions, an increase from 57.4% of patients in 2005 (CMS, Clinical Data Warehouse). The rate of admissions for angina without cardiac procedure per 100,000 population age 18 and over showed one of the largest improvements, from 81.5 in 2000 to 11.9 in 2014 (AHRQ, HCUP, NIS, SID).

Trends in Care Affordability

Health insurance is designed to protect individuals from the burden of high health care costs. However, even with health insurance, the financial burden of health care can be high and is increasing (Banthin & Bernard, 2006). High premiums and out-of-pocket payments can be a significant barrier to accessing needed medical treatment, resulting in higher comorbidity and lower quality of life (Henrikson, et al., 2017). In addition, the advent of high-deductible health plans is placing a financial burden on many people, especially those with chronic conditions (Reed, et al., 2012; Zimmerman, 2011). Ensuring health care is affordable remains an important factor in achieving access to high-quality health care.

Data presented in this report show that about 70% of care affordability measures had no statistically significant changes overall. For example, from 2006 to 2014, no statistically significant changes were observed in the percentage of people under age 65 whose family's health insurance premiums and out-of-pocket medical expenditures were more than 10% of total family income (17.5% to 16.1%) (AHRQ, MEPS).

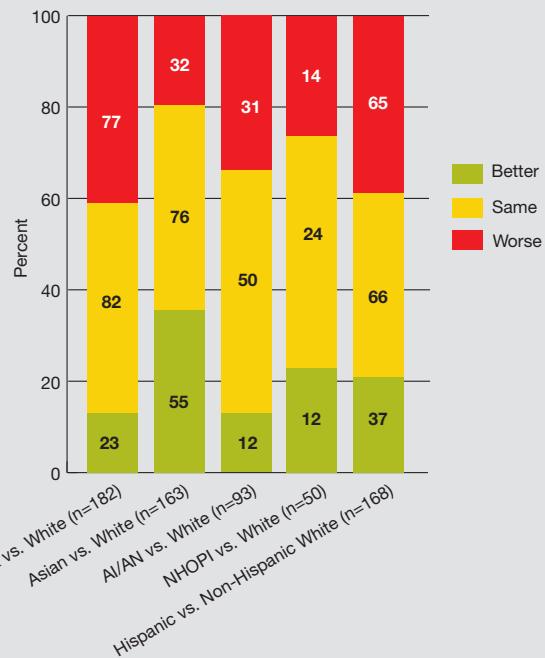
Trends in Disparities

Although some gaps are getting smaller, disparities remain.

Measures in this report were analyzed by comparing race/ethnicity, income, and insurance status with their reference groups in order to show disparities that may exist between these groups.

Figure 15.

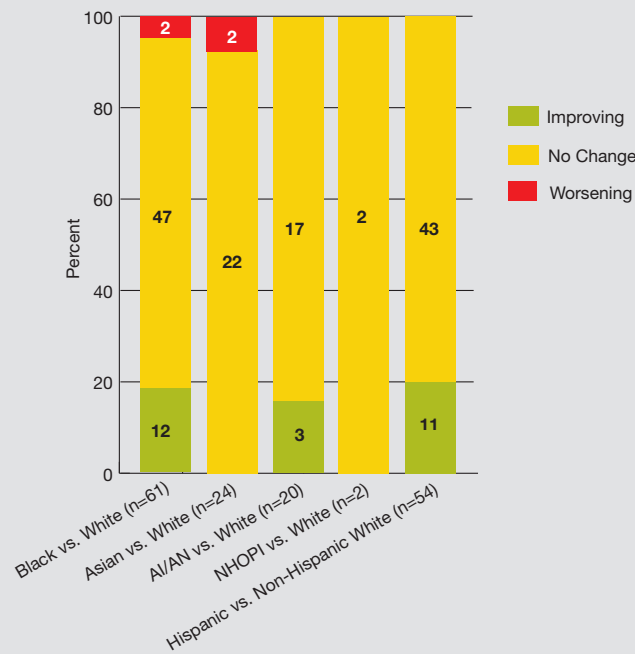
Number and percentage of quality measures for which members of selected groups experienced better, same, or worse quality of care compared with reference group (White) in 2013-2015



Key: n = number of measures; AI/AN = American Indian or Alaska Native; NHOPi = Native Hawaiian or Other Pacific Islander.

Figure 16.

Number and percentage of quality measures with disparity at baseline for which disparities related to race and ethnicity were improving, not changing, or worsening (2000 through 2014-2015)



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

Figure 17.

Number and percentage of quality measures for which income groups experienced better, same, or worse quality of care compared with reference group (high income), 2014-2015

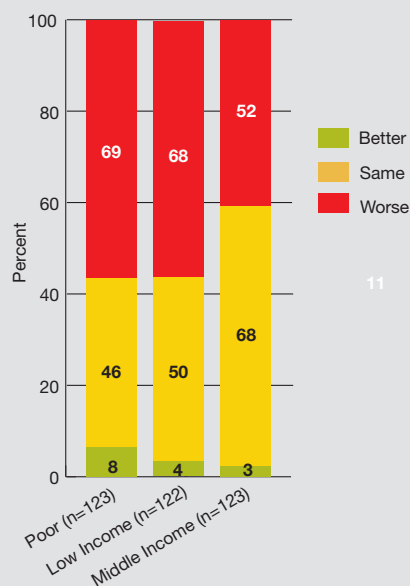
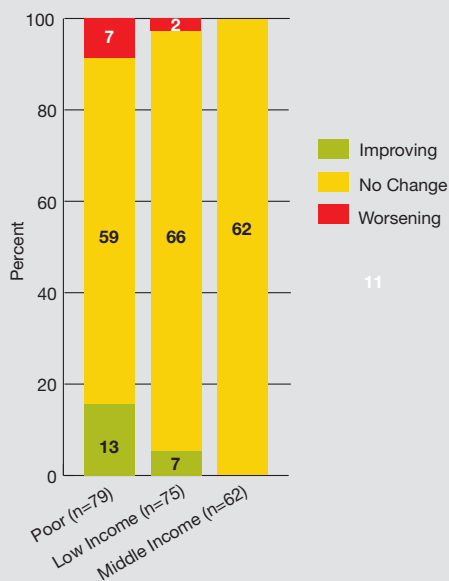


Figure 18.

Number and percentage of quality measures with disparity at baseline for which disparities related to income were improving, not changing, or worsening (2000 through 2014-2015)



Key: n = number of measures.

Figure 19.

Number and percentage of quality measures for which insurance groups experienced better, same, or worse quality of care compared with reference group (privately insured), 2014-2015



Key: n = number of measures.

Overall Disparities

- ◆ There were significant disparities for poor and uninsured populations in all priority areas. Figures 15-19 show that overall, some disparities were getting smaller from 2000 through 2011-2015, but disparities persist, especially among people in poor and low-income households, uninsured people, Hispanics, and Blacks.

Disparities in Patient Safety

- ◆ While many patient safety measures were improving overall, there were significant disparities in other patient safety measures, including the percentage of older adults who received potentially inappropriate prescription medications. In 2014, the percentage of older adults who, in the calendar year, received at least 1 of 33 potentially inappropriate prescription medications was higher for adults with complex activity limitations (21.7%) compared with adults with neither basic nor complex activity limitations (8.2%) (Appendix A, Graph 8ⁱⁱⁱ) (AHRQ, MEPS).

Disparities in Care Coordination

- ◆ Although about half of care coordination measures showed improvement, the largest disparities were observed in some preventable emergency department visits. These included emergency department visits for asthma for poor children (1,515 per 100,000 population) and adults (923 per 100,000 population) compared with high-income children (549 per 100,000 population) and adults (310 per 100,000 population) in 2014 (Appendix A, Graph 9) (AHRQ, HCUP, NEDS, 2014).

ⁱⁱⁱNot all graphs in Appendix A are cited in this report. Appendix A contains additional measures.

- ◆ Trends in these disparities also show worsening over time. From 2008 to 2014, the rate of poor adults who visited emergency departments for asthma increased from 809 to 923 per 100,000 population compared with high-income adults, who showed a decrease from 348 to 310. For poor children, the rate increased from 1,196 to 1,515 per 100,000 population compared with high-income children, whose rate remained stable (553 in 2008 and 549 in 2014) (Appendix A, Graph 10) (AHRQ, HCUP, NEDS, 2008-2014).
- ◆ Similarly, significant disparities in 2014 and worsening disparities from 2007 to 2014 were observed for emergency department visits for mental health among poor adults compared with high-income adults. High rates of utilization in emergency department visits may point to challenges in coordination of care and inadequate access. From 2007 to 2014, the rate of emergency department visits for mental health increased from 1,369 per 100,000 population to 1,993 per 100,000 population among poor adults. For adults with high income, the rate increased from 763 per 100,000 population to 941 per 100,000 population (Appendix A, Graph 11) (AHRQ, HCUP, NEDS, 2007-2014).

