

2019 NATIONAL HEALTHCARE QUALITY & DISPARITIES REPORT



This document is in the public domain and may be used and reprinted without permission. Citation of the source is appreciated. Suggested citation: 2019 National Healthcare Quality and Disparities Report. Rockville, MD: Agency for Healthcare Research and Quality; December 2020. AHRQ Pub. No. 20(21)-0045-EF.

2019 NATIONAL HEALTHCARE QUALITY AND DISPARITIES REPORT

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

Agency for Healthcare Research and Quality

5600 Fishers Lane

Rockville, MD 20857

www.ahrq.gov

AHRQ Publication 20(21)-0045-EF

December 2020

www.ahrq.gov/research/findings/nhqrdr/index.html



ACKNOWLEDGMENTS

The National Healthcare Quality and Disparities Report (NHQDR) is the product of collaboration among agencies from the U.S. Department of Health and Human Services (HHS), other federal departments, and the private sector. Many individuals guided and contributed to this effort. Without their magnanimous support, the report would not have been possible. Specifically, we thank:

Primary AHRQ Staff: Gopal Khanna, David Meyers, Virginia Mackay-Smith, Jeff Brady, Erin Grace, Karen Chaves, Darryl Gray, Barbara Barton, Doreen Bonnett, Irin Azam, and Cecilia Hahn.

HHS Interagency Workgroup (IWG) for the NHQDR: Girma Alemu (HRSA), Irin Azam (AHRQ), Andreea Balan-Cohen (IMPAQ), Barbara Barton (AHRQ), Doreen Bonnett (AHRQ), Deron Burton (CDC), Victoria Chau (SAMHSA), Karen Chaves (AHRQ), Xiuhua Chen (Atlas Research), Deborah Duran (NIH-NIMHD), Melissa Evans (CMS), Camille Fabiyi (AHRQ), Paul Gorrell (Atlas Research), Darryl Gray (AHRQ), Kirk Greenway (IHS), Sarah Heppner (HRSA), Ed Huff (CMS), DeLoris Hunter (NIH-NIMHD), Susan Jenkins (ACL), Christine Lee (FDA), Doris Lefkowitz (AHRQ), Jesse Lichstein (HRSA), Lan Liang (AHRQ), Shari Ling (CMS), Iris Mabry-Hernandez (AHRQ), Marlene Matosky (HRSA), Tracy Matthews (HRSA), Christine Merenda (FDA), Kamila Mistry (AHRQ), Ernest Moy (VHA), Samia Noursi (NIH-NIDA), Kathy O'Connor (CDC), Rajasri Roy (NIH-OD-ORWH), Dianne Rucinski (OASH), Asel Ryskulova (CDC), Adelle Simmons (ASPE), Robin Streeter (HRSA), Loida Tamayo (CMS), Caroline Taplin (ASPE), Emmanuel Taylor (NIH-NCI), Michelle Washko (HRSA), and Ying Zhang (IHS).

IWG Subgroup – Access to Care: Karen Chaves (Chair), Girma Alemu (HRSA), Robin Cohen (CDC), Kirk Greenway (IHS), Lan Liang (AHRQ), Pradip Muhuri (AHRQ), Barbara Barton (AHRQ).

NHQDR Team: Irin Azam (CQuIPS), Barbara Barton (CQuIPS), Doreen Bonnett (OC), Xiuhua Chen (Atlas Research), James Cleeman (CQuIPS), Noel Eldridge (CQuIPS), Camille Fabiyi (OEREP), Paul Gorrell (Atlas Research), Erin Grace (CQuIPS), Darryl Gray (CQuIPS), Lan Liang (CFACT), Kamila Mistry (OEREP), Margie Shofer (CQuIPS).

HHS Data Experts: Cuong Bui (HRSA), Lara Bull (CDC), Robin Cohen (CDC-NCHS), Joann Fitzell (CMS), Elizabeth Goldstein (CMS), Irene Hall (CDC-HIV), Norma Harris (CDC-HIV), Pradip Muhuri (AHRQ), Jessica King (NPCR), Amanda Lankford (CDC), Denys Lau (CDC-NCHS), Lan Liang (AHRQ), Sharon Liu (SAMHSA), Marlene Matosky (HRSA), Tracy Matthews (HRSA), Robert Morgan (CMS), Richard Moser (NIH-NCI), Kathy O'Connor (CDC-NCHS), Robert Pratt (CDC), Neil Russell (SAMHSA), Asel Ryskulova (CDC-NCHS), Alek Sripipatana (HRSA), Reda Wilson (CDC- NCCDPHP-ONDIEH), Emily Zammiti (CDC-NCHS), and Xiaohong (Julia) Zhu (HRSA).

Other Data Experts: Mark Cohen (ACS NSQIP), Ashley Eckard (University of Michigan), Sheila Eckenrode (MPSMS-Qualidigm), Michael Halpern (American Cancer Society), Clifford Ko (ACS NSQIP), Vivian Kurtz (University of Michigan), Robin Padilla (University of Michigan KECC), Bryan Palis (NCDB, American College of Surgeons), and Yun Wang (MPSMS-Qualidigm).

Other AHRQ Contributors: Cindy Brach, Edwin Lomotan, Karen Migdail, Pamela Owens, Wendy Perry, Mary Rolston, Bruce Seeman, Randie Siegel, and Michele Valentine.

Data Support Contractors: Atlas Research, IMPAQ International.

CONTENTS

EXECUTIVE SUMMARY	ES1
Key Findings	ES1
About the National Healthcare Quality and Disparities Report.....	ES2
Social Determinants of Health	ES3
Reference	ES3
OVERVIEW OF U.S. HEALTHCARE SYSTEM LANDSCAPE.....	O1
Overview of the U.S. Healthcare System infrastructure.....	O1
Overview of Disease Burden in the United States	O3
Overview of U.S. Community Hospitals	O5
U.S. Healthcare Workforce.....	O8
Overview of Healthcare Costs in the United States	O29
Variation in Healthcare Quality	O33
ACCESS TO HEALTHCARE AND DISPARITIES IN ACCESS	A1
Health Insurance	A4
Usual Source of Care	A14
Timely Access to Care	A16
Perception of Need	A17
Snapshot of Disparities in Access to Care	A21
QUALITY IN HEALTHCARE.....	Q1
Trends in Quality	Q2
Trends in Person-Centered Care	Q3
Trends in Patient Safety	Q12
Trends in Care Coordination.....	Q22
Trends in Affordable Care	Q33
Trends in Effective Treatment	Q38
Trends in Healthy Living.....	Q51
DISPARITIES IN HEALTHCARE.....	D1
Research Framework for Health Disparities	D1
Role of Research Framework in the NHQDR	D2
Racial and Ethnic Disparities	D3
Overview of Racial and Ethnic Disparities.....	D5
Disparities for Blacks.....	D7
Disparities for Asians	D17
Disparities for American Indians and Alaska Natives	D25
Disparities for Native Hawaiians and Pacific Islanders	D33
Disparities for Hispanics	D40
Disparities by Income.....	D48

Disparities by Insurance Status.....	D62
Disparities by Residence Location	D73
LOOKING FORWARD	L1
Opportunities for Measurement	L1
Notable Examples of Collaboration for Healthcare Quality	L1
Top Priorities and Tasks at HHS.....	L3
Future Research and Work	L7
REFERENCES	R1

Appendixes

APPENDIX A. DATA SOURCES USED FOR 2019 REPORT.....	APA1
APPENDIX B. DEFINITIONS AND ABBREVIATIONS USED IN 2019 REPORT.....	APB1

EXECUTIVE SUMMARY

Key Findings

- **Access:** From 2000 through 2016-2018, more than half (11 of 20) of access measures showed improvement, 25% (5 of 20) did not show improvement, and 20% (4 of 20) showed worsening. For example, there were significant gains in the percentage of people who reported having health insurance.
- **Quality:** Quality of healthcare improved overall from 2000 through 2018, but the pace of improvement varied by priority area:
 - **Person-Centered Care:** Almost half (14 of 29) of person-centered care measures were improving overall.
 - **Patient Safety:** Nearly half (12 of 26) of patient safety measures were improving overall.
 - **Healthy Living:** Almost 60% (41 of 70) of healthy living measures were improving overall.
 - **Effective Treatment:** More than 40% (15 of 36) of effective treatment measures were improving overall.
 - **Care Coordination:** Nearly 40% (3 of 8) of care coordination measures were improving overall.
 - **Care Affordability:** Forty percent (2 of 5) of affordable care measures were improving overall.
- **Disparities:** Overall, some disparities were getting smaller from 2000 through 2016-2018, but disparities persist and some even worsened, especially for poorⁱ and uninsured populations in all priority areas.
 - Racial and ethnic disparities vary by group:
 - ♦ For about 40% of quality measures, Blacks (82 of 202) and American Indians and Alaska Natives (47 of 116) received worse care than Whites. For more than one-third of quality measures, Hispanics (61 of 177) received worse care than Whites.
 - ♦ For nearly 30% of quality measures, Asians (52 of 185) received worse care than Whites, but Asians received better care than Whites for nearly one-third (56 of 185) of quality measures.

ⁱ Poor is defined as having family income below 100% of the federal poverty level (FPL).

- ♦ For one-third of quality measures, Native Hawaiians/Pacific Islanders (24 of 72) received worse care than Whites.
- Disparities vary by residence location:
 - ♦ For nearly a quarter (24 of 102) of quality measures, residents of large central metropolitan areas received worse care than residents of large fringe metropolitan areas.
 - ♦ For one-third of quality measures, residents of micropolitan and noncore areas received worse care than residents of large fringe metropolitan areas.
 - ♦ For a little less than 20% of quality measures, medium and small metropolitan residents received worse care than residents of large fringe metropolitan areas.

About the National Healthcare Quality and Disparities Report

For the 17th year in a row, AHRQ is reporting on healthcare quality and disparities. The annual *National Healthcare Quality and Disparities Report* (NHQDR) is mandated by Congress to provide a comprehensive overview of the quality of healthcare 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 healthcare system and identifies areas of strength and weakness, as well as disparities, for access to healthcare and quality of healthcare. Quality measures are grouped by priority areas, including person-centered care, patient safety, healthy living, effective treatment, care coordination, and affordable care.

More than 250 measures used in these reports span a wide range of structure, process, and outcome measures for which existing national data sources can be used. This report presents selected findings in each priority area and examples of large disparities, disparities worsening over time, and disparities showing improvement. A U.S. Department of Health and Human Services (HHS) Interagency Work Group (IWG)ⁱⁱ that

ⁱⁱ Federal 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, Food and Drug Administration, Health Resources and Services Administration, Indian Health Service, National Institutes of Health, Office of the Assistant Secretary for Health, Substance Abuse and Mental Health Services Administration, and Veterans Health Administration.

supports the reports selected the measures for tracking based on their importance, scientific soundness, and feasibility.

Social Determinants of Health

Healthcare quality and delivery affect each person's healthcare outcomes, but many other factors contribute to individual health. An integral part of delivering high-quality healthcare is understanding the social determinants of health (SDOH) of patients and of communities in which healthcare is provided. The World Health Organization defines SDOH as the conditions in which people are born, grow, live, work, and age.

SDOH can be discussed in the following contexts:

- Social context (e.g., demographics, social networks and supports; social cohesion; discrimination based on race, ethnicity, religion, sex, and gender identity; community safety; criminal justice climate; civic participation).
- Economic context (e.g., employment, income, poverty).
- Education (e.g., quality of daycare, schools, and adult education; literacy and high school graduation rates; English proficiency).
- Physical infrastructure (e.g., housing, transportation, workplace safety, food availability, parks and other recreational facilities, environmental conditions, sufficiency of social services).
- Healthcare context (e.g., access to high-quality, culturally and linguistically appropriate, and health-literate care; access to insurance; healthcare laws; health promotion initiatives; supply side of services; attitudes toward healthcare; and use of services).¹

This report examines SDOH by highlighting disparities experienced by various subpopulations. Policymakers, researchers, providers, and other stakeholders can use this report's analyses to understand the outcomes for racial and ethnic, insurance, income, and residence location groups.

Reference

1. Agency for Healthcare Research and Quality. About SDOH in Healthcare. Content Last reviewed February 2020. Agency for Healthcare Research and Quality, Rockville, MD. <https://www.ahrq.gov/sdoh/about.html>. Accessed September 14, 2020.



OVERVIEW OF U.S. HEALTHCARE SYSTEM LANDSCAPE

The Institute of Medicine defines healthcare quality as “the degree to which health care services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.” Many factors contribute to the quality of care in the United States, including access to timely care, affordability of care, and use of evidence-based guidelines to drive treatment.

This section of the report highlights utilization of healthcare services, healthcare workforce, healthcare expenditures, and major contributors to morbidity and mortality. These factors help to paint an overall picture of the U.S. healthcare system and particularly areas where improvements are needed. Quality measures show whether the healthcare system is adequately addressing risk factors, diseases, and conditions that place the greatest burden on the healthcare system and if change has occurred over time.

Overview of the U.S. Healthcare System infrastructure

The NHQDR tracks care delivered by providers in many types of healthcare settings. The goal is to provide high-quality healthcare that is culturally and linguistically sensitive, patient centered, timely, affordable, well coordinated, and safe. The receipt of appropriate high-quality services and counseling about healthy lifestyles can facilitate the maintenance of well-being and functioning. In addition, social determinants of health, such as education, income, and residence location can affect access to care and quality of care.

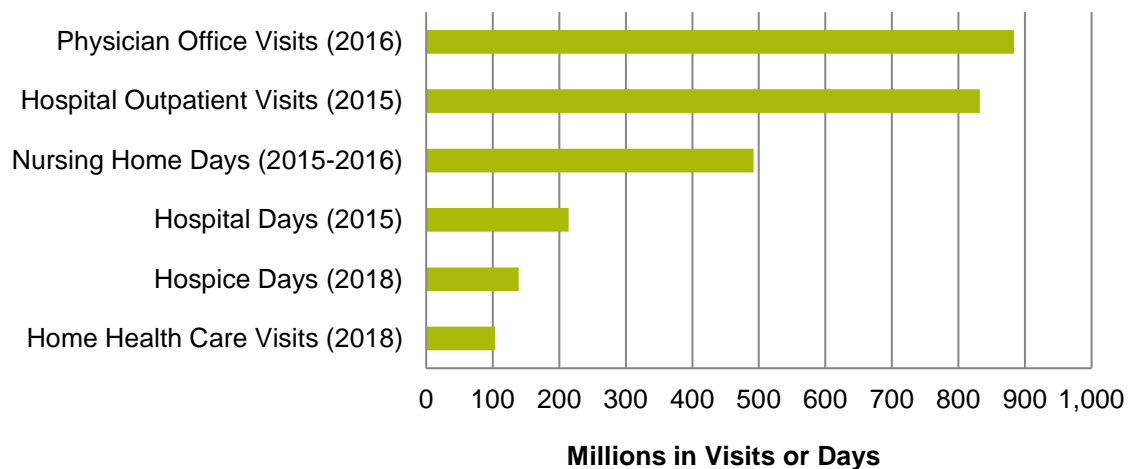
Improving care requires facility administrators and providers to work together to expand access, enhance quality, and reduce disparities. It also requires coordination between the healthcare sector and other sectors for social welfare, education, and economic development. For example, Healthy People 2030 includes 5 domains (shown in the diagram below) and 78 social determinants of health objectives for federal programs and interventions.

Exhibit 1. Healthy People 2030 social determinants of health domains



Source: Healthy People 2030, Social Determinants of Health. <https://health.gov/healthypeople/objectives-and-data/social-determinants-health>.

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

Figure 1. Number of healthcare service encounters, United States, 2015, 2016, 2018

Source: National Center for Health Statistics (NCHS), Health, United States, 2017 (<https://www.cdc.gov/nchs/data/abus/abus17.pdf>) (hospital visits and hospital days [Table 82]); National Ambulatory Medical Care Survey: 2016 National Summary Tables, Table 1 (https://www.cdc.gov/nchs/data/ahcd/namcs_summary/2016_namcs_web_tables.pdf); NCHS, Long-term care providers and services users in the United States: data from the National Study of Long-Term Care Providers, 2015-2016 (https://www.cdc.gov/nchs/data/series/sr_03/sr03_43-508.pdf) (nursing home days); Medicare Payment Advisory Commission (MedPAC), Health care spending and the Medicare Program: a data book, March 2020 (http://medpac.gov/docs/default-source/reports/mar19_medpac_entirereport_sec.pdf?sfvrsn=0) (home health [Table 9-3 and Table 9-7]) and hospice data [Table 12-4]).

- In 2016, there were 884 million physician office visits (Figure 1).
- During 2015-2016, residents spent 492 million days in nursing homes.
- In 2018, patients spent 139 million days in hospice.
- In 2018, there were 103 million home health visits.

Overview of Disease Burden in the United States

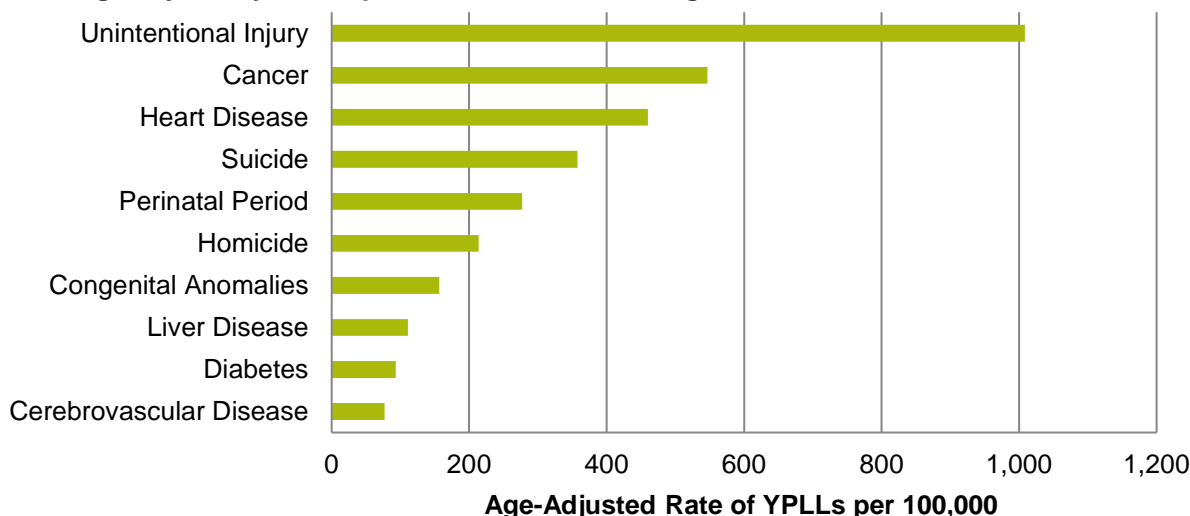
The National Institutes of Health defines disease burden as the impact of a health problem, as measured by prevalence, incidence, mortality, morbidity, extent of disability, financial cost, or other indicators. The healthcare system aims to mitigate the effects of burden caused by the leading causes of morbidity and mortality.

This section of the report highlights two areas of disease burden that have major impact on the health system of the United States: years of potential life lost and leading causes of death. Measures of quality for most of these conditions are tracked in the NHQDR. Variation in access to care and care delivery across communities contributes to disparities related to race, ethnicity, sex, and socioeconomic status.

The concept of years of potential life lost (YPLL) involves estimating the average time a person would have lived had he or she not died prematurely. This measure is used to help quantify social and economic loss owing to premature death, and it has been promoted to emphasize specific causes of death affecting younger age groups. YPLL

inherently incorporates age at death, and its calculation mathematically weights the total deaths by applying values to death at each age.¹

Figure 2. Age-adjusted years of potential life lost before age 65, United States, 2018



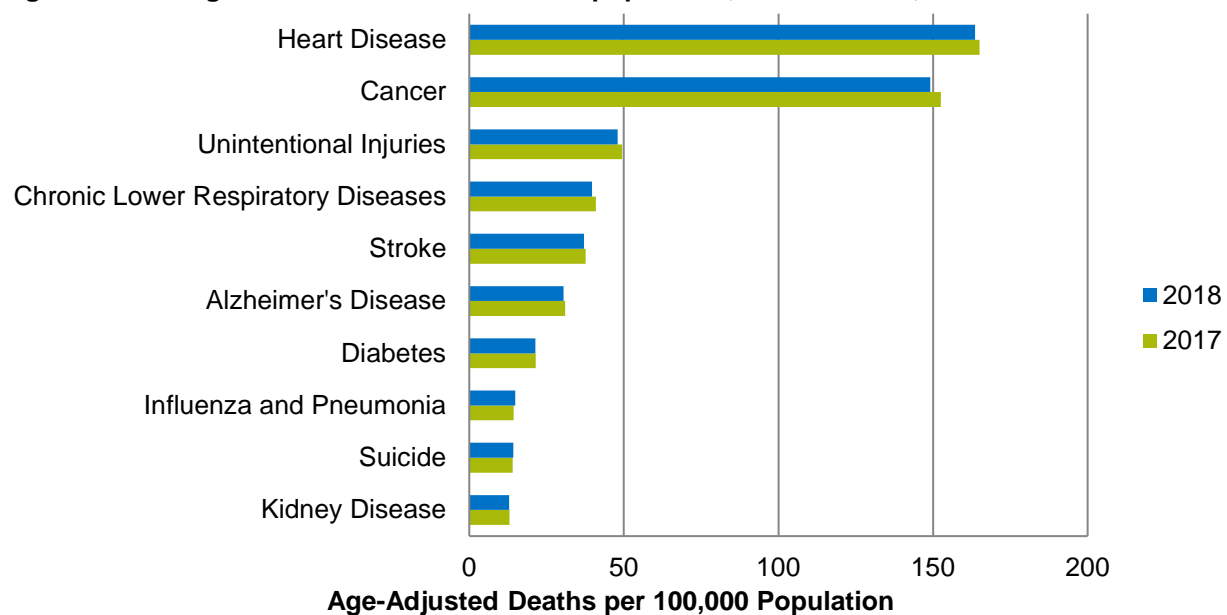
Key: YPLL = years of potential life lost.

Source: Centers for Disease Control and Prevention, [National Center for Injury Prevention and Control](https://webappa.cdc.gov/sasweb/ncipc/ypll.html), WISQARS Years of Potential Life Lost (YPLL) Report, 1981-2018. <https://webappa.cdc.gov/sasweb/ncipc/ypll.html>.

Note: The perinatal period occurs from 22 completed weeks (154 days) of gestation and ends 7 completed days after birth.¹

- From 2016 to 2018, there were no changes in the ranking of the top 10 leading diseases and injuries contributing to YPLL (Figure 2).
- The top category contributing to YPLL, unintentional injury, decreased from 1,020.8 per 100,000 population in 2016 to 1,008.5 per 100,000 population in 2018.
- In 2018, among females, unintentional injuries (593.4 per 100,000 population) were the leading contributing factor for YPLL, suicide (161.2 per 100,000 population) the 5th, and homicide (85.7 per 100,000 population) the 7th leading contributor (data not shown).
- In 2018, among males, unintentional injuries (1,417.8 per 100,000 population) were the leading contributor to YPLL, suicide (550.4 per 100,000 population) the 3rd, and homicide (338 per 100,000 population) the 5th leading contributor to YPLL (data not shown).

¹ World Health Organization, Maternal and Perinatal Health. http://www.who.int/maternal_child_adolescent/topics/maternal/maternal_perinatal/en/.

Figure 3. Leading causes of death for the total population, United States, 2018

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System - Mortality. Mortality in the United States, 2018. <https://www.cdc.gov/nchs/products/databriefs/db355.htm>.

- In 2018, heart disease, cancer, unintentional injuries, chronic lower respiratory diseases, stroke, Alzheimer's disease, and diabetes were among the leading causes of death for the overall U.S. population (Figure 3).
- Overall, suicide was the 9th leading cause of death in 2018.

The years of potential life lost, years with disability, 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, reducing disparities in healthcare, and ultimately reducing disease burden.

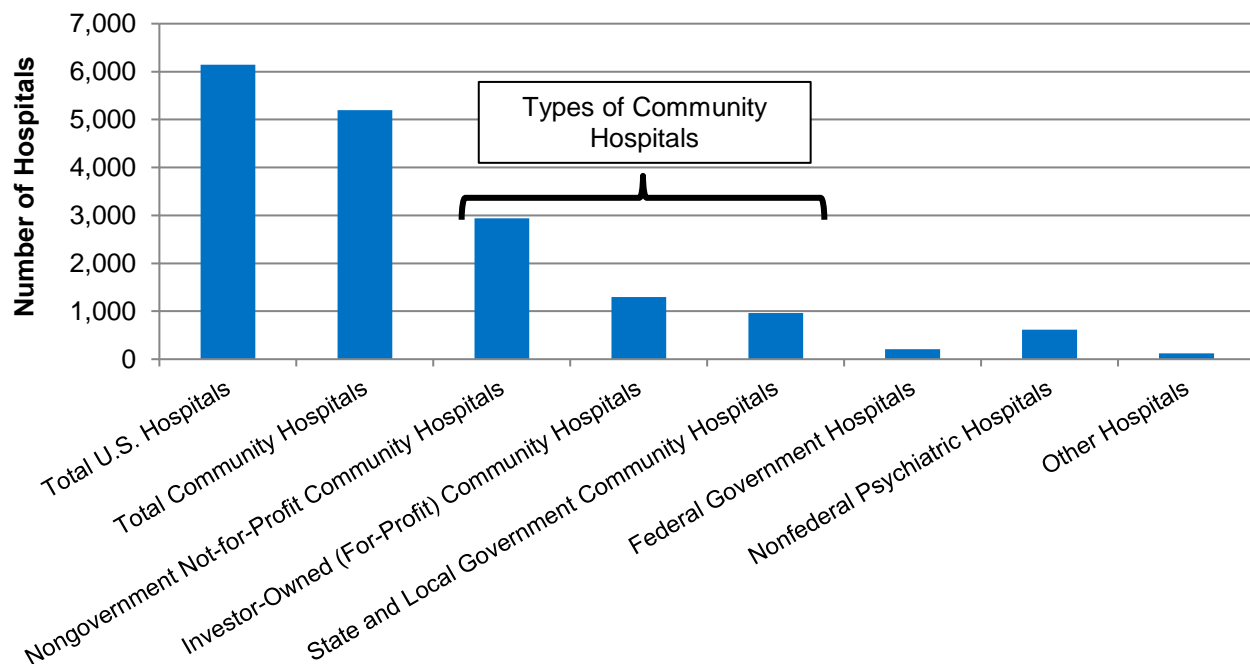
Overview of U.S. Community Hospitals

The United States has more than 6,000 hospitals. Figure 4 shows the number of different types of hospitals accessible by the general public (i.e., excludes prison hospitals or college infirmaries).

- Community hospitals are defined as all nonfederal, short-term general, and other special hospitals. They include academic medical centers or other teaching hospitals if they are nonfederal short-term hospitals. Special hospitals include obstetrics and gynecology; eye, ear, nose, and throat; long term acute care; rehabilitation; orthopedic; and other individually described specialty services.

- Other hospitals include nonfederal long-term care hospitals and hospital units within an institution such as a prison hospital or school infirmary. Long-term care hospitals may be defined by different methods; here they include hospitals with an average length of stay of 30 or more days.

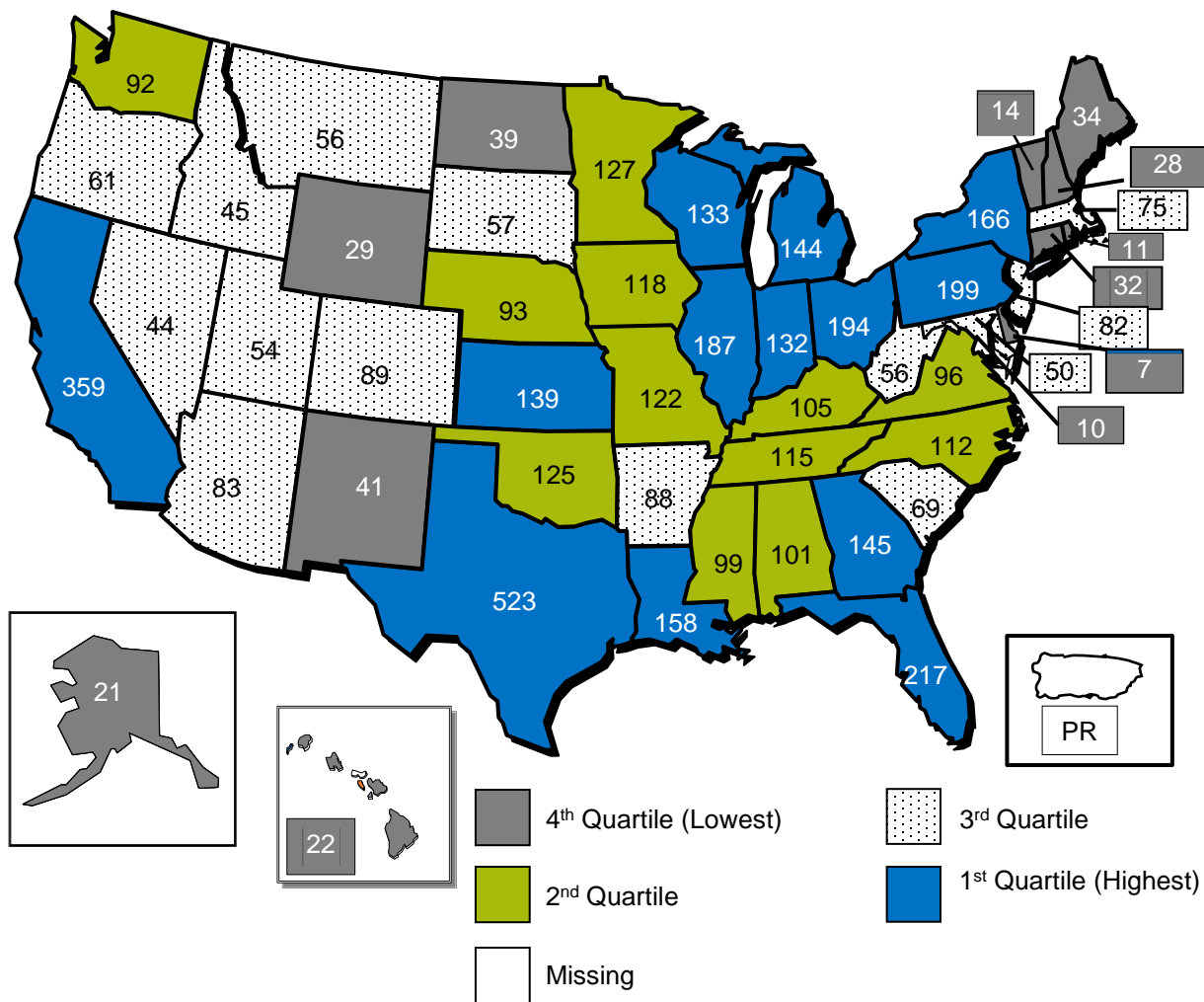
Figure 4. U.S. hospitals, by type of hospital, 2018



Source: American Hospital Association, Fast Facts on U.S. Hospitals, based on AHA Hospital Statistics, 2020 Edition. <https://www.aha.org/system/files/media/file/2020/01/2020-aha-hospital-fast-facts-new-Jan-2020.pdf>.

Note: Community hospitals are defined as all nonfederal, short-term general, and other special hospitals. Other special hospitals include obstetrics and gynecology; eye, ear, nose, and throat; long term acute-care; rehabilitation; orthopedic; and other individually described specialty services. Community hospitals include academic medical centers or other teaching hospitals if they are nonfederal short-term hospitals. Excluded are hospitals not accessible by the general public, such as prison hospitals or college infirmaries. Other hospitals include nonfederal long-term care hospitals and hospital units within an institution, such as a prison hospital or school infirmary. Long-term care hospitals may be defined by different methods; here they include other hospitals with an average length of stay of 30 or more days.