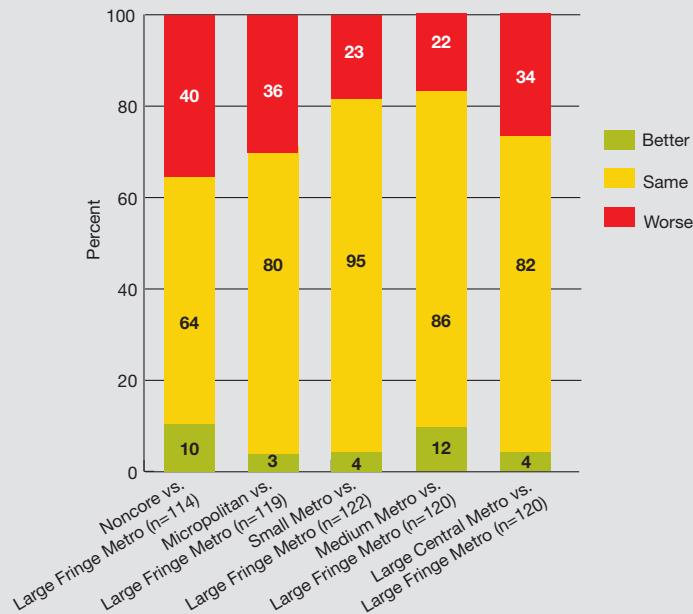
Disparities in Care Affordability

- ◆ Significant disparities persist for poor people compared with high-income people who reported they were unable to get or were delayed in getting needed medical care due to financial or insurance reasons (Appendix A, Graph 12) (AHRQ, MEPS).
- ◆ Significant disparities also persist for uninsured people compared with privately insured people who reported they were unable to get or were delayed in getting needed medical care due to financial or insurance reasons (Appendix A, Graph 13) (AHRQ, MEPS).

Variation in care persisted across the urban-rural continuum in 2014-2015.

Figure 20.

Number and percentage of quality and access measures for which members of selected groups experienced better, same, or worse quality of care compared with reference group in 2014-2015, by geographic location



Key: n = number of measures.

Note: The measures represented in this chart are available in Appendix B online. Definitions of geographic locations are available at https://www.cdc.gov/nchs/data_access/urban_rural.htm (refer to Appendix D).

Geographic differences vary by priority area.

Care Coordination

- ◆ Data show differences in utilization of mental health care and substance abuse treatment in large urban areas and small rural areas. High rates of utilization in emergency department visits may point to challenges in coordination of care and inadequate access.
- ◆ From 2007 to 2014, emergency department visits with a principal diagnosis related to substance abuse increased for all geographic locations except noncore, which showed no statistically significant change (AHRQ, HCUP, NEDS, 2007-2014).
- ◆ In 2014, the rate of emergency department visits with a principal diagnosis related to mental health per 100,000 population was higher for residents of large central metropolitan areas (1,435 per 100,000) than for residents of large fringe metropolitan areas (1,163 per 100,000) (Appendix A, Graph 14) (AHRQ, HCUP, NEDS, 2014).

- ◆ In 2014, residents of large central metropolitan areas (758 per 100,000) were more likely than residents of large fringe metropolitan areas (572 per 100,000) to have an emergency department visit with a principal diagnosis related to substance abuse only (Appendix A, Graph 15) (AHRQ, HCUP, NEDS, 2014).

Effective Treatment

- ◆ Data show that care for cardiac conditions remains a challenge for rural areas. In 2014, residents of micropolitan areas (384.7 per 100,000) were more likely than residents of large fringe metropolitan areas (329 per 100,000) to have hospital admissions for heart failure (Appendix A, Graph 16) (AHRQ, HCUP, National Inpatient Sample, 2014, and AHRQ Quality Indicators, version 4.4).
- ◆ Some measures, such as treatment for drug use, show worse performance in large suburbs. In 2015, residents of medium metropolitan areas (24.2%) and noncore areas (26.8%) who needed treatment for illicit drug use were more likely than residents of large fringe metropolitan areas (15.5%) to receive such treatment at a specialty facility (Appendix A, Graph 17) (Center for Behavioral Health Statistics and Quality, 2016, Results from the National Survey on Drug Use and Health: custom tables, Substance Abuse and Mental Health Services Administration, Rockville, MD).

Care Affordability

- ◆ Finding affordable care appears to have improved in some smaller populated areas. In 2014, the percentage of people who were unable to get or delayed in getting needed prescription medicines who cited financial or insurance reasons was lower in small metropolitan areas (41.0%) than in large fringe metropolitan areas (69.8%) (Appendix A, Graph 18) (AHRQ, MEPS).

LOOKING FORWARD

The *National Healthcare Quality and Disparities Report* (QDR) continues to track the nation's performance on health care access, quality, and disparities. The QDR data demonstrate significant progress in some areas and identify other areas that merit more attention where wide variations persist. The number of measures in each priority area varies, and some measures carry more significance than others as they affect more people or have more significant consequences. But these numbers are a way to quantify and illustrate progress toward achieving accessible, high-quality, and affordable care at the national level using available nationally representative data.

This report shows that while performance for most access measures did not change significantly over time (2000-2014), insurance coverage rates did improve (2000-2016). Quality of health care improved in most areas but some disparities still persist, especially for poor and low-income households and those without health insurance.

U.S. Department of Health and Human Services (HHS) agencies are working on research and conducting programs in many of the priority areas, most notably:

- ◆ **Patient Safety.** The National Scorecard on Rates of Hospital-Acquired Conditions 2010 to 2015 showed a 21 percent decline in hospital-acquired conditions, due to hospitals' increased focus on safety, spurred in part by Medicare payment incentives and catalyzed by the HHS Partnership for Patients initiative. Future improvements in patient safety are expected as ambulatory settings focus on improving patient safety. A new AHRQ resource, Toolkit to Improve Safety in Ambulatory Surgery Centers, helps ambulatory surgery centers (ASCs) make care safer for their patients. ASCs can use the toolkit to apply the proven principles and methods of AHRQ's Comprehensive Unit-based Safety Program (CUSP) to prevent surgical site infections and other complications and improve safety culture in their facilities. In addition, new CUSP toolkits are available on the AHRQ website to help clinicians and hospitals reduce ventilator-associated events and to help nursing home staff reduce catheter-associated urinary tract infections.
- ◆ **Effective Treatment and Care Coordination** for mental health and substance use treatment. The Surgeon General's Report on Alcohol, Drugs, and Health reviews the knowledge base of substance use and provides recommendations to address substance misuse and related health consequences.

Since 2009, the SAMHSA-HRSA^{iv} Center for Integrated Health Solutions has provided resources for integrated primary and behavioral health services to better address the needs of individuals with mental health and substance use conditions or comorbidities of mental and substance use disorders. Integrating mental health, substance use disorder treatment, and primary care services produces the best outcomes and proves the most effective approach to caring for people with multiple health care needs.

The SAMHSA Knowledge Application Program provides substance use treatment professionals with publications, online education, and other resources that contain information on best treatment practices.

^{iv}SAMHSA=Substance Abuse and Mental Health Services Administration; HRSA=Health Resources and Services Administration.

- ◆ National Institutes of Health/National Institute of Mental Health funding opportunities such as PAR-17-265 encourage research applications to develop and test the effectiveness and implementation of family navigator models designed to promote early access, engagement, and coordination of mental health treatment and services for children and adolescents who are experiencing early symptoms of mental health problems.

In addition, HHS continues to address **health disparities**. New data and resources address health disparities, especially among racial and ethnic minorities, older populations, rural populations, and people with limited English proficiency. One recent report is *Racial and Ethnic Disparities by Gender in Health Care in Medicare Advantage* from the Centers for Medicare & Medicaid Services (CMS) Office of Minority Health.

Although the QDR does not include data on veterans, data are available from the Department of Veterans Affairs (VA). The Office of Health Equity has conducted research and published the *National Veteran Health Equity Report*, which showed burden of diseases for veterans.

Project ECHO (Extension for Community Healthcare Outcomes) is a notable program addressing health disparities. It is jointly funded by several HHS agencies, including AHRQ, CDC, CMS, HRSA, and SAMHSA, as well as other federal and state government agencies and private partners. ECHO is a collaborative model of medical education and care management to increase access to specialty treatment in rural and underserved areas by engaging clinicians in a continuous learning system and partnering them with specialist mentors at an academic medical center or hub.

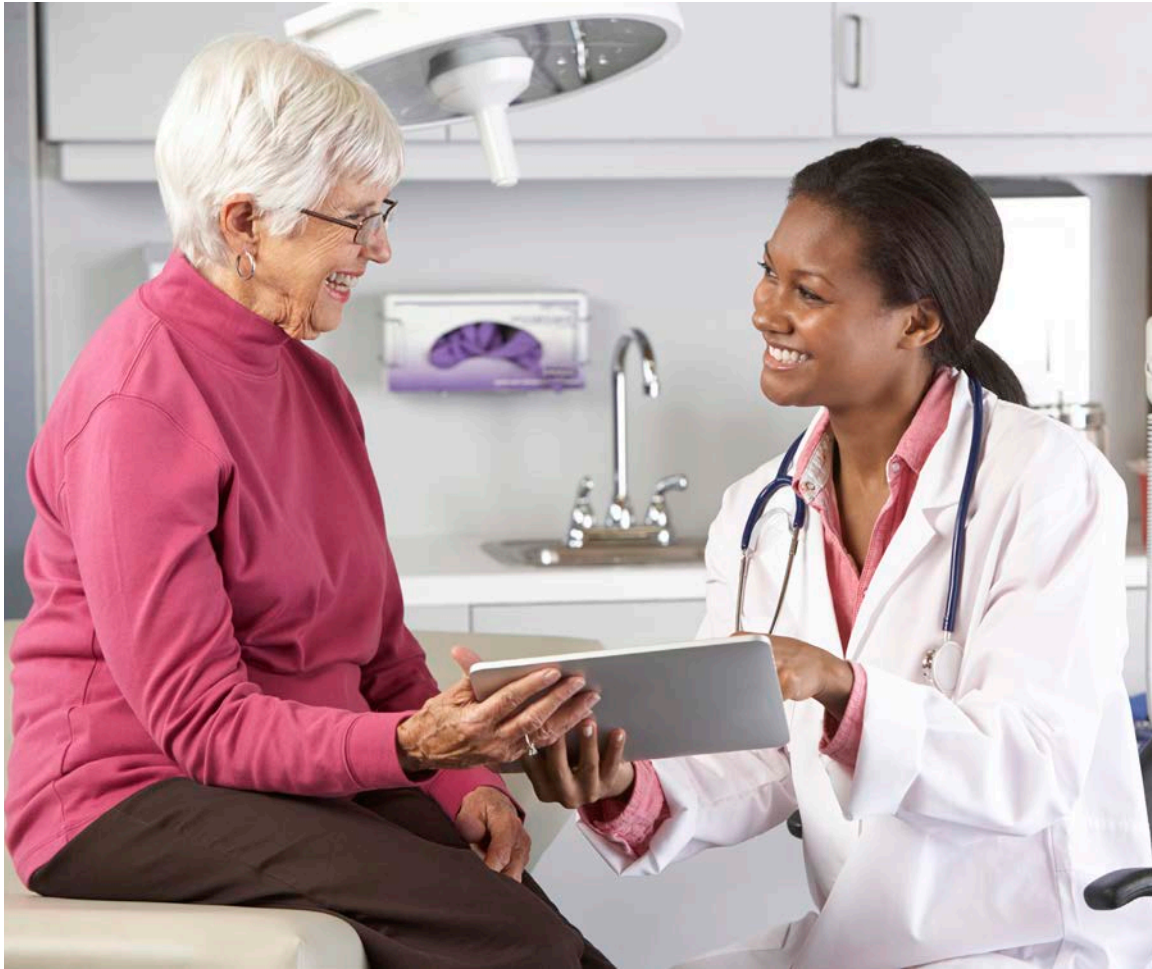
Recently, the National Institute on Minority Health and Health Disparities launched a new resource for stakeholders who work with populations with limited English proficiency: the Language Access Portal (LAP). The LAP contains information in multiple languages on diseases for which major health disparities have been identified in non-English-speaking populations, including cancer, diabetes, and cardiovascular disease. New disease areas will continue to be included and additional resources will be incorporated as they become available.