- In 2018, of the more than 6,000 hospitals in the United States, 85% were community hospitals (Figure 4).
- Most community hospitals (56.5%) were nongovernment, not-for-profit community hospitals.

Figure 5. Distribution of community hospitals in the United States, 2018

Source: American Hospital Association, Fast Facts on U.S. Hospitals, based on AHA Hospital Statistics, 2020 Edition. <https://www.aha.org/statistics/fast-facts-us-hospitals>.

- In 2018, the statesⁱⁱ with the most community hospitals in the United States tended to be the larger, more populated states. The top five states, Ohio (194), Pennsylvania (199), Florida (217), California (359), and Texas (523) account for nearly 30% of community hospitals (Figure 5).
- In 2018, there were 1,821 rural community hospitals and 3,377 urban community hospitals.

ⁱⁱ For purposes of the NHQDR, the District of Columbia is treated as a state.

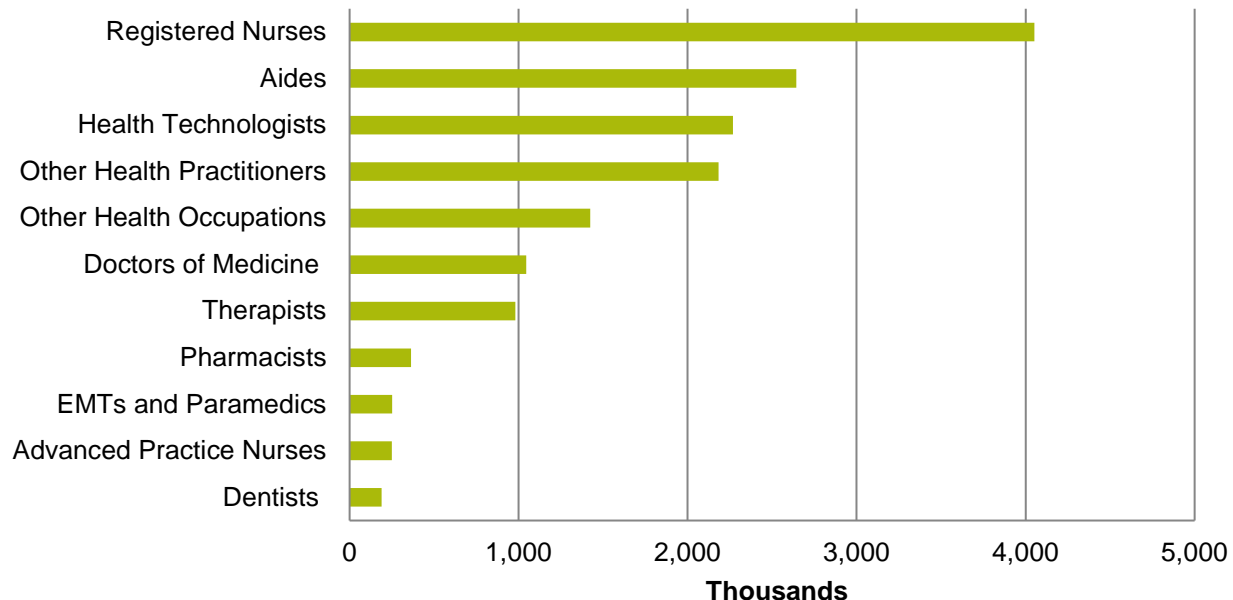
U.S. Healthcare Workforce

Healthcare access and quality can be affected by workforce shortages, which can be an issue especially in rural areas. In addition, issues such as racial, ethnic, and gender concordance between providers and patients can affect communication, provider perspectives, and, ultimately, healthcare quality.

Healthcare Workforce Shortages

Improving quality of care, increasing access to care, and controlling healthcare costs depend on the adequate availability of healthcare providers.² Physician shortages currently exist in many states across the nation and will likely increase over the next 10 years and may influence the delivery of healthcare, negatively affecting patient outcomes.²

Figure 6. Number of people working in health occupations, United States, 2018



Key: EMT = emergency medical technician.

Source: American Community Survey, 2018, <https://www.census.gov/programs-surveys/acs>.

Note: Doctors of medicine also include doctors of osteopathic medicine. Other health practitioners include physician assistants, medical assistants, dental assistants, chiropractors, dietitians and nutritionists, optometrists, podiatrists, and audiologists, as well as massage therapists, medical equipment preparers, medical transcriptionists, pharmacy aides, veterinary assistants and laboratory animal caretakers, phlebotomists, and healthcare support workers. Aides include nursing, psychiatric, home health, occupational therapy, and physical therapy assistants and aides. Therapists include occupational therapists, physical therapists, radiation therapists, recreational therapists, respiratory therapists, speech-language pathologists, and exercise physiologists.

- In 2018, there were 1.05 million active medical doctors in the United States, which include doctors of medicine and doctors of osteopathy (Figure 6).
- In 2018, there were 190,000 dentists.

- In 2018, there were 4.1 million registered nurses, 2.3 million health technologists, and 2.6 million nursing and other aides.
- In 2018, 2.2 million other health practitioners provided care, including more than 142,000 physician assistants.

Workforce Diversity

The number of full-time, year-round workers in healthcare occupations has almost doubled since 2000, increasing from 5 million to 9 million workers, according to the U.S. Census Bureau's [American Community Survey](#).

A racially and ethnically diverse health workforce has been shown to promote better access and healthcare for underserved populations as well as to better meet the health needs of an increasingly diverse population. People of color, however, remain underrepresented in several health professions, despite longstanding efforts to increase the diversity of the healthcare field.³ Additional research has found that physicians from groups underrepresented in the health professions are more likely to serve minority and economically disadvantaged patients. It has also been found that Black and Hispanic physicians practice in areas with larger Black and Hispanic populations than other physicians do.⁴

Gender diversity is also important. Women currently account for three-quarters of full-time, year-round healthcare workers. Although the number of men who are dentists or veterinarians has decreased over the past two decades, men still make up more than half of dentists, optometrists, and emergency medical technicians/paramedics, as well as physicians and surgeons earning over \$100,000.⁵

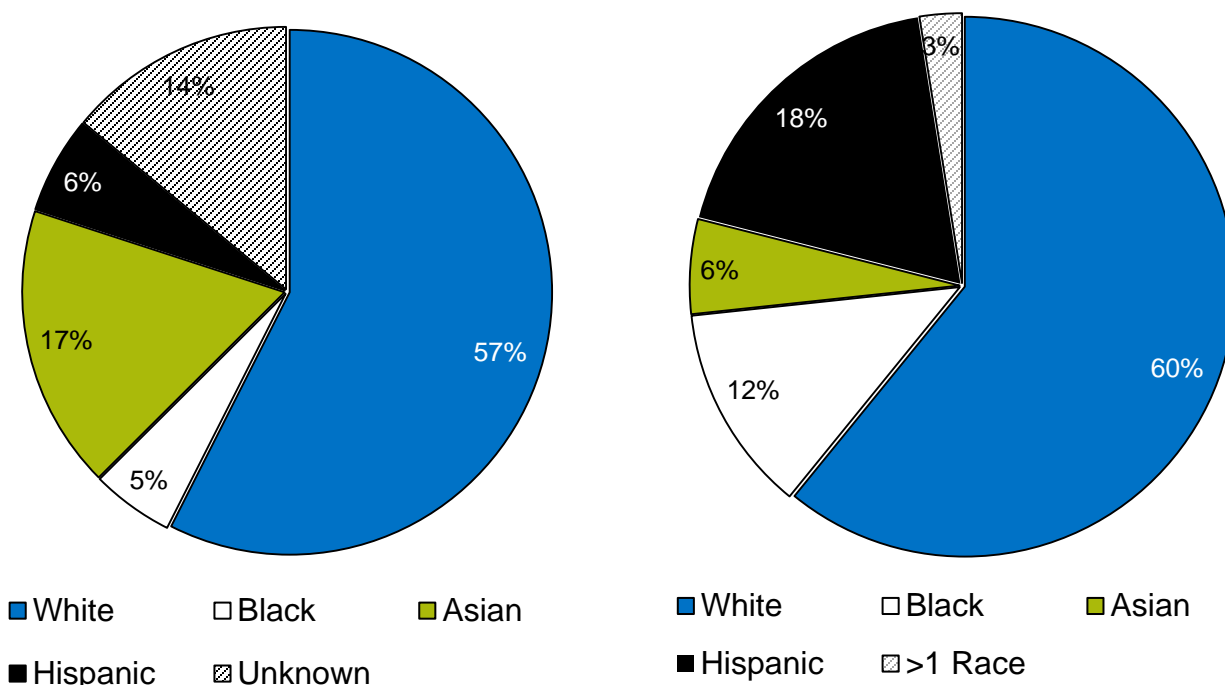
Women working as registered nurses, the most common healthcare occupation, earn on average \$66,000. Women working as nursing, psychiatric, and home health aides, the second most common healthcare occupation, earn only \$27,000.⁵

The impact of unequal gender distribution in the healthcare workforce is observed in the persistence of gender inequality in heart attack mortality. Most physicians are male, and some may not recognize differences in symptoms in female patients. The fact that gender concordance correlates with whether a patient survives a heart attack has implications for theory and practice. Medical practitioners should be aware of the possible challenges male providers face when treating female heart attack patients.⁶

Racial and Ethnic Diversity Among Physicians

Diversification of the physician workforce has been a goal for several years and could improve access to primary care for underserved populations and address health disparities. Family physicians' race/ethnicity has become more diverse over time but still does not reflect the national racial/ethnic composition.⁷

Figure 7. Racial/ethnic distribution of all active physicians (left) and U.S. population racial/ethnic distribution (right), 2018



Source: Left chart: Association of American Medical Colleges, Diversity in Medicine: Facts and Figures 2019. <https://www.aamc.org/data-reports/workforce/interactive-data/figure-18-percentage-all-active-physicians-race/ethnicity-2018>. Right chart: American Community Survey. ACS Demographic and Housing Estimates. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&hidePreview=false>.

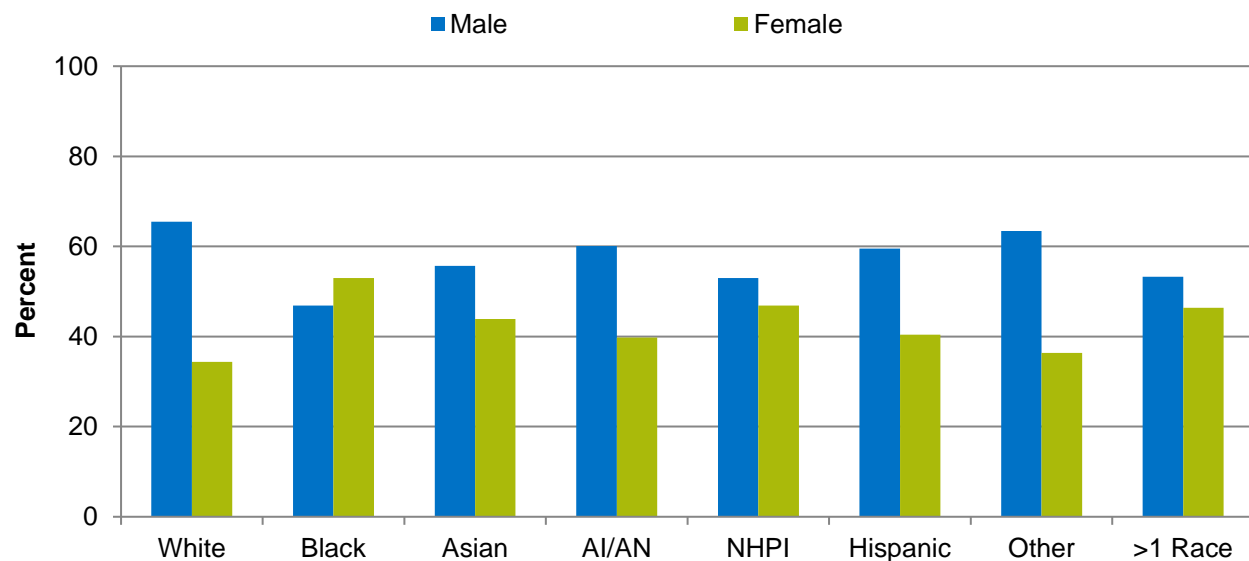
Note: White, Black, and Asian are non-Hispanic. Percentages do not add to 100 due to rounding and the exclusion of groups that together represented only about 1% of the total. Physicians (federal and nonfederal) who are licensed by a state are considered active, provided they are working at least 20 hours per week. Physicians who are retired, semiretired, temporarily not in practice, or not active for other reasons or who have not completed their graduate medical education are excluded. Active physicians include those working in direct patient care, administration, medical teaching, research, or other non-patient care activities. Active physicians include those with a doctor of medicine or a doctor of osteopathic medicine degree.

- In 2018, Whites were 60% of the U.S. population and approximately 57% of physicians (Figure 7).
- Asians were about 6% of the U.S. population and approximately 17% of physicians.
- Blacks were 12% of the U.S. population but only 5% of physicians.
- Hispanics were 18% of the U.S. population but only 6% of physicians.
- People of more than race made up about 3% of the U.S. population but less than 1% of physicians.

- American Indians and Alaska Natives (AI/ANs) and Native Hawaiians/Pacific Islanders (NHPIs) accounted for 1% or less of the U.S. population and 1% or less of physicians (data not shown).

Physician–patient gender concordance can have a major impact on healthcare quality and outcome. Preventive care, including screenings, is key to reducing death and disability and improving health. Evidence has shown that patients with providers of the same gender have higher rates of breast, cervical, and colorectal cancer screenings.⁸

Figure 8. Physicians by race/ethnicity and sex, 2018



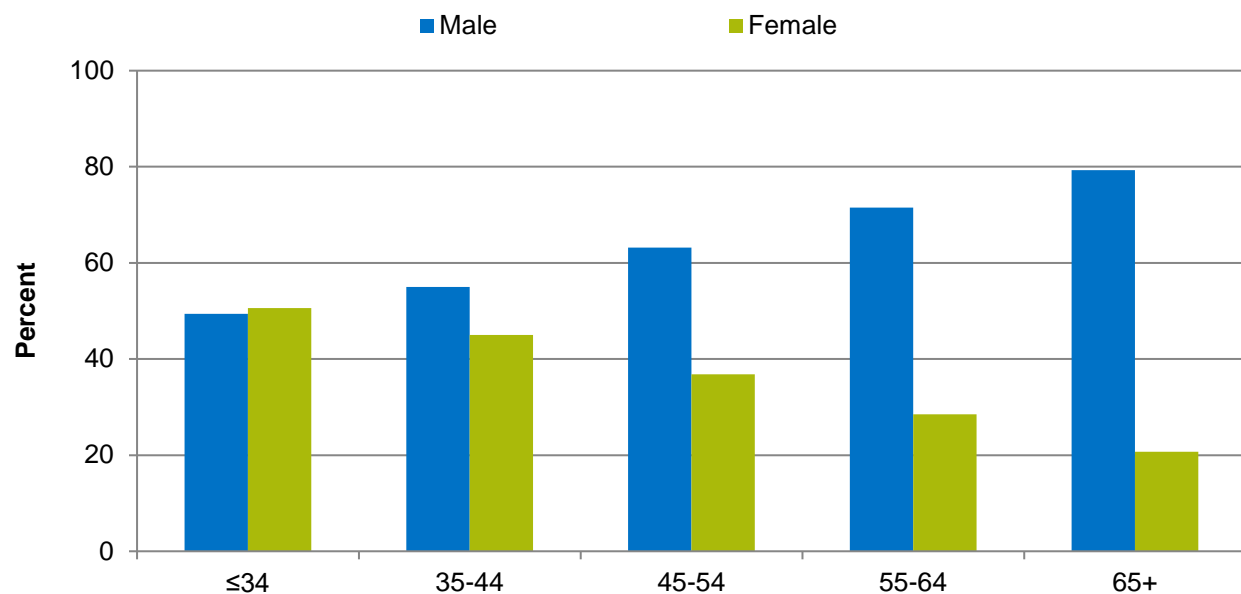
Key: AI/AN = American Indian or Alaska Native; NHPI = Native Hawaiian/Pacific Islander.

Source: Association of American Medical Colleges, Diversity in Medicine: Facts and Figures 2019.

<https://www.aamc.org/data-reports/workforce/interactive-data/figure-20-percentage-physicians-sex-and-race/ethnicity-2018>.

Note: Physicians (federal and nonfederal) who are licensed by a state are considered active, provided they are working at least 20 hours per week. Physicians who are retired, semiretired, temporarily not in practice, or not active for other reasons or who have not completed their graduate medical education are excluded. Active physicians include those working in direct patient care, administration, medical teaching, research, or other non-patient care activities. Active physicians include those with a doctor of medicine or a doctor of osteopathic medicine degree.

- In 2018, among Black physicians, females (53.0%) constituted a larger percentage than males (47.0%) (Figure 8).
- All other groups had a greater percentage of males than females:
 - Among White physicians, 65.5% were male.
 - Among Asian physicians, 55.7% were male.
 - Among AI/AN physicians, 60.1% were male.
 - Among Hispanic physicians (alone or in combination with another race), 59.5% were male.

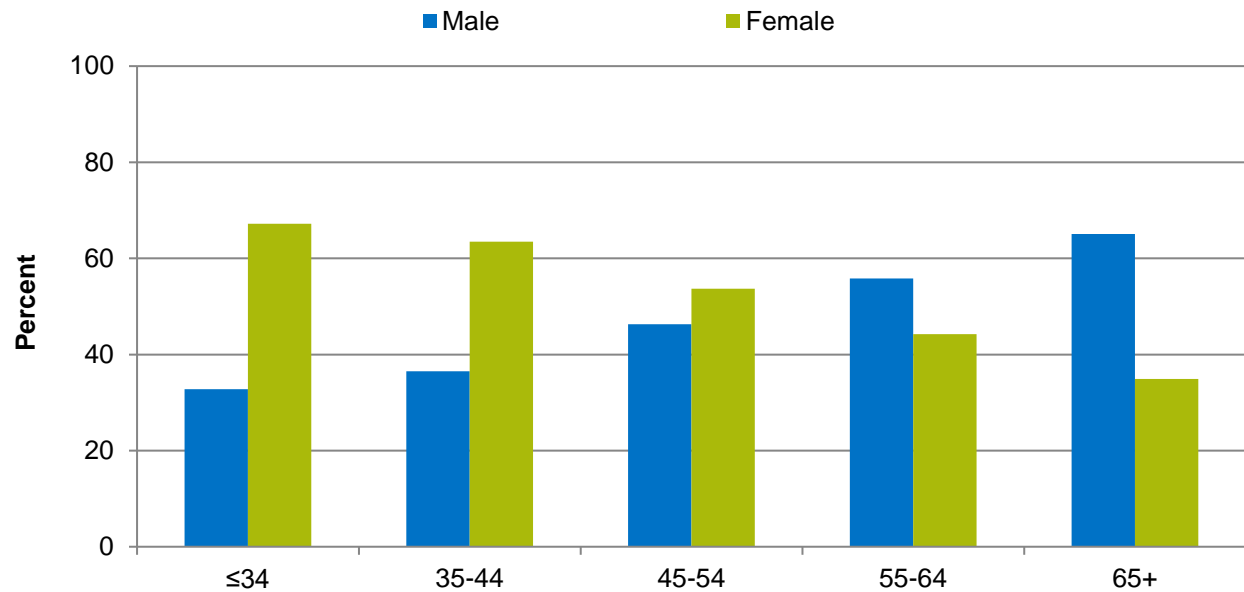
Figure 9. White physicians by age and sex, 2018

Source: Association of American Medical Colleges, Diversity in Medicine: Facts and Figures 2019.

<https://www.aamc.org/data-reports/workforce/interactive-data/figure-25-white-physicians-age-and-sex-2018>.

Note: Physicians (federal and nonfederal) who are licensed by a state are considered active, provided they are working at least 20 hours per week. Physicians who are retired, semiretired, temporarily not in practice, not active for other reasons or who have not completed their graduate medical education are excluded. Active physicians include those working in direct patient care, administration, medical teaching, research, or other non-patient care activities. Active physicians include those with a doctor of medicine or a doctor of osteopathic medicine degree.

- In 2018, among White physicians, males were the vast majority of those age 65 years and over (79.3%) and of those ages 55-64 years (71.5%) (Figure 9).
- A little more than half of White physicians age 34 and younger were females (50.6%).
- Among White physicians age 35 and over, males made up a larger percentage of the workforce than females. This percentage increased with age.

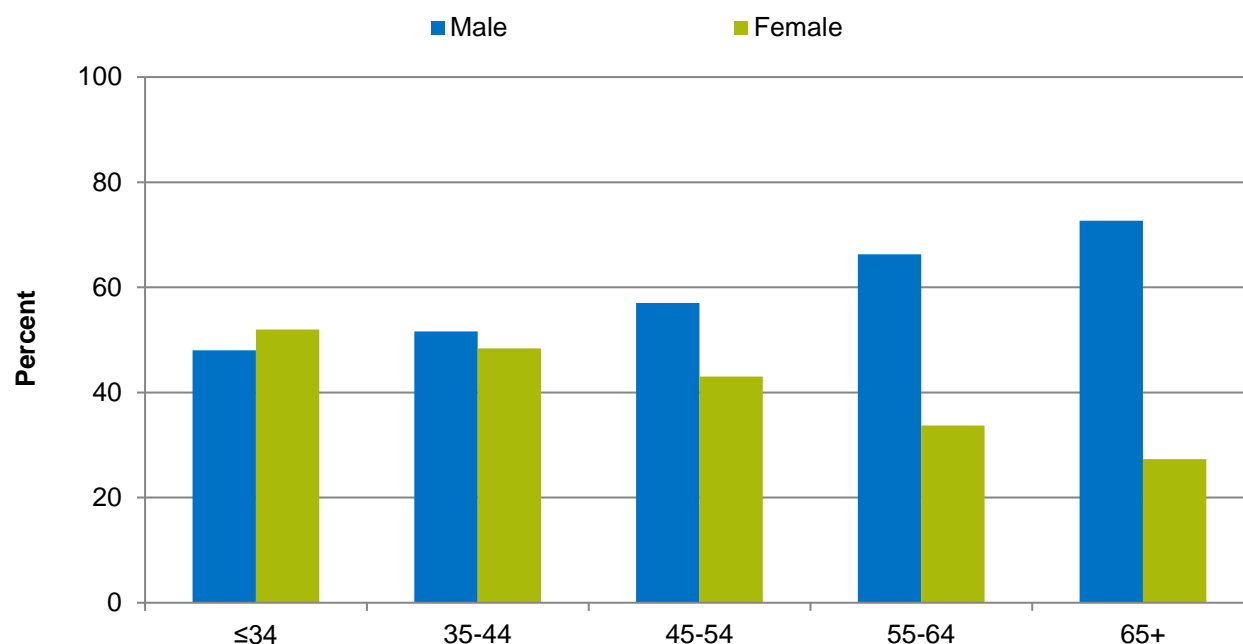
Figure 10. Black physicians by age and sex, 2018

Source: Association of American Medical Colleges, Diversity in Medicine: Facts and Figures 2019.

<https://www.aamc.org/data-reports/workforce/interactive-data/figure-21-black-or-african-american-physicians-age-and-sex-2018>.

Note: Physicians (federal and nonfederal) who are licensed by a state are considered active, provided they are working at least 20 hours per week. Physicians who are retired, semiretired, temporarily not in practice, or not active for other reasons or who have not completed their graduate medical education are excluded. Active physicians include those working in direct patient care, administration, medical teaching, research, or other non-patient care activities. Active physicians include those with a doctor of medicine or a doctor of osteopathic medicine degree.

- In 2018, among Black physicians under age 55, females made up a larger percentage of the workforce than males. This percentage decreased with increasing age (Figure 10).
- Females were 44.2% of Black physicians ages 55-64 and 34.9% of Black physicians age 65 and over.

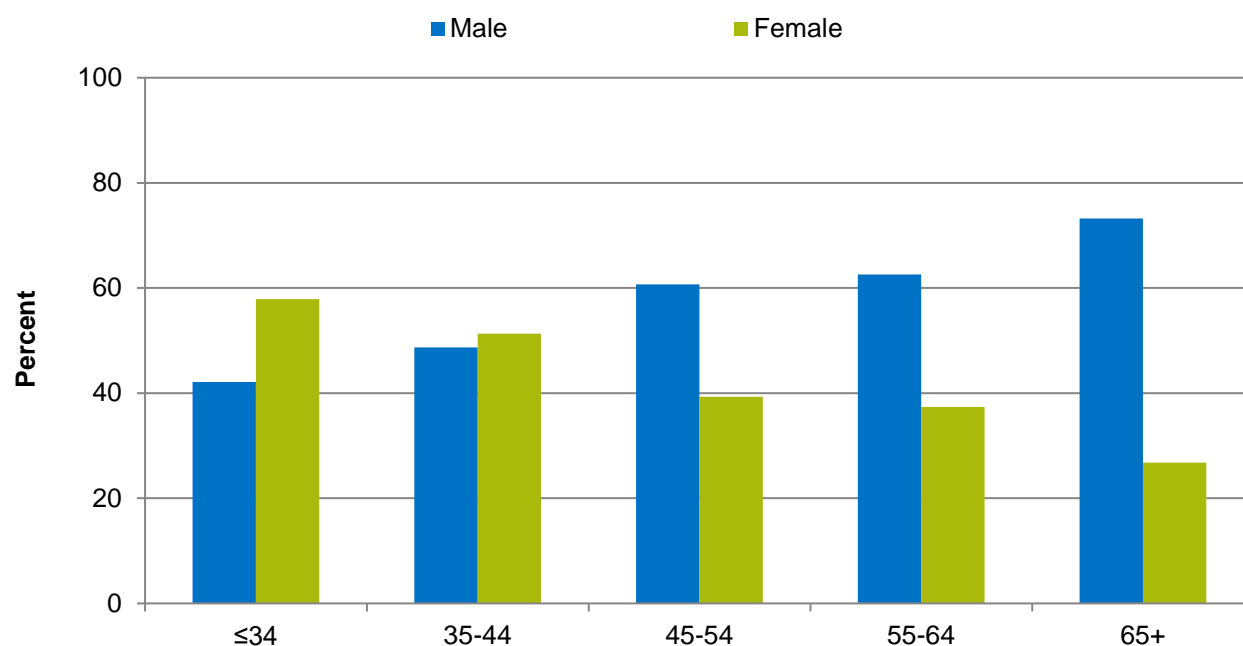
Figure 11. Asian physicians by age and sex, 2018

Source: Association of American Medical Colleges, Diversity in Medicine: Facts and Figures 2019.

<https://www.aamc.org/data-reports/workforce/interactive-data/figure-22-asian-physicians-age-and-sex-2018>.

Note: Physicians (federal and nonfederal) who are licensed by a state are considered active, provided they are working at least 20 hours per week. Physicians who are retired, semiretired, temporarily not in practice, not active for other reasons or who have not completed their graduate medical education are excluded. Active physicians include those working in direct patient care, administration, medical teaching, research, or other non-patient care activities. Active physicians include those with a doctor of medicine or a doctor of osteopathic medicine degree.

- In 2018, among Asian physicians, males were the vast majority of those age 65 years and over (72.7%) and of those ages 55-64 years (66.3%) (Figure 11).
- Among Asian physicians age 34 and younger, there were more females (52.0%) than males (48.0%).
- Among Asian physicians age 35 and over, males made up a larger percentage of the workforce than females. This percentage increased with age.

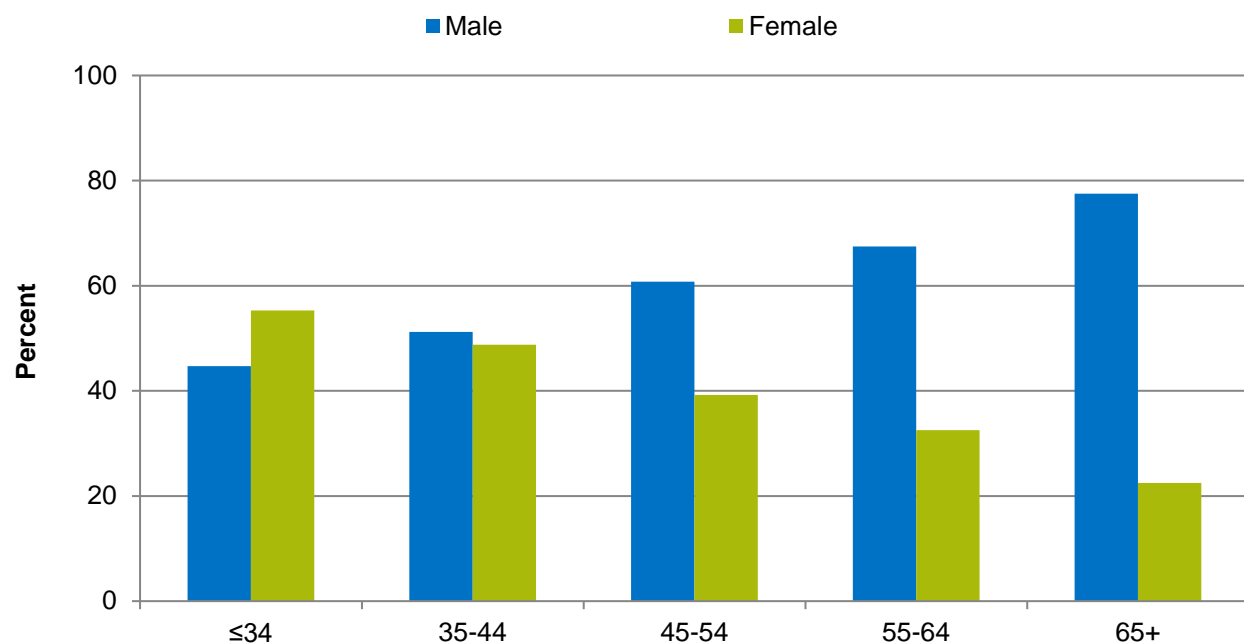
Figure 12. American Indian or Alaska Native physicians by age and sex, 2018

Source: Association of American Medical Colleges, Diversity in Medicine: Facts and Figures 2019.

<https://www.aamc.org/data-reports/workforce/interactive-data/figure-23-american-indian-or-alaska-native-physicians-age-and-sex-2018>.

Note: Physicians (federal and nonfederal) who are licensed by a state are considered active, provided they are working at least 20 hours per week. Physicians who are retired, semiretired, temporarily not in practice, not active for other reasons or who have not completed their graduate medical education are excluded. Active physicians include those working in direct patient care, administration, medical teaching, research, or other non-patient care activities. Active physicians include those with a doctor of medicine or a doctor of osteopathic medicine degree.

- In 2018, among AI/AN physicians, males were the vast majority of those age 65 years and over (73.2%) and of those ages 55-64 years (62.6%) (Figure 12).
- Among AI/AN physicians age 34 and younger, there were more females (57.9%) than males (42.1%).
- Among AI/AN physicians age 35 and over, males made up a larger percentage of the workforce than females. This percentage increased with age.

Figure 13. Hispanic physicians by age and sex, 2018

Source: Association of American Medical Colleges, Diversity in Medicine: Facts and Figures 2019.

<https://www.aamc.org/data-reports/workforce/interactive-data/figure-24-hispanic-or-latino-physicians-age-and-sex-2018>.