The Office of the National Coordinator for Health IT (ONC) Health IT Certification Program supports the availability of certified health IT for its encouraged and required use under federal, state, and private programs. The Health IT Certification Criteria (2015 Edition) includes certification criteria that support the capture of a wider range of patient health information, in a structured, more granular way. These criteria can help clinicians and organizations identify opportunities for care improvement for the patient populations they serve. It is a critical step forward in addressing health disparities in our health care system and in supporting quality care for all people, regardless of race, gender, sexual orientation, socioeconomic background, or behavioral conditions.

The Centers for Disease Control and Prevention provides ongoing administrative, scientific, and technical support for the operations of the Community Preventive Services Task Force, whose members review the effectiveness of intervention approaches across a wide range of health topics, including health equity. The Guide to Community Preventive Services (The Community Guide) is a collection of evidence-based

findings of the Task Force applicable to communities and other populations. It includes strategies such as health care system changes, workplace and school programs and policies, and community-based programs.

Through various quality improvement and patient safety initiatives, HHS and other federal agencies drive us toward better health care. The 2016 QDR documents ongoing progress toward the goal of high-quality health care that is accessible to all Americans and identifies areas for improvement. Policymakers, researchers, and others can use these findings to direct future efforts toward making health care more coordinated, affordable, and equitable.



REFERENCES

- Banthin JS, Bernard DM. Changes in financial burdens for health care: national estimates for the population younger than 65 years, 1996 to 2003. *JAMA* 2006;296(22):2712-9. <https://www.ncbi.nlm.nih.gov/pubmed/17164457>. Accessed April 7, 2017.
- Carney Moore JM, Dolansky M, Hudak C, et al. Care coordination between convenient care clinics and healthcare homes. *J Am Assoc Nurse Pract* 2015 May;27(5):262-9.
- Centers for Medicare & Medicaid Services. National Health Expenditures 2015 Highlights. <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/highlights.pdf>. Accessed June 28, 2017.
- Henrikson NB, Change E, Ulrich K, et al. Communication with physicians about health care costs: survey of an insured population. *Perm J* 2017;21:16-070. <https://www.thepermanentejournal.org/issues/2017/spring/6377-communication-with-physicians.html>. Accessed May 18, 2017.
- Kohn L, Corrigan J, Donaldson M, eds. To err is human: building a safer health system. Institute of Medicine, Committee on Quality of Health Care in America. Washington, DC: National Academy Press; 2000. <https://www.nap.edu/catalog/9728/to-err-is-human-building-a-safer-health-system>. Accessed April 7, 2017.
- Reed M, Graetz I, Wang H, et al. Consumer-directed health plans with health savings accounts: whose skin is in the game and how do costs affect care seeking? *Med Care* 2012 Jul;50(7):585-90.
- Selden TM, Abdus S, Keenan PS. Insurance coverage of ambulatory care visits in the last six months of 2011-13 and 2014, by Medicaid expansion status. MEPS Statistical Brief #494. Rockville, MD: Agency for Healthcare Research and Quality; October 2016. http://meps.ahrq.gov/mepsweb/data_files/publications/st494/stat494.pdf. Accessed June 28, 2017.
- Shojania K, McDonald K, Wachter R, et al. Closing the quality gap: a critical analysis of quality improvement strategies—Volume 7: Care coordination. Rockville, MD: Agency for Healthcare Research and Quality; 2007. <http://www.ahrq.gov/research/findings/evidence-based-reports/caregaptp.html>. Accessed May 18, 2017.
- Vistnes J, Miller GE. Transitions in health insurance coverage for non-elderly adults in the U.S. civilian noninstitutionalized population: 2013-2014 and selected preceding two-year periods. MEPS Statistical Brief #489. Rockville, MD: Agency for Healthcare Research and Quality; June 2016. http://meps.ahrq.gov/mepsweb/data_files/publications/st489/stat489.pdf. Accessed June 28, 2017.
- Zimmerman C. Families with chronic conditions in high-deductible health plans facing substantial financial burden. *Find Brief* 2011 Mar;14(1):1-3.



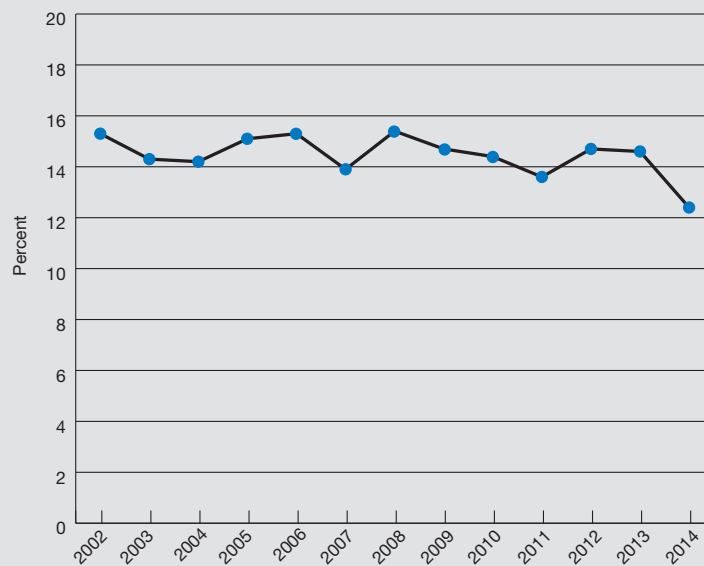
APPENDIX A. SELECTED MEASURE DATA

Trends in Access

Access

Graph 1.

No change overall: 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 needed, 2002-2014

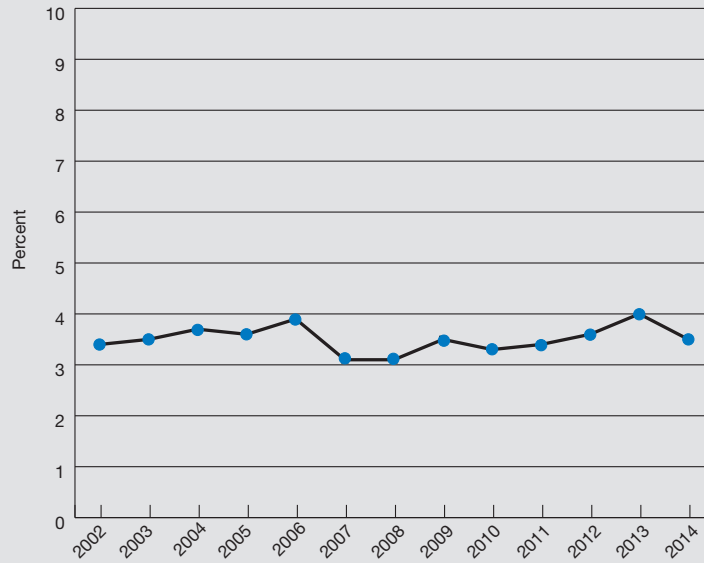


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2014.

Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

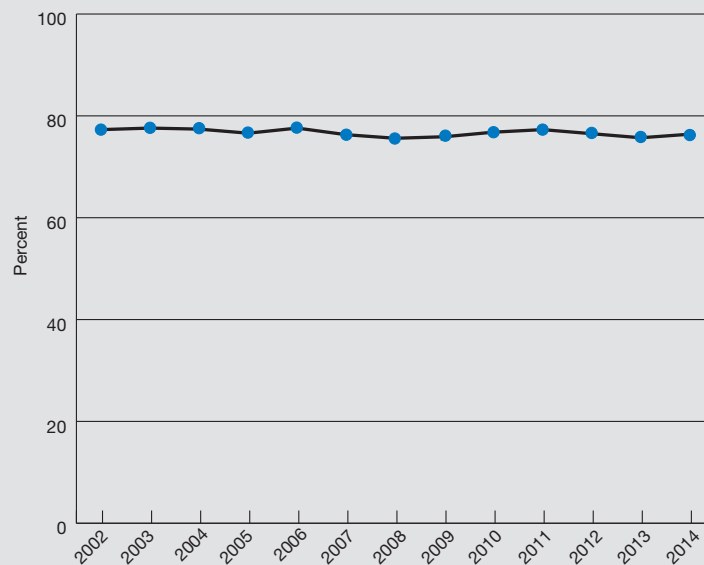
No change overall: People who were unable to get or delayed in getting needed prescription medicines in the last 12 months, 2002-2014



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2014.