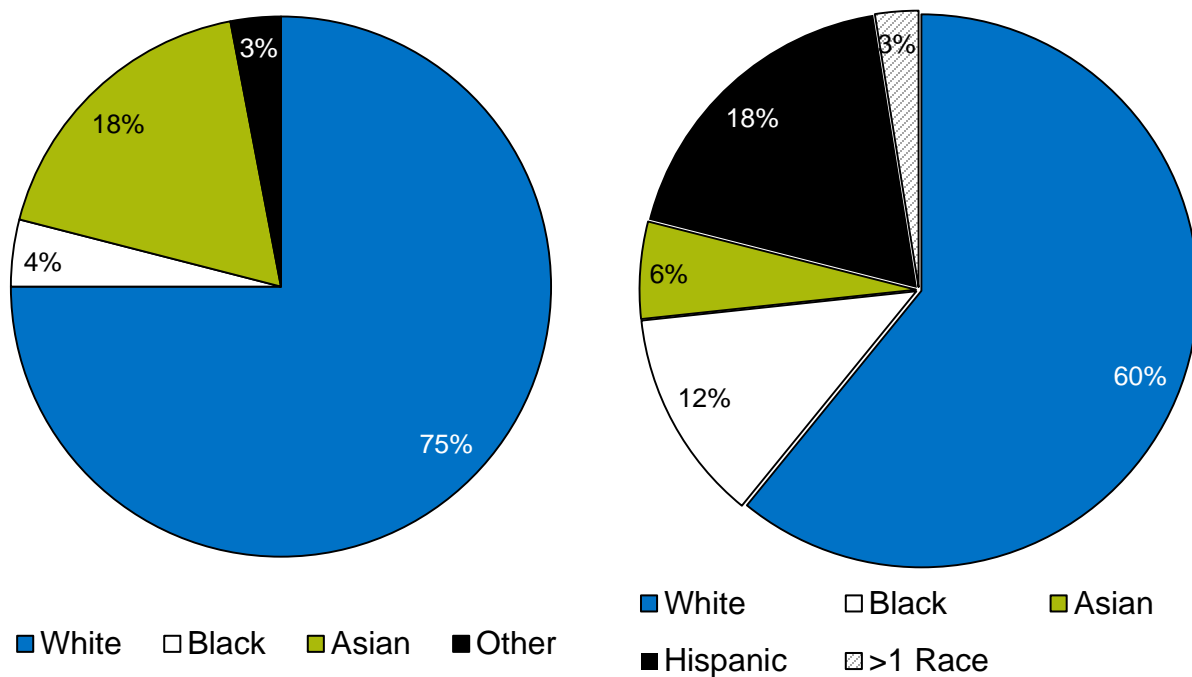
Note: Physicians (federal and nonfederal) who are licensed by a state are considered active, provided they are working at least 20 hours per week. Physicians who are retired, semiretired, temporarily not in practice, not active for other reasons or who have not completed their graduate medical education are excluded. Active physicians include those working in direct patient care, administration, medical teaching, research, or other non-patient care activities. Active physicians include those with a doctor of medicine or a doctor of osteopathic medicine degree.

- In 2018, most Hispanic physicians age 65 years and over (77.5%) and ages 55-64 years (67.5%) were males (Figure 13).
- Among Hispanic physicians age 34 and younger, there were more females (55.3%) compared with males (44.7%).
- Among Hispanic physicians age 35 and over, males made up a larger percentage of the workforce than females. This percentage increased with age.

Racial and Ethnic Diversity Among Dentists

The racial and ethnic diversity of the oral healthcare workforce is insufficient to meet the needs of a diverse population and to address persistent health disparities.⁹ Increased diversity among dentists may improve quality of care, particularly in the area of culturally and linguistically sensitive care.

Figure 14. Dentists by race (left) and U.S. population racial/ethnic distribution (right), 2018



Source: Left chart: Health Resources and Services Administration, National Center for Health Workforce Analysis, 2019; U.S. Census Bureau, American Community Survey, 2018. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&hidePreview=false&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&vintage=2018>. Right chart: American Community Survey. ACS Demographic and Housing Estimates. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&hidePreview=false>.

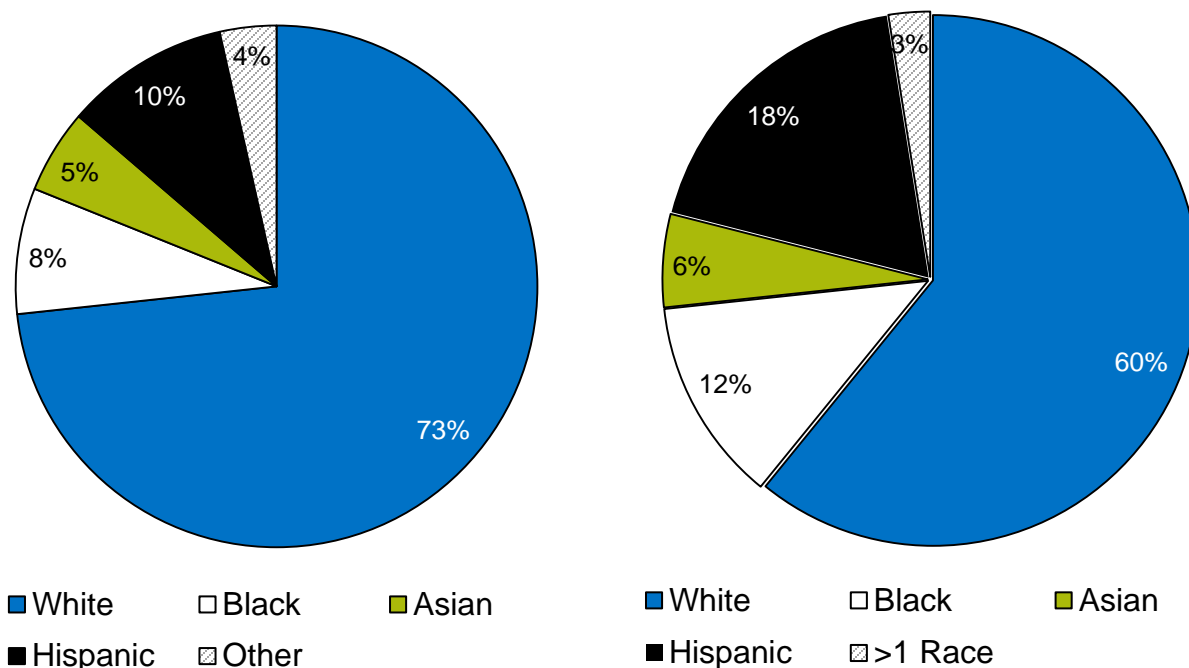
Note: White, Black, and Asian are non-Hispanic. If estimates for certain racial/ethnic groups meet data suppression criteria, they are recategorized into Other. Percentages of the U.S. population do not add to 100 due to rounding and the exclusion of groups that together represented only about 1% of the total.

- In 2018, the vast majority of dentists (75%) were non-Hispanic White (Figure 14).
- In 2018, racial and ethnic minority groups accounted for 25% of dentists:
 - Asians, 18%,
 - Blacks, 4%, and
 - Other (more than one race, AI/ANs, NHPs, and Hispanics), 3.0%.
- In 2018, the number of dentists for Hispanics did not meet the criteria for statistical reliability due to small sample size despite their being 18% of the U.S. population.

Racial and Ethnic Diversity Among Registered Nurses

Ensuring workforce diversity and leadership development opportunities for racial/ethnic minority nurses must remain a high priority in order to eliminate health disparities and, ultimately, achieve health equity.¹⁰

Figure 15. Registered nurses by race/ethnicity (left) and U.S. population racial/ethnic distribution (right), 2018



Source: Left chart: Health Resources and Services Administration, National Center for Health Workforce Analysis, 2019, Brief Summary Results From the 2018 National Sample Survey of Registered Nurses. Right chart: American Community Survey. ACS Demographic and Housing Estimates. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&hidePreview=false>. **Note:** White, Black, Asian, and >1 Race are non-Hispanic. Percentages of the U.S. population do not add to 100 due to rounding and the exclusion of groups that together represented only about 1% of the total.

- In 2018, the vast majority of RNs (73%) were non-Hispanic White (Figure 15).
- In 2018, racial and ethnic minority groups accounted for 27% of RNs:
 - Hispanics, 10%,
 - Blacks, 8%,
 - Asians, 5%, and
 - Other (more than one race, AI/ANs, and NHPs), 3.5%.

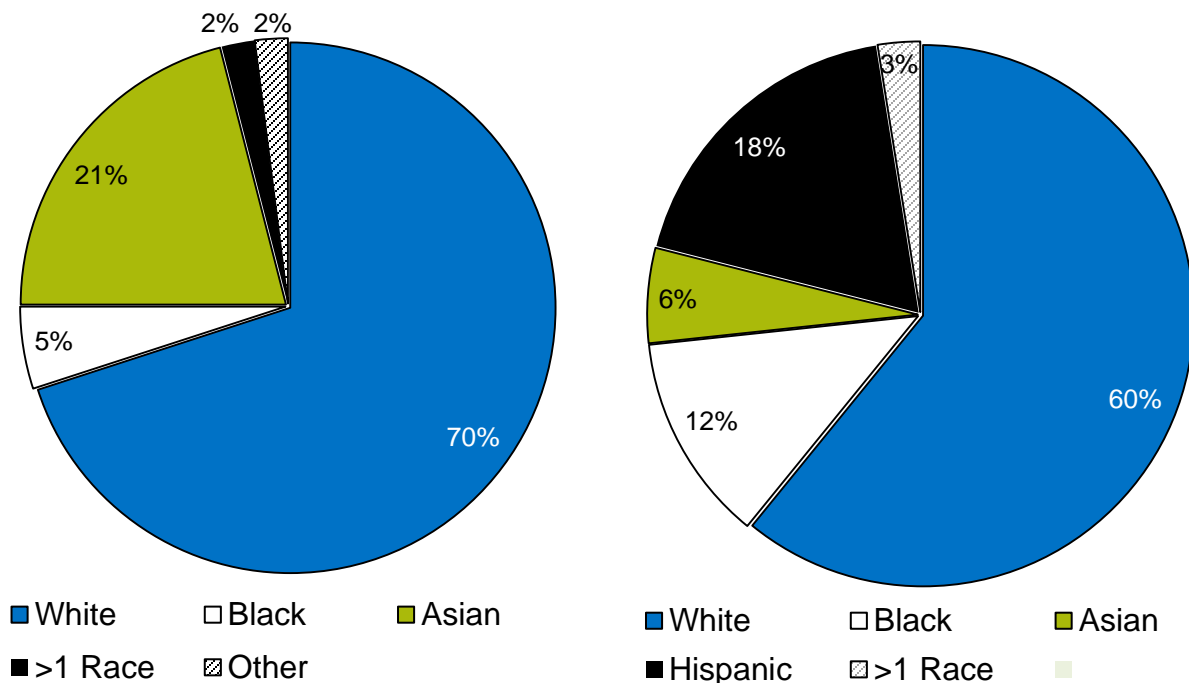
Racial and Ethnic Diversity Among Pharmacists

Most healthcare diagnostic and treating occupations such as pharmacists, physicians, nurses, and dentists are primarily White while healthcare support roles such as dental assistants, medical assistants, and personal care aides are more diverse. To decrease

disparities and enhance patient care, racial and ethnic diversity must be improved on all levels of the healthcare workforce, not just in support roles.¹¹

Progress has been made toward increased racial and ethnic diversity but more work is needed. As Bush notes in an article on underrepresented minorities in pharmacy school, “If we are determined to reduce existing healthcare disparities among racial, ethnic, and socioeconomic groups, then we must be determined to diversify the healthcare workforce.”¹²

Figure 16. Pharmacists by race (left) and U.S. population racial/ethnic distribution (right), 2018



Source: Left chart: Health Resources and Services Administration, National Center for Health Workforce Analysis, 2019. U.S. Census Bureau, American Community Survey, 2018. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&hidePreview=false&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&vintage=2018>. Right chart: American Community Survey. ACS Demographic and Housing Estimates. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&hidePreview=false>.

Note: White, Black, Asian, and >1 Race are non-Hispanic. Percentages of the U.S. population do not add to 100 due to rounding and the exclusion of groups that together represented only about 1% of the total.

- In 2018, the vast majority of pharmacists (70%) were non-Hispanic White (Figure 16).
- In 2018, racial and ethnic minority groups accounted for 30% of pharmacists:
 - Asians, 21%,
 - Blacks, 5%,
 - More than one race, 2%, and
 - Other (Hispanics, AI/ANs, and NHPIs), 2.0%.

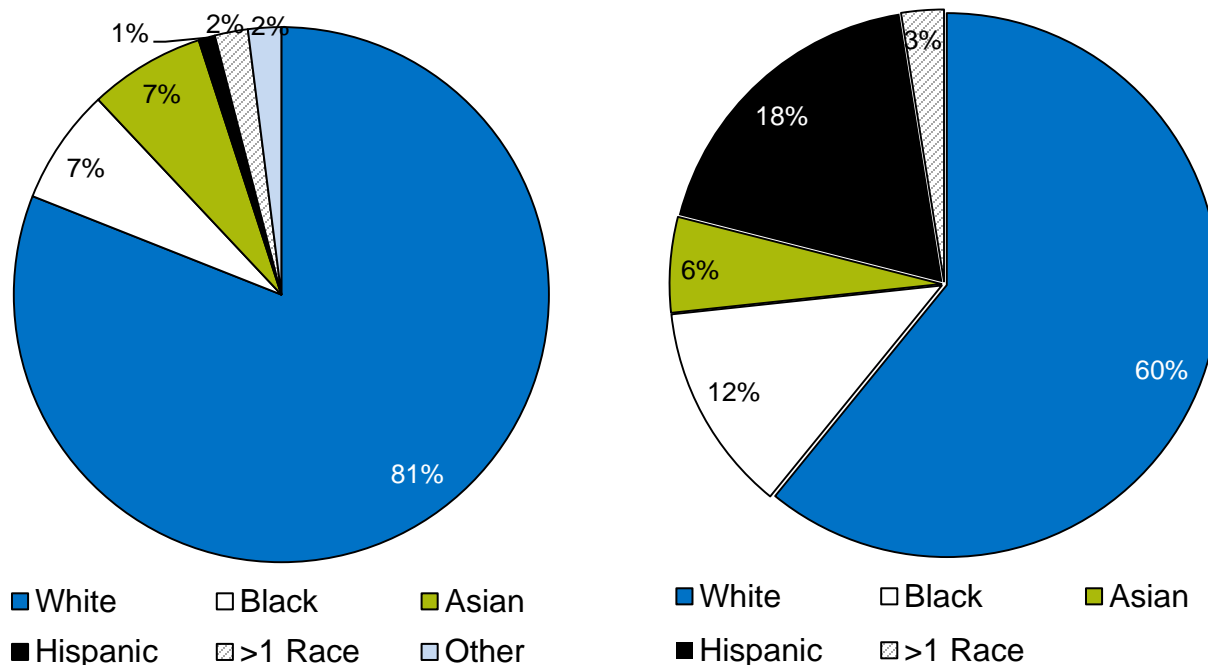
Racial and Ethnic Diversity Among Therapists

Occupational therapists, physical therapists, radiation therapists, recreational therapists, and respiratory therapists are classified as health diagnosing and treating practitioners. Hispanics are significantly underrepresented in all of the occupations in the category of Health Diagnosing and Treating Practitioners. Among non-Hispanics, Blacks are underrepresented in most of these occupations.

Asians are underrepresented among speech–language pathologists, and AI/ANs are underrepresented in nearly all occupations. To the extent they can be reliably reported, data also show that NHPs are underrepresented in all occupations in the Health Diagnosing and Treating Practitioners group.¹¹

Therapists include occupational therapists, physical therapists, radiation therapists, recreational therapists, respiratory therapists, speech-language pathologists, exercise physiologists, and other therapists.

Figure 17. Therapists by race/ethnicity (left) and U.S. population racial/ethnic distribution (right), 2018



Source: Left chart: Health Resources and Services Administration, National Center for Health Workforce Analysis, 2019. U.S. Census Bureau, American Community Survey, 2018. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&hidePreview=false&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&vintage=2018>. Right chart: American Community Survey. ACS Demographic and Housing Estimates. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&hidePreview=false>.

Note: White, Black, Asian, >1 Race, and Other are non-Hispanic. Percentages of the U.S. population do not add to 100 due to rounding and the exclusion of groups that together represented only about 1% of the total.

- In 2018, the vast majority of therapists (81%) were non-Hispanic White (Figure 17).
- In 2018, racial and ethnic minority groups accounted for 19% therapists:
 - Blacks, 7%,
 - Asians, 7%,
 - More than one race, 2%,
 - Hispanics, 1%, and
 - Other (AI/ANs and NHPIs), 2%.

Racial and Ethnic Diversity Among Advanced Practice Registered Nurses

The adequacy and distribution of the primary care workforce to meet the current and future needs of Americans continue to be cause for concern. Advanced practice registered nurses are increasingly being used to fill this gap but may include clinicians in areas beyond primary care, such as clinical nurse specialists, nurse midwives, and nurse anesthetists.

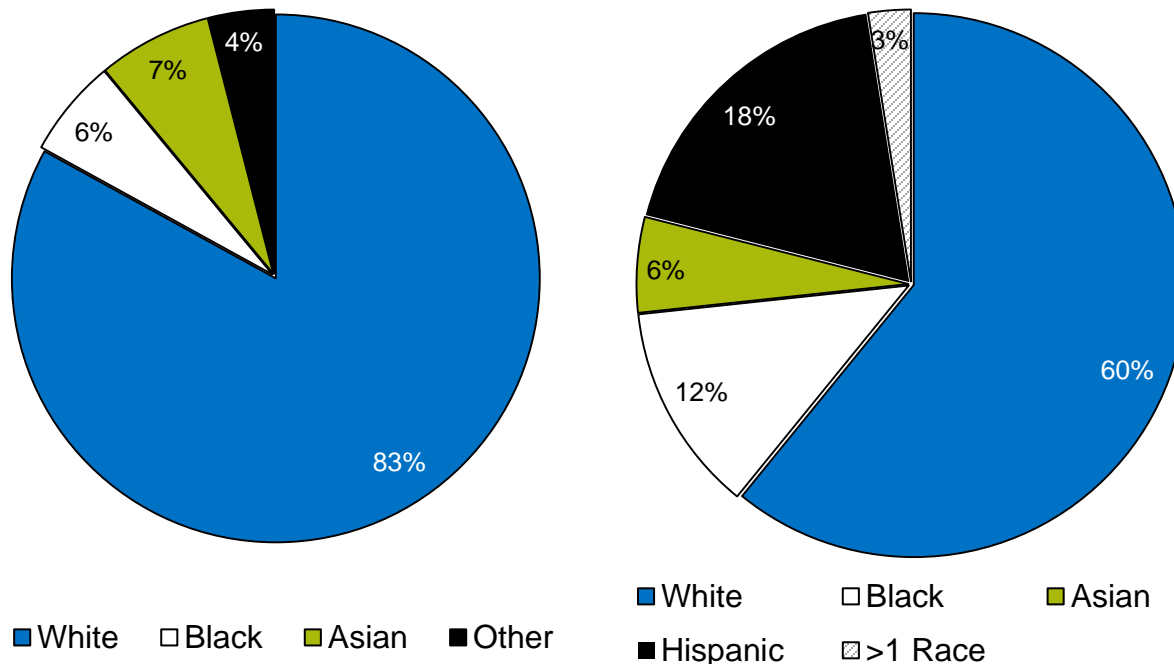
Advanced practice registered nurses are registered nurses educated at the master's or post-master's level who serve in a specific role with a specific patient population. They include certified nurse practitioners, clinical nurse specialists, certified nurse anesthetists, and certified nurse-midwives.

Nurse practitioners, physicians, and physician assistants provide most of the primary care in the United States, with nurse practitioners accounting for 19% of the primary care workforce and physician assistants accounting for 7%.¹³

Nurse practitioners provide an extensive range of services that includes taking health histories and providing complete physical exams. They diagnose and treat acute and chronic illnesses, provide immunizations, prescribe and manage medications and other therapies, order and interpret lab tests and x rays, and provide health education and supportive counseling.

Nurse practitioners deliver primary care in practices of various sizes, types (e.g., private, public), and settings, such as clinics, schools, and workplaces. Nurse practitioners work independently and collaboratively. They often take the lead in providing care in innovative primary care arrangements, such as retail clinics.¹⁴

Figure 18. Advanced practice registered nurses by race (left) and U.S. population racial/ethnic distribution (right), 2018



Source: Left chart: Health Resources and Services Administration, National Center for Health Workforce Analysis, 2019. U. S. Census Bureau, American Community Survey, 2018. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&hidePreview=false&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&vintage=2018>. Right chart: American Community Survey. ACS Demographic and Housing Estimates. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&hidePreview=false>.

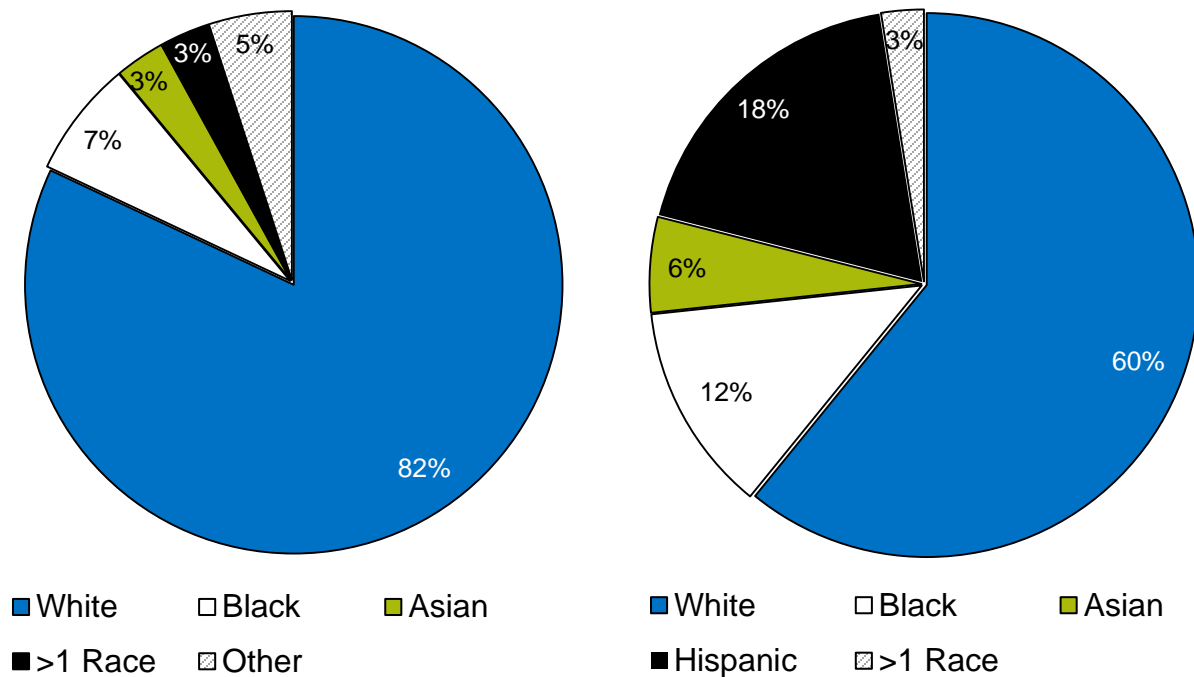
Note: White, Black, Asian, >1 Race, and Other are non-Hispanic. Percentages of the U.S. population do not add to 100 due to rounding and the exclusion of groups that together represented only about 1% of the total.

- In 2018, the vast majority of advanced practice registered nurses (83%) were non-Hispanic White (Figure 18).
- In 2018, racial and ethnic minority groups accounted for 17% of advanced practice registered nurses:
 - Asians, 7%,
 - Blacks, 6%, and
 - Other (Hispanics, more than one race, AI/ANs, and NHPs), 4%.

Racial and Ethnic Diversity Among Emergency Professionals

Workforce diversity can reduce communication barriers and inequalities in healthcare delivery, especially in settings such as emergency departments where time pressure and incomplete information may worsen the effects of implicit biases. The racial and ethnic makeup of the paramedic and emergency medical technician workforce indicates that concerted efforts are needed to encourage students of diverse backgrounds to pursue emergency service careers.¹⁵

Figure 19. Emergency medical technicians and paramedics by race (left), and U.S. population racial/ethnic distribution (right), 2018



Source: Left chart: Health Resources and Services Administration, National Center for Health Workforce Analysis, 2019. U.S. Census Bureau, American Community Survey, 2018. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&hidePreview=false&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&vintage=2018>. Right chart: American Community Survey. ACS Demographic and Housing Estimates. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&hidePreview=false>.

Note: White, Black, Asian, >1 Race, and Other are non-Hispanic. Percentages of the U.S. population do not add to 100 due to rounding and the exclusion of groups that together represented only about 1% of the total.

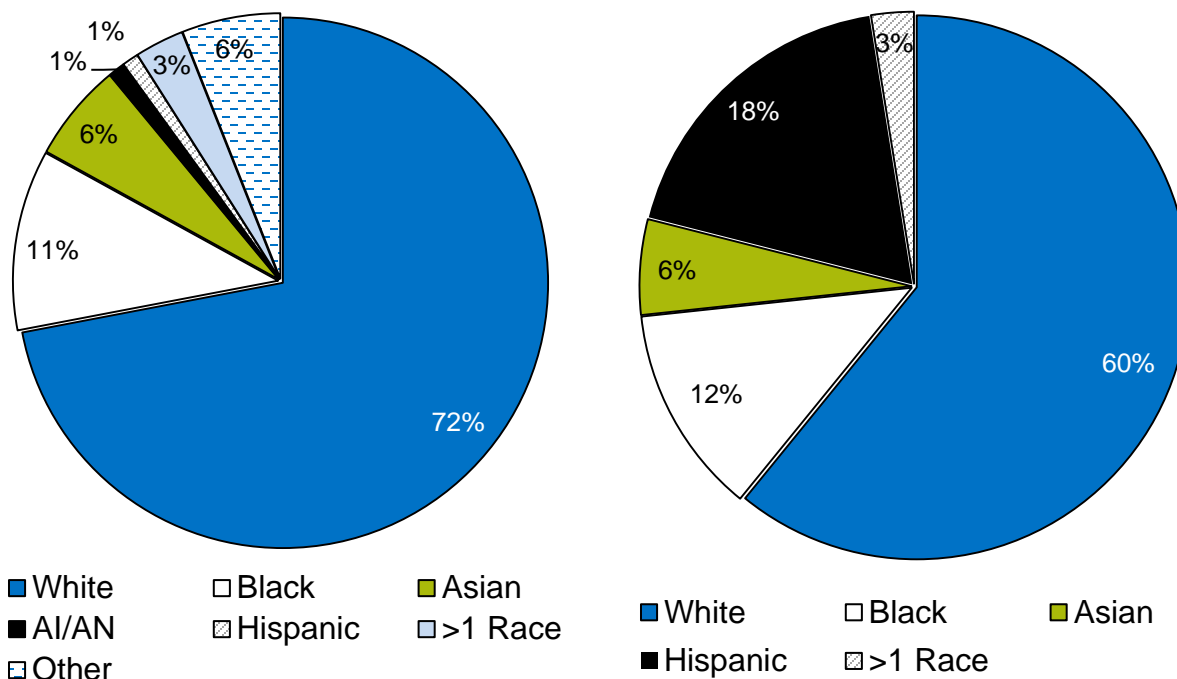
- In 2018, the vast majority of emergency medical technicians (EMTs) and paramedics (82%) were non-Hispanic White (Figure 19).
- In 2018, racial and ethnic minority groups accounted for 18% of EMTs and paramedics:
 - Blacks, 7%,
 - Asians, 3%,
 - More than one race, 3%,
 - Other (Hispanics, AI/ANs, and NHPIs), 5%.

Racial and Ethnic Diversity Among Other Health Practitioners

Other health practitioners include physician assistants, medical assistants, dental assistants, chiropractors, dietitians and nutritionists, optometrists, podiatrists, and audiologists, as well as massage therapists, medical equipment preparers, medical

transcriptionists, pharmacy aides, veterinary assistants and laboratory animal caretakers, phlebotomists, and healthcare support workers.

Figure 20. Other health practitioners by race/ethnicity (left) and U.S. population racial/ethnic distribution (right), 2018



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

Source: Left chart: Health Resources and Services Administration, National Center for Health Workforce Analysis, 2019. U.S. Census Bureau, American Community Survey, 2018. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&hidePreview=false&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&vintage=2018>. Right chart: American Community Survey. ACS Demographic and Housing Estimates. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&hidePreview=false>.

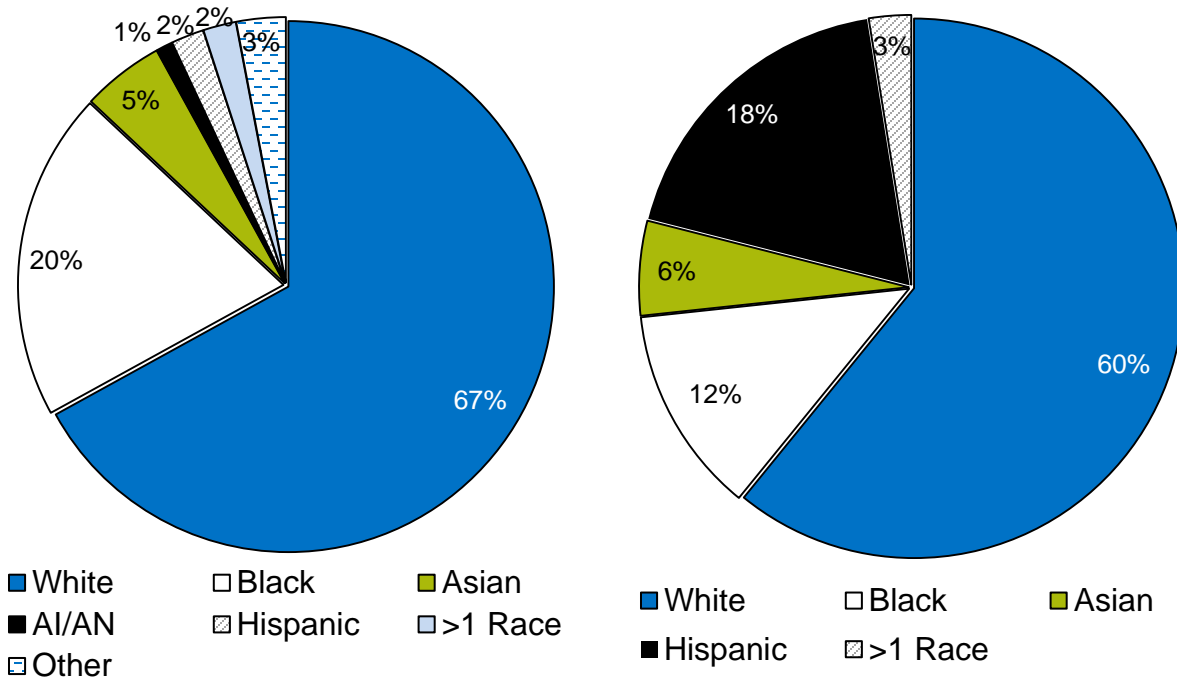
Note: White, Black, Asian, AI/AN, >1 Race, and Other are non-Hispanic. Percentages of the U.S. population do not add to 100 due to rounding and the exclusion of groups that together represented only about 1% of the total.

- In 2018, the vast majority of other health practitioners (72%) were non-Hispanic White (Figure 20).
- In 2018, racial and ethnic minority groups accounted for 28% of other health practitioners:
 - Blacks, 11%,
 - Asians, 6%,
 - Other, 6%,
 - More than one race, 3%,
 - Hispanics, 1%, and
 - AI/ANs, 1%.