Note: For this measure, lower rates are better.

No change overall: People with a usual primary care provider, 2002-2014



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2014.

Note: For this measure, lower rates are better.

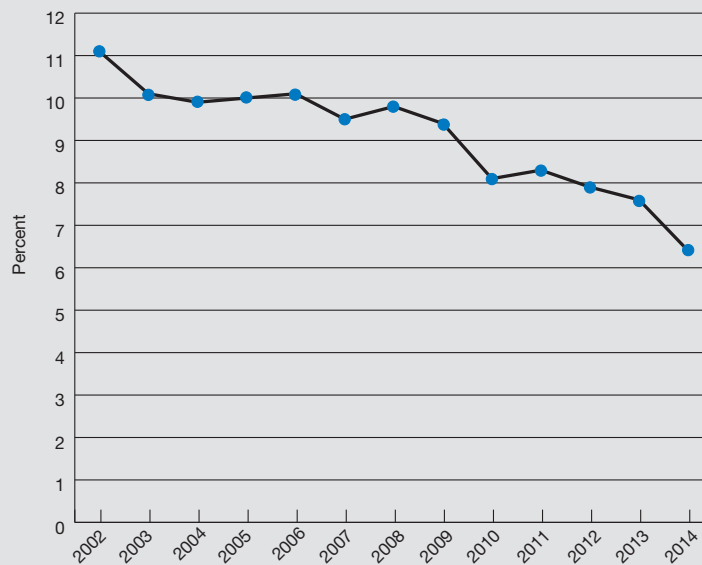
APPENDIX A. SELECTED MEASURE DATA

Trends in Quality

Person-Centered Care

Graph 2.

Improving overall: National composite measure: Adults who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never listened carefully, explained things clearly, respected what they had to say, and spent enough time with them, 2002-2014

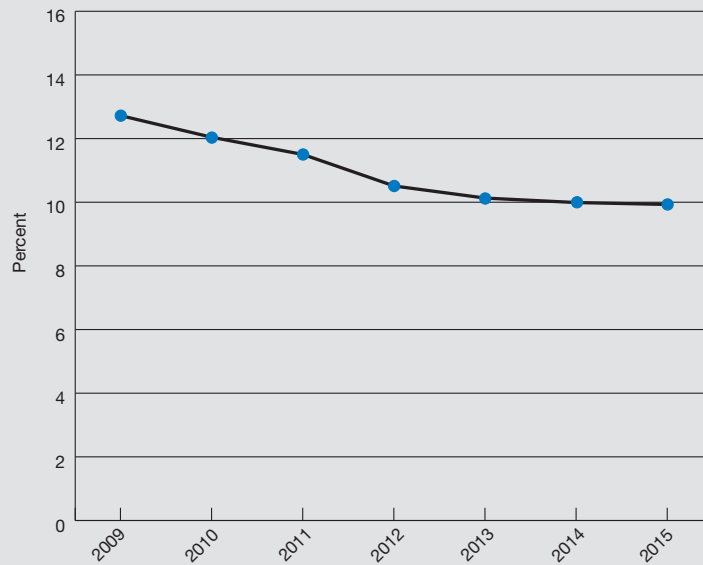


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2014.

Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

Improving overall: Adult hospital patients who sometimes or never had good communication about medications they received in the hospital, 2009-2015



Source: Centers for Medicare & Medicaid Services, Hospital Consumer Assessment of Healthcare Providers and Systems, 2009-2015.

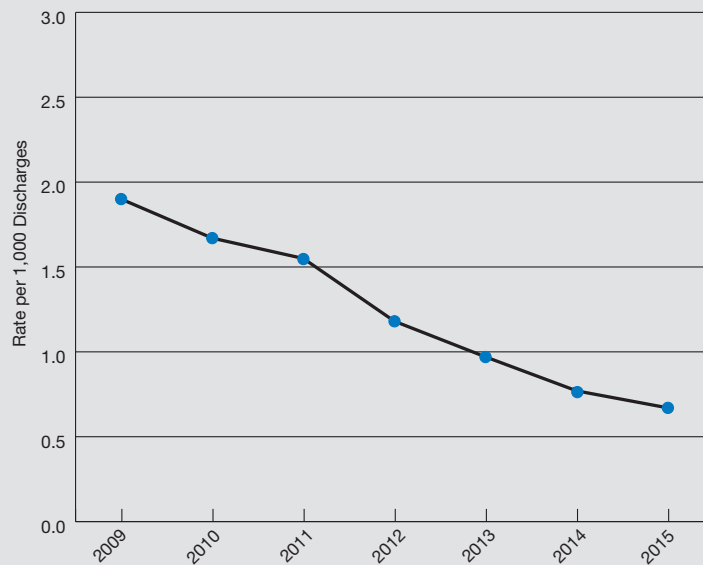
Note: For this measure, lower rates are better. Good communication about medications means hospital staff explained clearly about effects and possible side effects of medications.

APPENDIX A. SELECTED MEASURE DATA

Patient Safety

Graph 3.

Improving overall: Hospital admissions with central venous catheter-related bloodstream infection per 1,000 medical and surgical discharges of length 2 or more days, age 18 and over

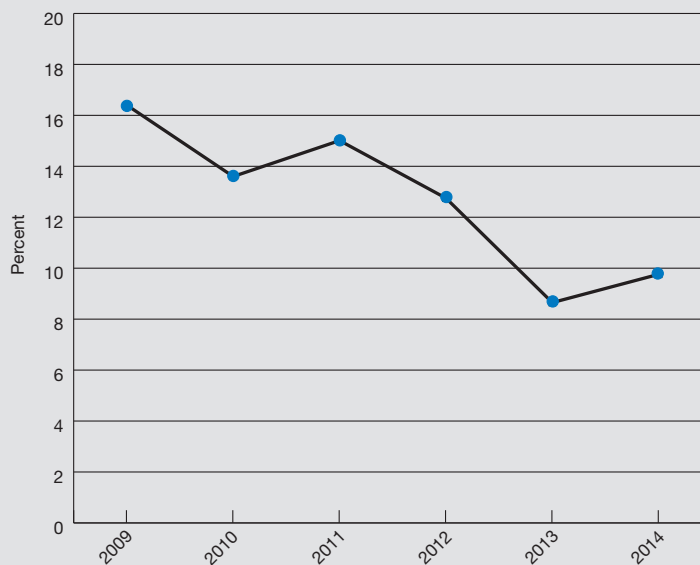


Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2008-2011; State Inpatient Databases (SID), 2012-2014, weighted to provide national estimates using the same methodology as the 2008-2011 NIS; and AHRQ Quality Indicators (QIs), version 4.4. For more information on the sampling approach and included states, see the HCUP Methods Series Report on methods applying AHRQ QIs to HCUP data for the 2015 QDR (www.hcup-us.ahrq.gov/reports/methods/methods.jsp).

Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

Improving overall: Adult patients receiving hip joint replacement due to fracture with adverse events, age 18 and over, overall



Source: Agency for Healthcare Research and Quality and Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System, 2009-2014.

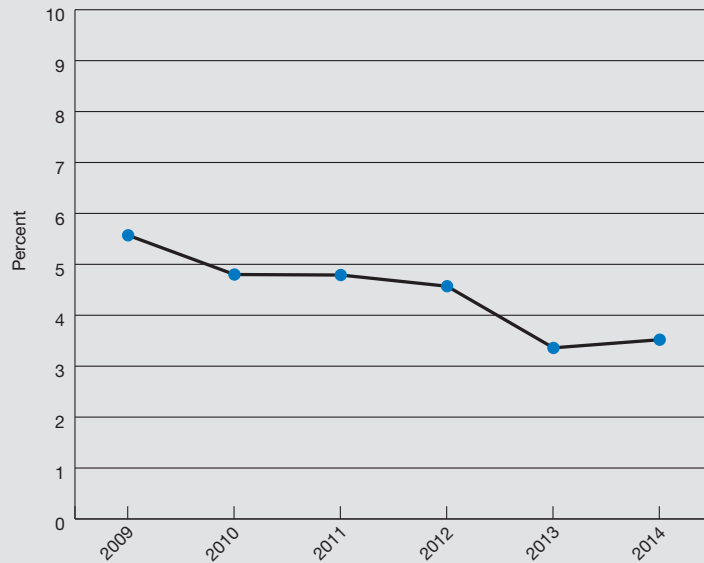
Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

Patient Safety

Graph 4.

Improving overall: Hospital patients with an anticoagulant-related adverse drug event to low-molecular-weight heparin (LMWH) and factor Xa, age 18 and over, 2009-2014



Source: Agency for Healthcare Research and Quality and Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System, 2009-2014.

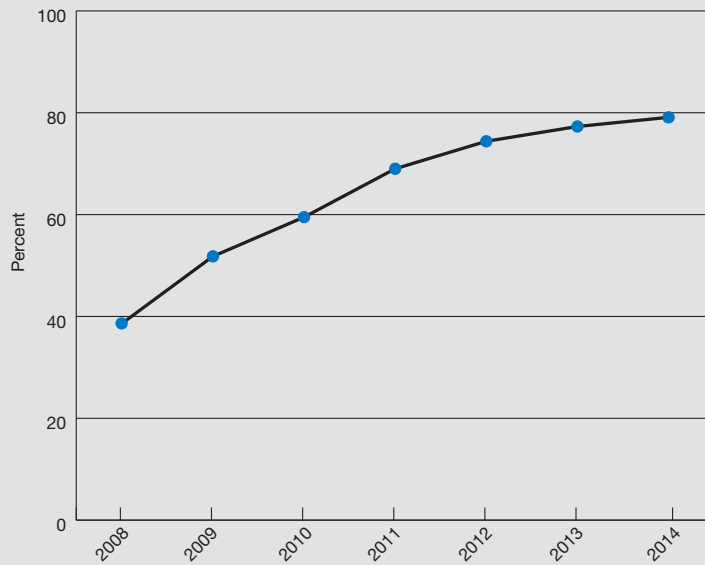
Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

Healthy Living

Graph 5.