Racial and Ethnic Diversity Among Other Health Occupations

Other health occupations include veterinarians, acupuncturists, all other healthcare diagnosing or treating practitioners, dental hygienists, and licensed practical and licensed vocational nurses.

Figure 21. Other health occupations by race/ethnicity (left) and U.S. population racial/ethnic distribution (right), 2018



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

Source: Left chart: Health Resources and Services Administration, National Center for Health Workforce Analysis, 2019. U.S. Census Bureau, American Community Survey, 2018. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&hidePreview=false&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&vintage=2018>. Right chart: American Community Survey. ACS Demographic and Housing Estimates. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&hidePreview=false>.

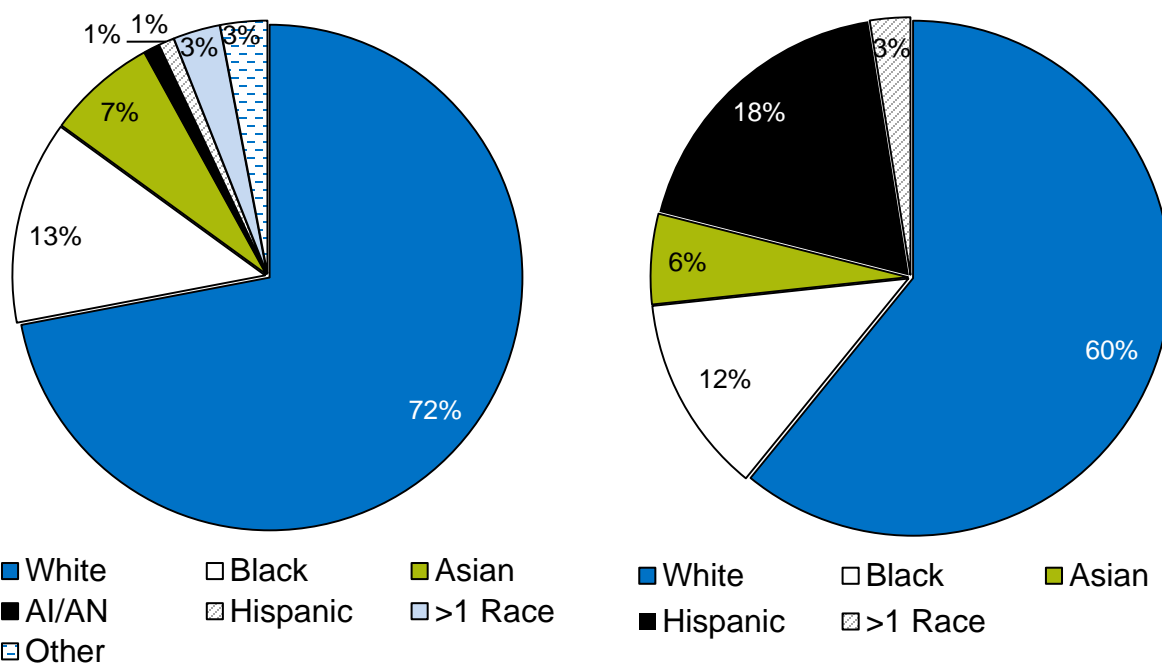
Note: White, Black, Asian, AI/AN, >1 Race, and Other are non-Hispanic. Percentages of the U.S. population do not add to 100 due to rounding and the exclusion of groups that together represented only about 1% of the total.

- In 2018, the vast majority of staff in other health occupations (67%) were non-Hispanic White (Figure 21).
- In 2018, racial and ethnic minority groups accounted for 33% of staff in other health occupations:
 - Blacks, 20%,
 - Asians, 5%,
 - Other, 3%,
 - More than one race, 2%,
 - Hispanics, 2%, and
 - AI/ANs, 1%.

Racial and Ethnic Diversity Among Health Technologists

Health technologists include clinical laboratory technologists and technicians, cardiovascular technologists and technicians, diagnostic medical sonographers, radiologic technologists and technicians, magnetic resonance imaging technologists, nuclear medicine technologists and medical dosimetrists, pharmacy technicians, surgical technologists, veterinary technologists and technicians, dietetic technicians and ophthalmic medical technicians, medical records specialists, and opticians (dispensing), miscellaneous health technologists and technicians, and technical occupations.

Figure 22. Health technologists by race/ethnicity (left) and U.S. population racial/ethnic distribution (right), 2018



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

Source: Left chart: Health Resources and Services Administration, National Center for Health Workforce Analysis, 2019. U.S. Census Bureau, American Community Survey, 2018. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&hidePreview=false&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&vintage=2018>. Right chart: American Community Survey. ACS Demographic and Housing Estimates. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&hidePreview=false>.

Note: White, Black, Asian, AI/AN, >1 Race, and Other are non-Hispanic. Percentages of the U.S. population do not add to 100 due to rounding and the exclusion of groups that together represented only about 1% of the total.

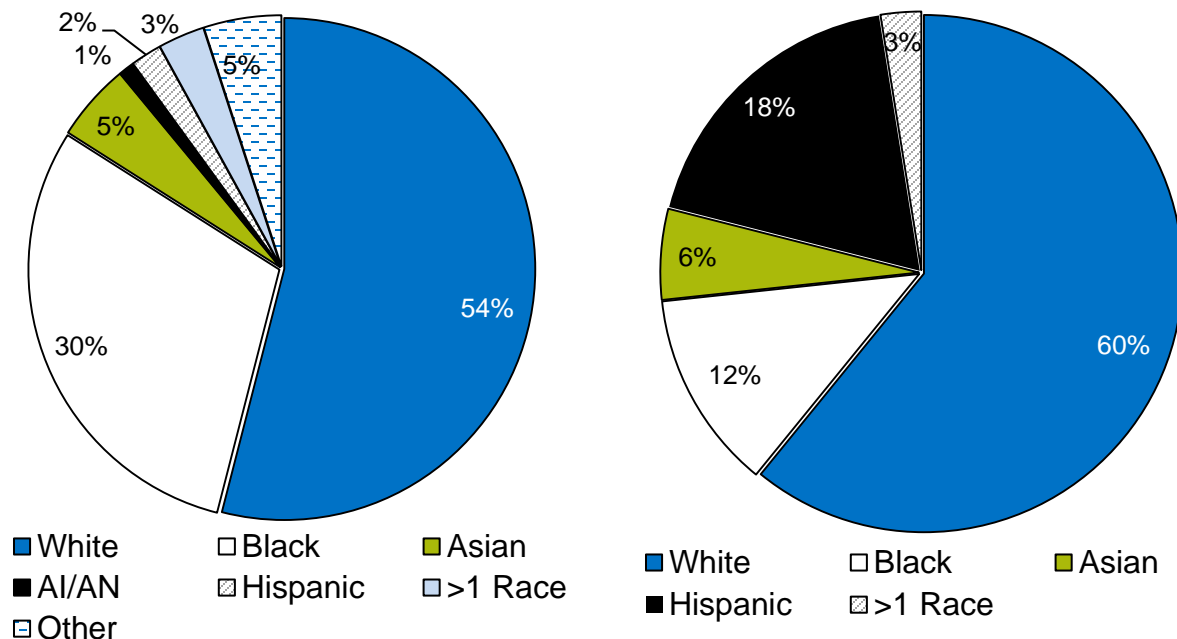
- In 2018, the vast majority of health technologists (72%) were non-Hispanic White (Figure 22).
- In 2018, racial and ethnic minority groups accounted for 28% of health technologists:
 - Blacks, 13%,
 - Asians, 7%,

- Other, 3%,
- More than one race, 3%,
- Hispanics, 1%, and
- AI/ANs, 1%.

Racial and Ethnic Diversity Among Healthcare Aides

Healthcare aides include nursing, psychiatric, home health, occupational therapy, and physical therapy assistants and aides.

Figure 23. Healthcare aides by race/ethnicity (left) and U.S. population racial/ethnic distribution (right), 2018



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

Source: Left chart: Health Resources and Services Administration, National Center for Health Workforce Analysis, 2019. U.S. Census Bureau, American Community Survey, 2018.

<https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&hidePreview=false&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&vintage=2018>. Right chart: American Community Survey. ACS Demographic and Housing Estimates. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&hidePreview=false>.

Note: White, Black, Asian, AI/AN, >1 Race, and Other are non-Hispanic. Percentages of the U.S. population do not add to 100 due to rounding and the exclusion of groups that together represented only about 1% of the total.

- In 2018, the majority of health aides (54%) were non-Hispanic White (Figure 23).
- In 2018, racial and ethnic minority groups accounted for 46% of health aides:
 - Blacks, 30%,
 - Asians, 5%,
 - Other, 5%,
 - More than one race, 3%,

- Hispanics, 2%, and
- AI/ANs, 1%.

Racial and Ethnic Diversity Among Psychologists

The United States has an inadequate workforce to meet the mental health needs of the population,^{16,17,18} and it is estimated that nearly 57% of the U.S. population with any mental illness does not receive needed treatment.¹⁹ This unmet need is even greater for racial and ethnic minority populations. Nearly three-quarters (73%) of Asians and Pacific Islanders,ⁱⁱⁱ 69% of African Americans, and 67% of Hispanics with a mental illness do not receive mental health treatment.^{19,20,21,22}

These gaps in mental healthcare may be attributed to a number of reasons, including stigma, cultural attitudes and beliefs, lack of insurance, or lack of familiarity with the mental health system.^{23,24,25} However, a significant contributor to this treatment gap is the composition of the workforce.

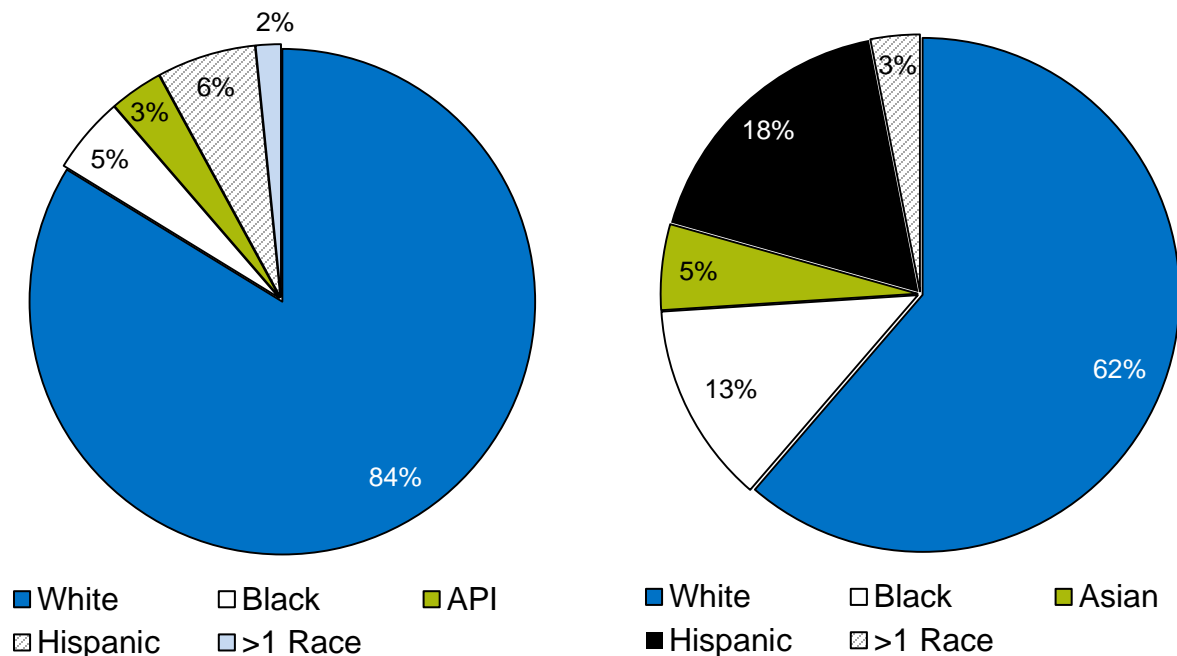
The current mental health workforce lacks racial and ethnic diversity.^{24,26} Research has shown that racial/ethnic patient-provider concordance is correlated with patient engagement and retention in mental health treatment.²⁷ In addition, racial and ethnic minority providers are more likely to serve patients of color than White providers.^{24,26}

Among psychologists, a key practitioner group in the mental health workforce,^{17,28} minorities are significantly underrepresented. Psychologists in the United States are predominantly non-Hispanic White, while all racial/ethnic minorities represented only about one-sixth of all psychologists from 2011 to 2015.

Reducing the serious gaps in mental health care for racial and ethnic minority populations will require a significant shift in the workforce. Workforce recruitment, training, and education of more racially, ethnically, and culturally diverse practitioners will be essential to reduce these disparities.

ⁱⁱⁱ The National Survey on Drug Use and Health at the Substance Abuse and Mental Health Services Administration combines data for Asians and Pacific Islander populations, which includes Native Hawaiians.

Figure 24. Psychologists by race/ethnicity (left) and U.S. population racial/ethnic distribution (right), 2015



Key: API = Asian or Pacific Islander.

Source: Left chart: Health Resources and Services Administration, Sex, Race, and Ethnic Diversity of U.S. Health Occupations (2011-2015), August 2017. <https://bhwh.hrsa.gov/sites/default/files/bhwh/nchwa/diversityushealthoccupations.pdf>. Right chart: American Community Survey. ACS Demographic and Housing Estimates, 2015 ACS 1-Year Estimates Data. <https://data.census.gov/cedsci/table?q=Race%20and%20Ethnicity&t=Race%20and%20Ethnicity&tid=ACSDP1Y2018.DP05&hidePreview=false>.

Note: White, Black, API, and >1 Race are non-Hispanic. Psychologist includes practitioners of general psychology, developmental and child psychology, clinical psychology, counseling psychology, school psychology, clinical child psychology, geropsychology, and health/medical psychology. Percentages of the U.S. population do not add to 100 due to rounding; in addition, the chart excludes groups that together represented only about 1% of the total.

- In 2015, the vast majority of psychologists (84%) were non-Hispanic White (Figure 24).
- In 2018, racial and ethnic minority groups accounted for 16% of psychologists:
 - Hispanics, 6%,
 - Blacks, 5%,
 - APIs, 3%, and
 - More than one race, 2.0%.

Overview of Healthcare Expenditures in the United States

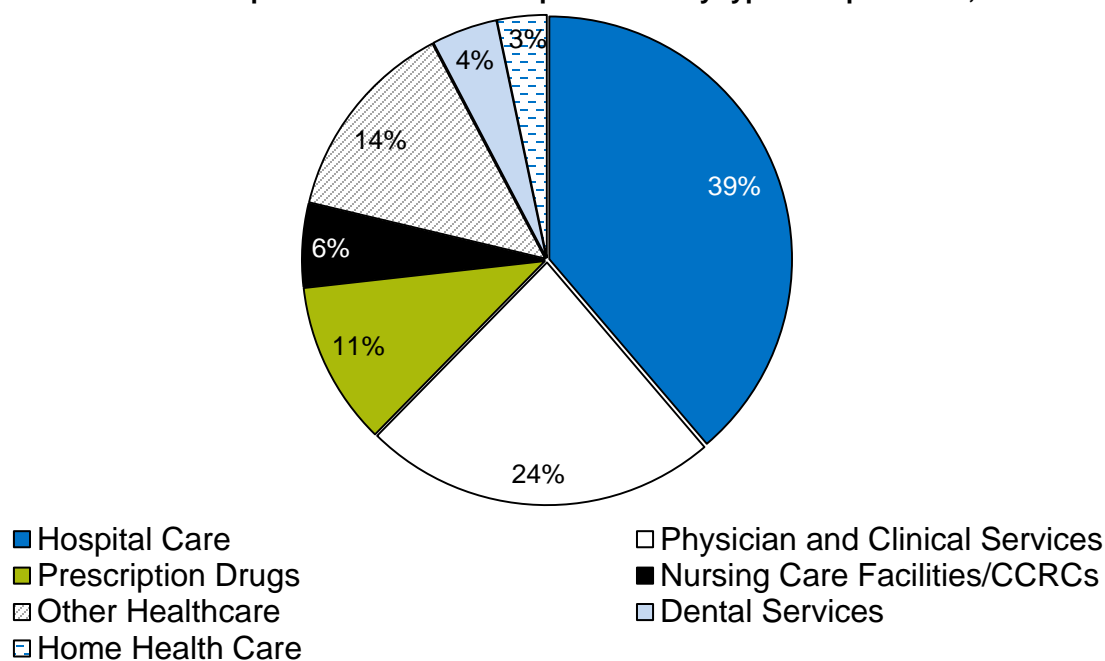
- In 2018, national health expenditures totaled about \$3.6 trillion, excluding administrative and investment costs.²⁹
- Hospital expenditures grew 4.5% to \$1,191.8 billion in 2018, slightly slower than the 4.7% growth in 2017.