Improving overall: Adolescents ages 16-17 years who received 1 or more doses of meningococcal conjugate vaccine, 2008-2014

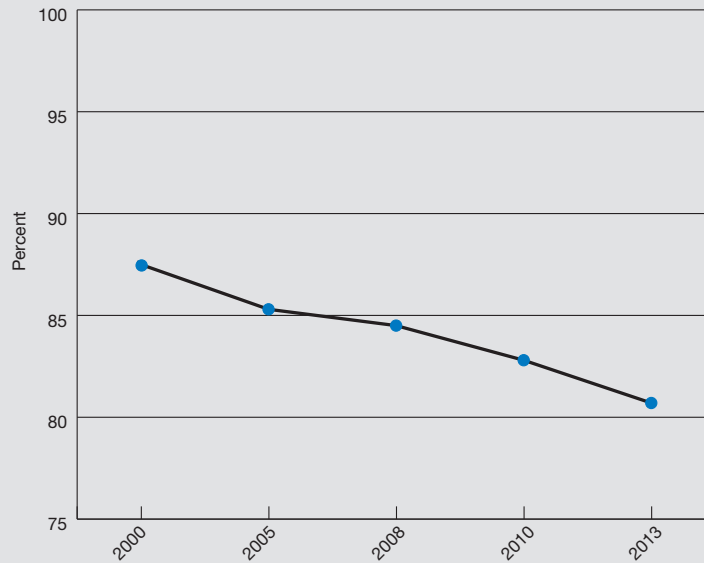


Source: Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases and National Center for Health Statistics, National Immunization Survey – Teen, 2008-2014.

APPENDIX A. SELECTED MEASURE DATA

Graph 6.

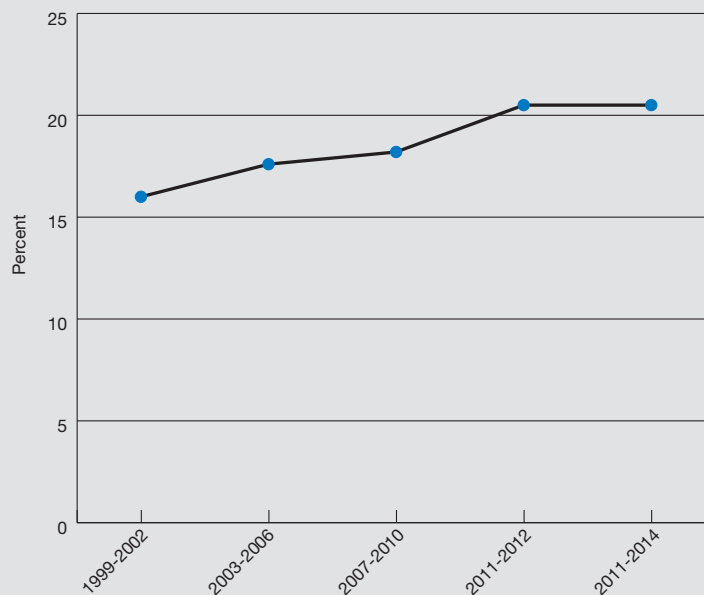
Worsening overall: Women ages 21-65 who received a Pap smear in the last 3 years



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2000-2013.

Note: Estimates are age adjusted to the 2000 U.S. standard population.

Worsening overall: Children ages 12-19 with obesity, 1999-2002 to 2011-2014



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey, 1999-2002 to 2011-2014.

Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

Other Priority Areas

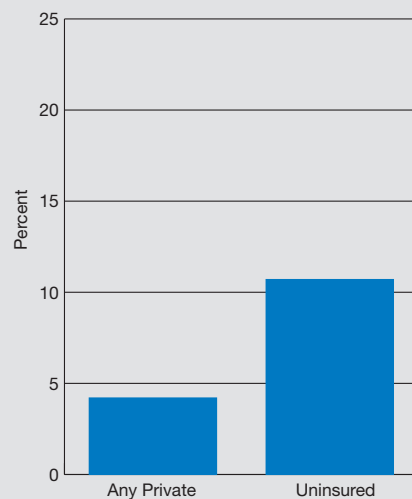
Effective Treatment is addressed in Graphs 15 and 16, under Geographic Differences. Care Coordination and Care Affordability are addressed under Trends in Disparities and under Geographic Differences.

Trends in Disparities

Person-Centered Care

Graph 7.

Improving overall: National: Adults ages 18-64 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 had to say, by insurance, 2014

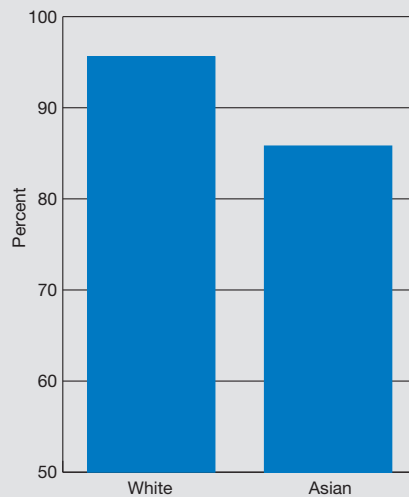


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2014.

Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

Large disparities: Hospice patients who received care consistent with their stated end-of-life wishes, by race, 2014

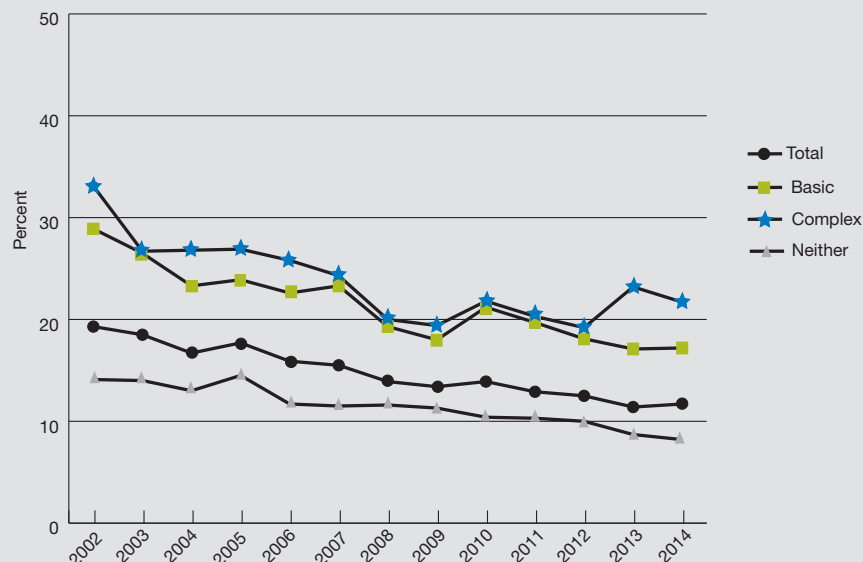


Source: National Hospice and Palliative Care Organization, Family Evaluation of Hospice Care Survey, 2014.

Patient Safety

Graph 8.

Adults age 65 and over who received in the calendar year at least 1 of 33 potentially inappropriate prescription medications for older adults, by activity limitation, 2002-2014

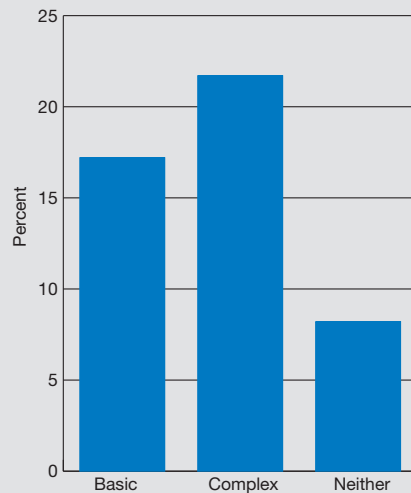


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2014.

Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

Large disparities: Adults age 65 and over who received in the calendar year at least 1 of 33 potentially inappropriate prescription medications for older adults, by activity limitation, 2014



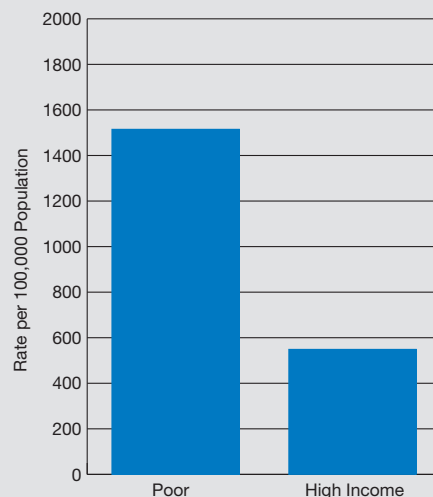
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2014.

Note: For this measure, lower rates are better.

Care Coordination

Graph 9.

Large disparities: Emergency department visits for asthma, per 100,000 population (including inpatient admissions), ages 2-17, by income, 2014

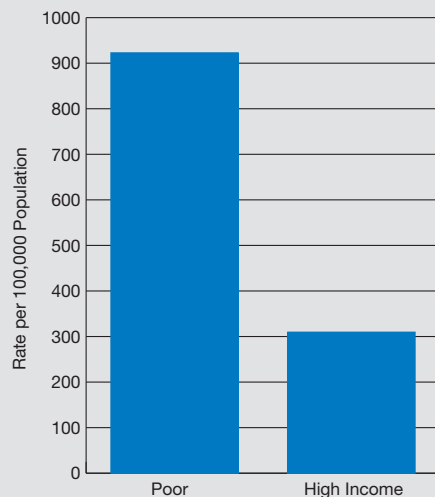


Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2014.

Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

Large disparities: Emergency department visits for asthma, per 100,000 population (including inpatient admissions), ages 18-39, by income, 2014



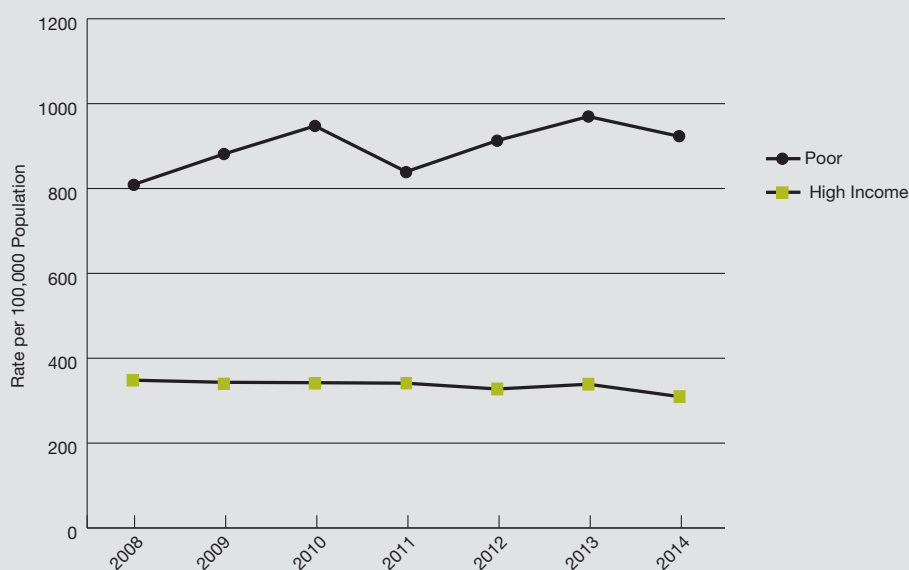
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2014.

Note: For this measure, lower rates are better.

Care Coordination

Graph 10.

Emergency department visits for asthma, per 100,000 population (including inpatient admissions), ages 18-39, by income, 2008-2014



Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2008-2014.

Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

Emergency department visits for asthma, per 100,000 population (including inpatient admissions), ages 2-17, by income, 2008-2014



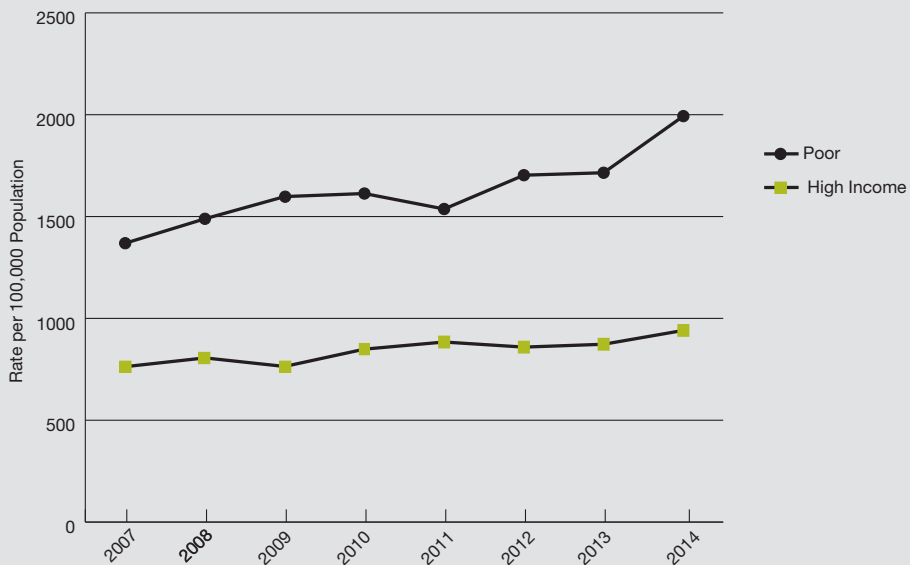
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2008-2014.

Note: For this measure, lower rates are better.

Care Coordination

Graph 11.

Emergency department visits with a principal diagnosis related to mental health only, by income, 2007-2014

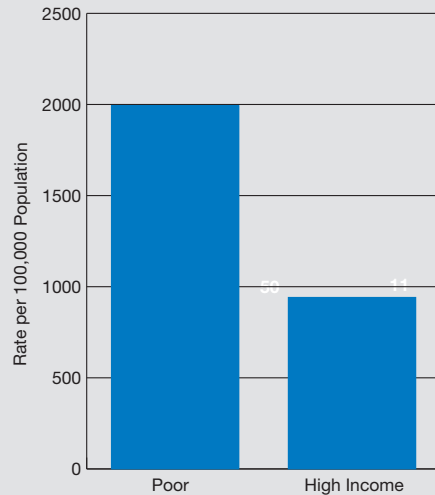


Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2007-2014

Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

Large disparities: Emergency department visits with a principal diagnosis related to mental health only, by income, 2014



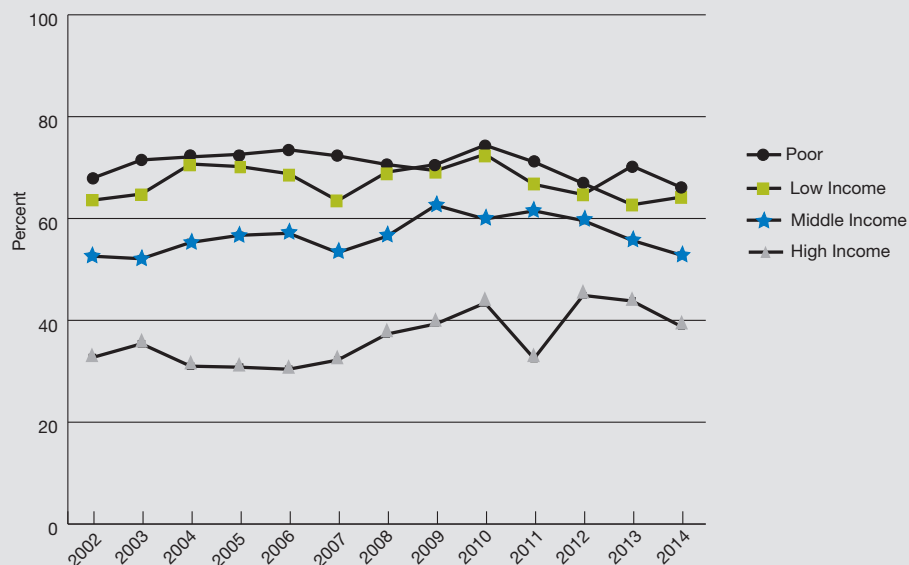
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2014.

Note: For this measure, lower rates are better.

Care Affordability

Graph 12.

People unable to get or delayed in getting needed medical care who said it was due to financial or insurance reasons, by income, 2002-2014

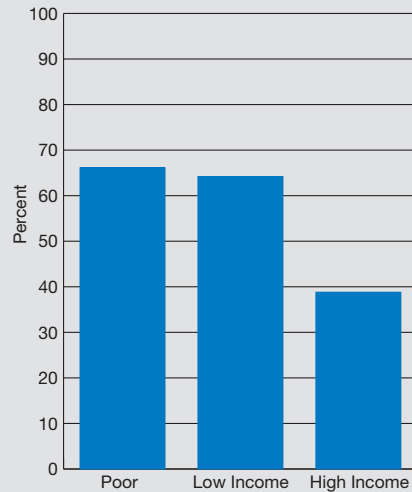


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2014.

Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

Large disparities: People unable to get or delayed in getting needed medical care who said it was due to financial or insurance reasons, by income, 2014



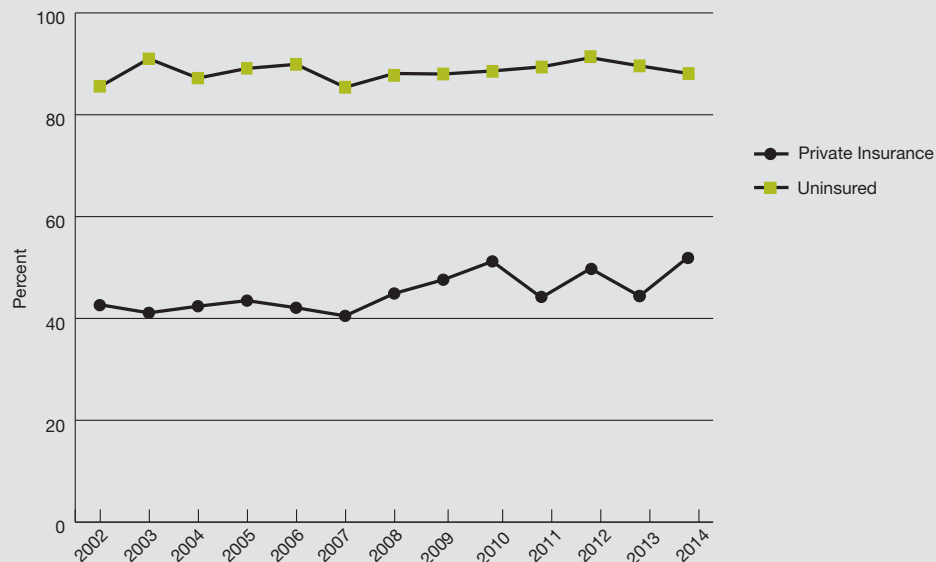
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2014.

Note: For this measure, lower rates are better.

Care Affordability

People unable to get or delayed in getting needed medical care who said it was due to financial or insurance reasons, by insurance, 2002-2014

Graph 13.

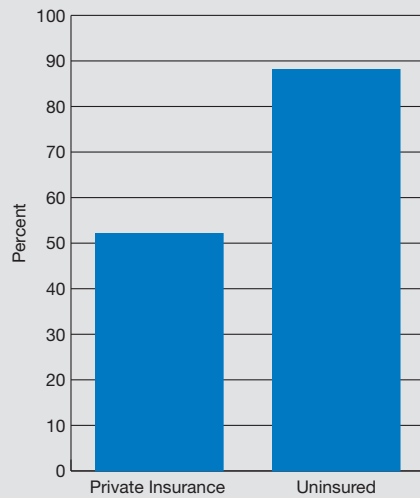


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2014.

Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

Large disparities: People unable to get or delayed in getting needed medical care who said it was due to financial or insurance reasons, by insurance, 2014



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2014.

Note: For this measure, lower rates are better.

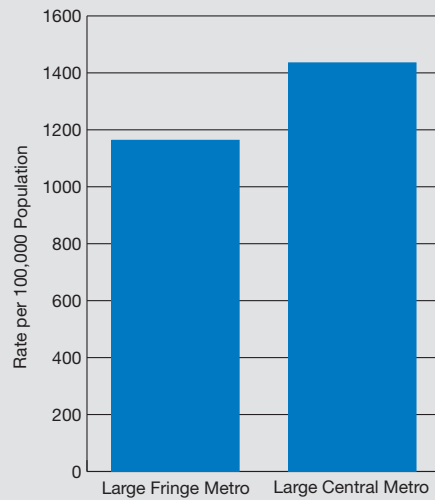
APPENDIX A. SELECTED MEASURE DATA

Geographic Differences

Care Coordination

Graph 14.

Large disparities: Emergency department visits with a principal diagnosis related to mental health only, per 100,000 population, by residence location, 2014



Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2014.

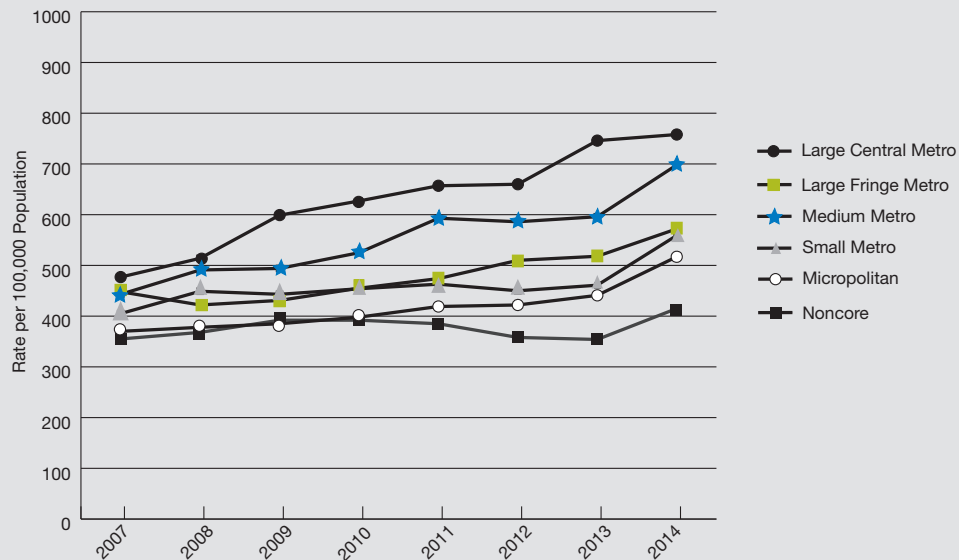
Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

Care Coordination

Graph 15.

Emergency department visits with a principal diagnosis related to substance abuse only, per 100,000 population, by residence location, 2007-2014

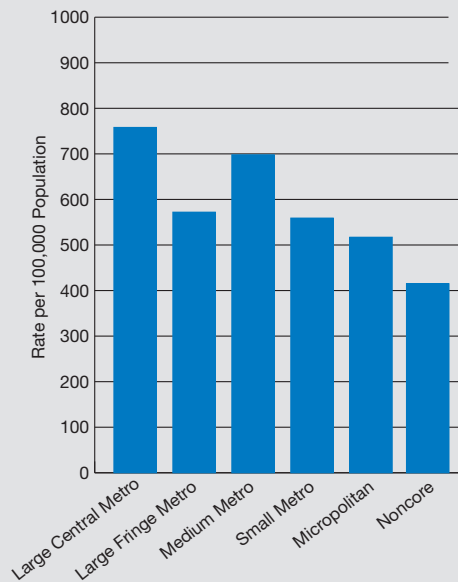


Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2007-2014.

Note: For this measure, lower rates are better.

APPENDIX A. SELECTED MEASURE DATA

Emergency department visits with a principal diagnosis related to substance abuse only, per 100,000 population, by residence location, 2014



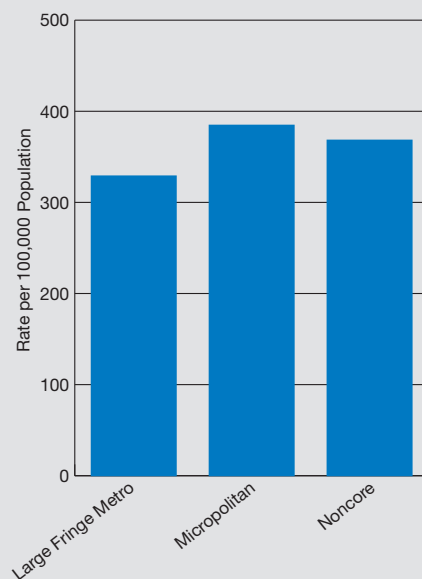
Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project, State Inpatient Databases, 2014; and AHRQ Quality Indicators, modified version 4.1.

Note: For this measure, lower rates are better.

Effective Treatment

Graph 16

Large disparities: Hospital admissions for congestive heart failure, per 100,000 population, by residence location, 2014



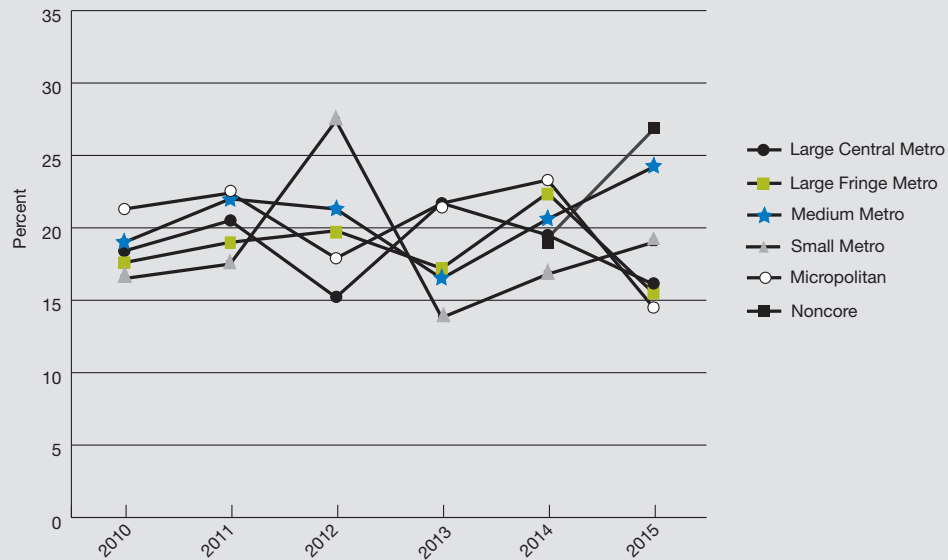
Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), National Inpatient Sample (NIS), 2014 and AHRQ Quality Indicators, version 4.4.

APPENDIX A. SELECTED MEASURE DATA

Effective Treatment

Graph 17

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, 2010-2015

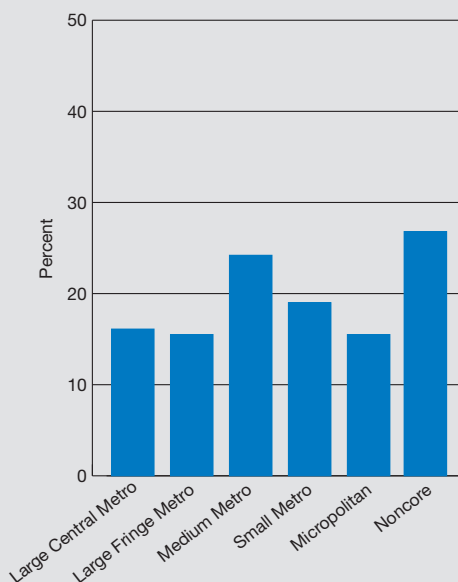


Source: Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2010-2015.

Note: Data unavailable for 2010, 2012, and 2013 for noncore.

APPENDIX A. SELECTED MEASURE DATA

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, 2015

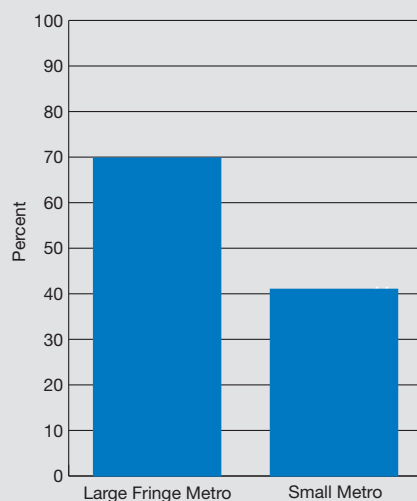


Source: Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2015.

Care Affordability

Graph 18

National: People unable to get or delayed in getting needed prescription medicines who said it was due to financial or insurance reasons, 2014



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2014.

APPENDIX B SUMMARY. TRENDS IN ACCESS, QUALITY, AND DISPARITIES FOR MEASURES IN 2016 REPORT

Due to its length, Appendix B is not included in the print version of the report.

Appendix B is available online at https://www.ahrq.gov/research/findings/nhqdr/nhqdr16/appendixb1_accesstrends.html and has the following sections:

1. Trends in Access Measures
2. Quality of Health Care Through 2014 by Priority Area
3. Access Disparities by Income, Ethnicity, and Race
4. Quality Disparities by Income, Ethnicity, and Race
5. Changes in Disparities Through 2014 by Income, Ethnicity, and Race
6. Access and Quality Disparities by Geographic Location



APPENDIX C: DATA SOURCES USED FOR 2016 REPORT

The *National Healthcare Quality and Disparities Report* is a comprehensive national overview of quality of health care in the United States. The report also examines disparities in health care among priority populations, such as racial and ethnic minority groups. The report is compiled from multiple federal, state, and private data sources, including databases and surveys.

Federal Sources of Data

Agency for Healthcare Research and Quality

- ◆ Healthcare Cost and Utilization Project (HCUP) (see next page for details)
- ◆ Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)
- ◆ Home Health Consumer Assessment of Healthcare Providers and Systems (HHCAHPS)
- ◆ Medical Expenditure Panel Survey (MEPS)
- ◆ National CAHPS® Benchmarking Database (NCBD) – Health Plan Survey Database

Centers for Disease Control and Prevention

- ◆ Behavioral Risk Factor Surveillance System (BRFSS)
- ◆ National Ambulatory Medical Care Survey (NAMCS)
- ◆ National Health and Nutrition Examination Survey (NHANES)
- ◆ National Health Interview Survey (NHIS)
- ◆ National HIV Surveillance System (NHSS)
- ◆ National Hospital Ambulatory Medical Care Survey (NHAMCS)
- ◆ National Immunization Survey (NIS)
- ◆ National Program of Cancer Registries (NPCR)
- ◆ National Tuberculosis Surveillance System (NTSS)
- ◆ National Vital Statistics System—Linked Birth and Infant Death Data (NVSS-L)
- ◆ National Vital Statistics System—Mortality (NVSS-M)
- ◆ National Vital Statistics System—Natality (NVSS-N)

Centers for Medicare & Medicaid Services

- ◆ Hospital Inpatient Quality Reporting (HIQR) Program

Health Resources and Services Administration

- ◆ Uniform Data System (UDS)
- ◆ HIV/AIDS Bureau - Ryan White HIV/AIDS Program

Indian Health Service

- ◆ Indian Health Service National Data Warehouse (NDW)

National Institutes of Health

- ◆ United States Renal Data System (USRDS)

Substance Abuse and Mental Health Services Administration

- ◆ National Survey on Drug Use and Health (NSDUH)
- ◆ Substance Use Disorder Treatment Episode Data Set (TEDS)

Multi-Agency Data Sources

- ◆ Medicare Patient Safety Monitoring System (MPSMS)

Academic Institutions

University of Michigan

- ◆ University of Michigan Kidney Epidemiology and Cost Center (UMKECC)

Professional Organizations and Associations

American Hospital Association

- ◆ American Hospital Association Annual Survey Information Technology Supplement

Commission on Cancer and American Cancer Society

- ◆ National Cancer Data Base (NCDB)

Additional Information on Agency for Healthcare Research and Quality HCUP Partners

The State Inpatient Databases (SID) disparities analysis file was created from SID data to provide national estimates for the QDR. It consists of weighted records from a sample of hospitals from the following 36 States participating in the Healthcare Cost and Utilization Project (HCUP) that have high-quality race/ethnicity data: AR, AZ, CA, CO, CT, DC, FL, GA, HI, IA, IL, IN, KS, KY, MD, MI, MO, NC, NJ, NM, NV, NY, OK, OR, PA, RI, SC, SD, TN, TX, VA, VT, WA, WI, WV, and WY.

In 2014, the 36 States accounted for 80 percent of U.S. discharges from community, nonrehabilitation hospitals (based on the American Hospital Association Annual Survey). A full list of HCUP partners appears below, including States that are not part of the disparities analysis file.

Sources of HCUP Data

- ◆ Alaska Department of Health and Social Services
- ◆ Alaska State Hospital and Nursing Home Association
- ◆ Arizona Department of Health Services
- ◆ Arkansas Department of Health
- ◆ California Office of Statewide Health Planning and Development
- ◆ Colorado Hospital Association
- ◆ Connecticut Hospital Association
- ◆ District of Columbia Hospital Association
- ◆ Florida Agency for Health Care Administration
- ◆ Georgia Hospital Association
- ◆ Hawaii Health Information Corporation
- ◆ Illinois Department of Public Health
- ◆ Indiana Hospital Association
- ◆ Iowa Hospital Association
- ◆ Kansas Hospital Association
- ◆ Kentucky Cabinet for Health and Family Services
- ◆ Louisiana Department of Health
- ◆ Maine Health Data Organization
- ◆ Maryland Health Services Cost Review Commission
- ◆ Massachusetts Center for Health Information and Analysis
- ◆ Michigan Health & Hospital Association
- ◆ Minnesota Hospital Association
- ◆ Mississippi State Department of Health
- ◆ Missouri Hospital Industry Data Institute
- ◆ Montana Hospital Association
- ◆ Nebraska Hospital Association
- ◆ Nevada Department of Health and Human Services
- ◆ New Hampshire Department of Health & Human Services

- ◆ New Jersey Department of Health
- ◆ New Mexico Department of Health
- ◆ New York State Department of Health
- ◆ North Carolina Department of Health and Human Services
- ◆ North Dakota (data provided by the Minnesota Hospital Association)
- ◆ Ohio Hospital Association
- ◆ Oklahoma State Department of Health
- ◆ Oregon Association of Hospitals and Health Systems
- ◆ Oregon Office of Health Analytics
- ◆ Pennsylvania Health Care Cost Containment Council
- ◆ Rhode Island Department of Health
- ◆ South Carolina Revenue and Fiscal Affairs Office
- ◆ South Dakota Association of Healthcare Organizations
- ◆ Tennessee Hospital Association
- ◆ Texas Department of State Health Services
- ◆ Utah Department of Health
- ◆ Vermont Association of Hospitals and Health Systems
- ◆ Virginia Health Information
- ◆ Washington State Department of Health
- ◆ West Virginia Health Care Authority
- ◆ Wisconsin Department of Health Services
- ◆ Wyoming Hospital Association

APPENDIX D: DEFINITIONS USED IN 2016 REPORT

Racial and Ethnic Groups

Racial and ethnic groups are defined according to Standards for the Classification of Federal Data on Race and Ethnicity, issued by the Office of Management and Budget (available at <https://www.gpo.gov/fdsys/granule/FR-1997-10-30/97-28653>).

The basic racial and ethnic categories for federal statistics and program administrative reporting are defined as follows:

1. American Indian or Alaska Native. A person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment.
2. Asian. A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent, including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam..
3. Black or African American. A person having origins in any of the black racial groups of Africa. Terms such as “Haitian” or “Negro” can be used in addition to “Black or African American.”
4. Hispanic or Latino. A person of Cuban, Mexican, Puerto Rican, Central or South American, or other Spanish culture or origin, regardless of race. The term “Spanish origin” can be used in addition to “Hispanic or Latino.”
5. Native Hawaiian or Other Pacific Islander. A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.
6. White. A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.

Income

Income groups are based on the Federal Poverty Level (FPL) for a family of four:

- ◆ Poor: Less than 100% of FPL
- ◆ Low income: 100% to less than 200% of FPL
- ◆ Middle income: 200% to less than 400% of FPL
- ◆ High income: 400% or more of FPL

The poverty guidelines are available at <https://aspe.hhs.gov/poverty-guidelines>.

Urban-Rural Areas

Urban and rural areas are defined based on the National Center for Health Statistics 2013 Urban-Rural Classification Scheme.

- ◆ Metropolitan counties:
 - » Large central metro counties in metropolitan statistical area (MSA) of 1 million population that: (1) contain the entire population of the largest principal city of the MSA, or (2) are completely contained within the largest principal city of the MSA, or (3) contain at least 250,000 residents of any principal city in the MSA
 - » Large fringe metro counties in MSA of 1 million or more population that do not qualify as large central
 - » Medium metro counties in MSA of 250,000-999,999 population
 - » Small metro counties in MSAs of less than 250,000 population
- ◆ Nonmetropolitan counties:
 - » Micropolitan: Urban cluster population 10,000-49,999
 - » Noncore: Nonmetropolitan counties that did not qualify as micropolitan

More information, including a map showing county classifications, is available at https://www.cdc.gov/nchs/data_access/urban_rural.htm.

Activity Limitations

Activity limitations are classified as basic, complex, and neither:

- ◆ Basic activity limitations include problems with mobility, self-care (activities of daily living), domestic life (instrumental activities of daily living), and activities that depend on sensory functioning (limited to people who are blind or deaf).
- ◆ Complex activity limitations include limitations experienced in work and in community, social, and civic life. For the purpose of the QDR, adults with disabilities are those with physical, sensory, and/or mental health conditions that can be associated with a decrease in functioning in such day-to-day activities as bathing, walking, doing everyday chores, and engaging in work or social activities.

The paired measure is intended to be consistent with statutory definitions of disability, such as the first criterion of the 1990 Americans With Disabilities Act and other federal program definitions of disability. The category “neither” refers to individuals with neither basic nor complex activity limitations, as defined here.



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