- Physician and clinical services expenditures grew 4.1% to \$725.6 billion in 2018, a slower growth than the 4.7% in 2017.
- Prescription drug spending increased 2.5% to \$335.0 billion in 2018, faster than the 1.4% growth in 2017.
- In 2018, the federal government and households each accounted for 28% of healthcare spending (the largest shares), followed by private businesses (20%), state and local governments (17%), and other private revenues (7%). Federal government spending on health accelerated in 2018, increasing 5.6% after 2.8% growth in 2017.

Personal Healthcare Expenditures

“Personal healthcare expenditures” measures the total amount spent to treat individuals with specific medical conditions. It comprises all of the medical goods and services used to treat or prevent a specific disease or condition in a specific person. These include hospital care; professional services; other health, residential, and personal care; home health care; nursing care facilities and continuing care retirement communities; and retail outlet sales of medical products.³⁰

Figure 25. Distribution of personal healthcare expenditures by type of expenditure, 2018



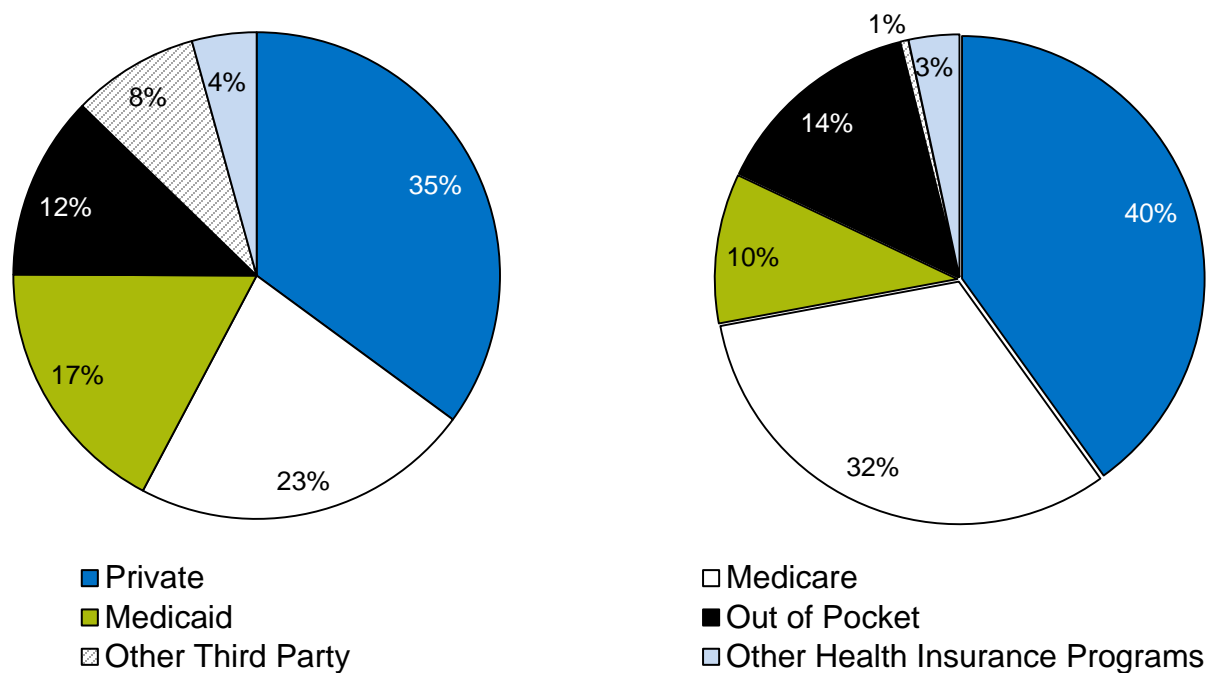
Key: CCRCs = continuing care retirement communities.

Source: Centers for Medicare & Medicaid Services, National Health Expenditures by type of service and source of funds, CY 1960-2018. <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.html>.

Note: Percentages do not add to 100 due to rounding. Personal healthcare 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. Other Healthcare refers to other professional services, other health, residential, and personal care expenses, durable medical equipment, and non-durable medical products.

- In 2018, hospital care expenditures were \$1,191.8 billion, nearly 40% of personal healthcare expenditures (Figure 25).
- Expenditures for physician and clinical services were \$725.6 billion, almost one-fourth of personal healthcare expenditures.
- Prescription drug expenditures were \$335.0 billion, 11% of personal healthcare expenditures.
- Expenditures for dental services were \$135.6 billion, 4% of personal healthcare expenditures.
- Nursing care facility expenditures were \$168.5 billion and home health care expenditures were \$102.2 billion, 6% and 3% of personal healthcare expenditures, respectively.

Figure 26. Personal healthcare expenditures (left) and prescription drug expenditures (right), by source of funds, 2018



Source: Left chart: Centers for Medicare & Medicaid Services, National Health Expenditures by type of service and source of funds, CY 1960-2018; and NHE Tables 6, 7, 8, 12, 14, and 15. Right chart: Centers for Medicare & Medicaid Services, NHE Table 16, Retail Prescription Drugs Expenditures; Levels, Percent Change, and Percent Distribution, by Source of Funds: Selected Calendar Years 1970-2018.

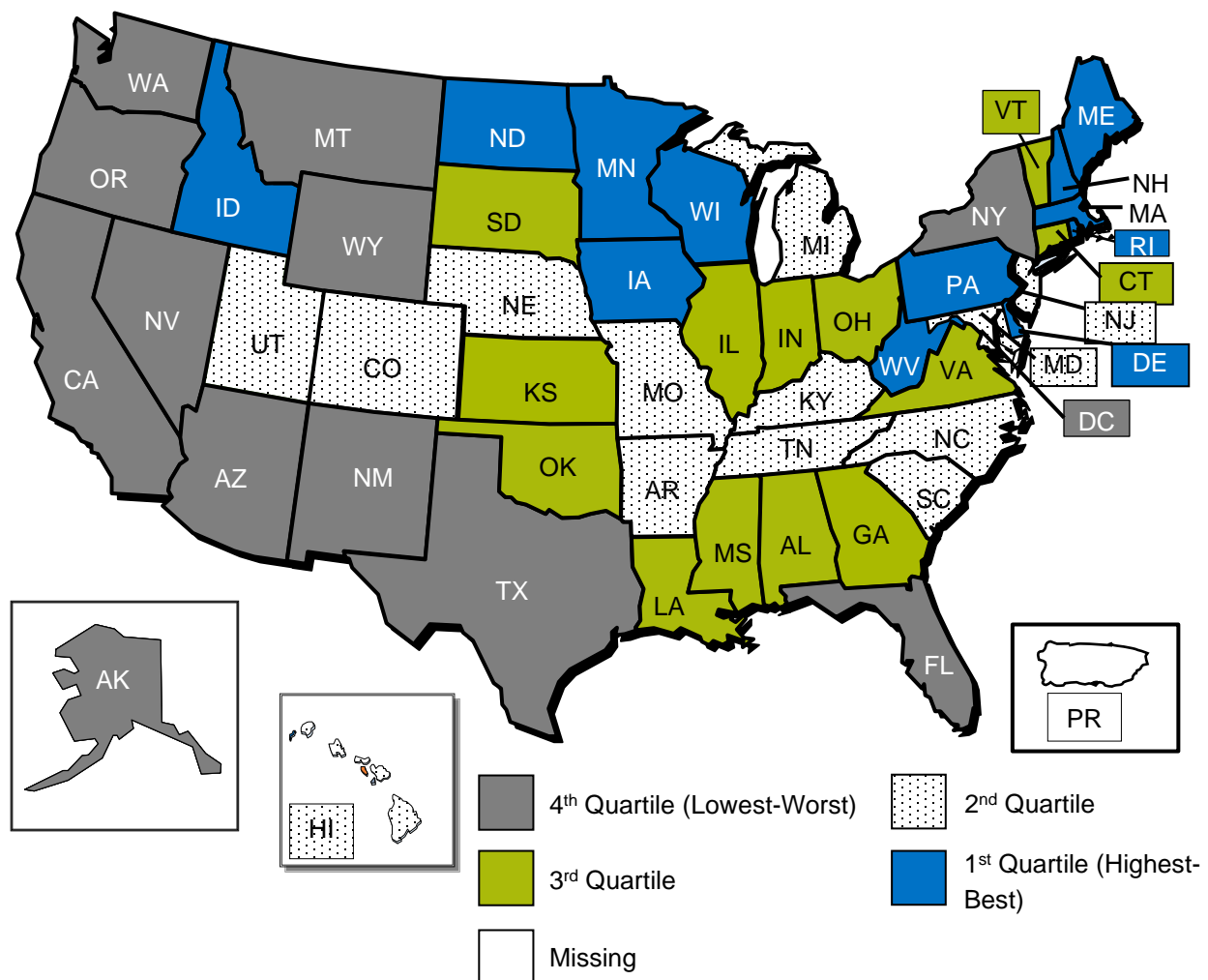
Note: Data for both figures are available at <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.html>. Percentages may not add to 100 due to rounding. Personal healthcare expenditures are outlays for goods 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. Other health insurance programs include Children's Health Insurance Program (Titles XIX and XXI) and programs available through the Department of Defense and the Department of Veterans Affairs. Other third party payers may include worksite healthcare, other private venues, Indian Health Service, workers' compensation, general assistance, maternal and child health programs, vocational rehabilitation programs, other federal programs, Substance Abuse and Mental Health Services Administration, other state and local programs, and school health programs.

- In 2018, private insurance accounted for 35% of personal healthcare expenditures, followed by Medicare (23%), Medicaid (17%), and out of pocket (12%; Figure 26).
- Sources of funds varied by type of expenditure (data not shown):
 - Private insurance accounted for 40% of hospital, 43% of physician, 12% of home health, 10% of nursing home, 46% of dental, and 40% of prescription drug expenditures.
 - Medicare accounted for 25% of hospital, 23% of physician, 39% of home health, 23% of nursing home, 0.9% of dental, and 32% of prescription drug expenditures.
 - Medicaid accounted for 16% of hospital, 11% of physician, 35% of home health, 30% of nursing home, 9% of dental, and 10% of prescription drug expenditures.
 - Out-of-pocket payments accounted for 3% of hospital, 8% of physician, 10% of home health, 27% of nursing home, 40% of dental, and 14% of prescription drug expenditures.
- In 2018, retail prescription drug expenditures were \$335.0 billion. Patients paid 14% of these expenses out of pocket, totaling \$47.1 billion. All other health insurance entities, including private health insurance, Medicare, Medicaid, and other health insurance programs accounted for 85% of the total costs (\$286.2 billion).
 - Private health insurance companies accounted for 40% of retail drug expenses (\$134.3 billion in 2018).
 - Medicare accounted for 32.0% of retail drug expenses (\$107.2 billion).
 - Medicaid accounted for 10.0% of retail drug expenses (\$33.4 billion).
 - Other health insurance programs consisted of the Children's Health Insurance Program (Titles XIX and XXI) and programs available through the Department of Defense and the Department of Veterans Affairs. These programs accounted for 3.4% of retail drug expenses (\$11.3 billion).
 - Other third-party payers had the smallest percentage of costs (0.5%), which represented \$1.8 billion in retail drug costs. These expenses were incurred by a variety of sources, including worksite healthcare, other private venues, Indian Health Service, workers' compensation, general assistance, maternal and child health programs, vocational rehabilitation programs, other federal programs, Substance Abuse and Mental Health Services Administration, other state and local programs, and school health programs.

Variation in Healthcare Quality

State-level data show that healthcare 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 healthcare access or disparities within specific areas of quality.

Figure 27. Overall quality of care, by state, 2014-2018



Note: All state-level measures with 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 fourth quartile, and states with the best quality score are in the first quartile. Historically, the NHQDR has included state-specific estimates for selected AHRQ Quality Indicators (QIs) based on Healthcare Cost and Utilization Project (HCUP) data. The 2019 NHQDR does not include state-specific QI estimates based on 2017 HCUP data because the International Classification of Diseases, Tenth Revision, Clinical Modification/Procedure Coding System version of the QI software used did not include risk adjustment. State-specific QIs will be reported in future NHQDRs when the estimates can be risk adjusted.

- Overall quality of care varied across the United States (Figure 27):
 - Some states in the Northeast (Delaware, Maine, Massachusetts, New Hampshire, Pennsylvania, and Rhode Island), some in the Midwest (Iowa, Minnesota, North Dakota, and Wisconsin), and Idaho and West Virginia 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.
 - Some Southern and Southwestern states (District of Columbia,^{iv} New Mexico, and Texas), several Western states (Arizona, California, and Nevada), some Northwestern states (Montana, Oregon, Washington, and Wyoming), and Florida, New York, and Alaska had the lowest overall quality scores.
 - More information about healthcare quality in each state can be found on the NHQDR website, <https://nhqrnet.ahrq.gov/inhqdr/state/select>.

^{iv} For purposes of the NHQDR, the District of Columbia is treated as a state.

ACCESS TO HEALTHCARE AND DISPARITIES IN ACCESS

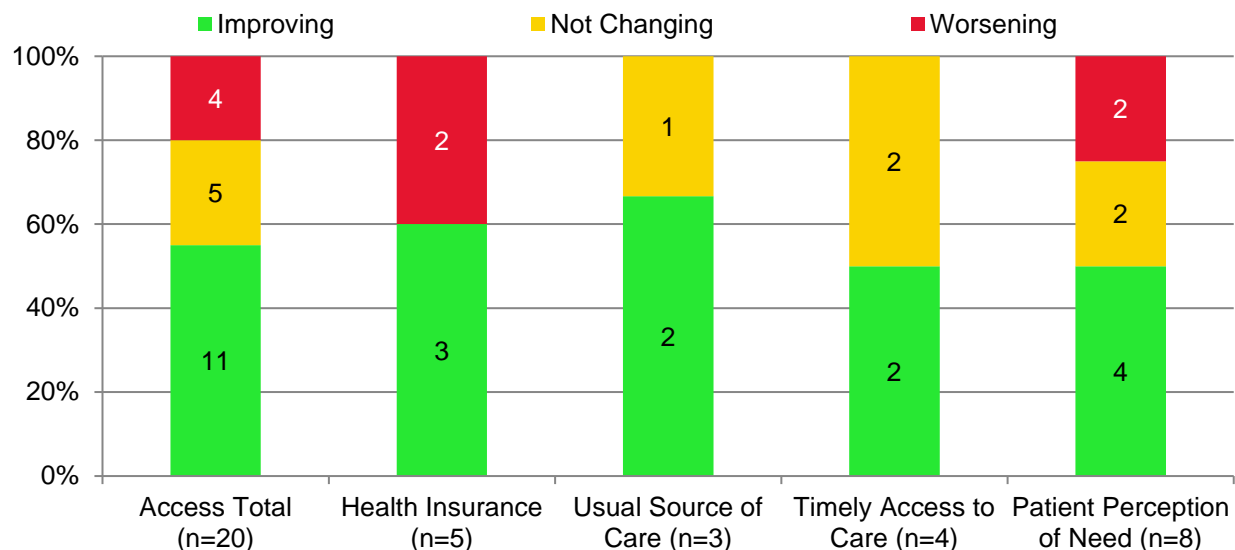
Access to healthcare means having “the timely use of personal health services to achieve the best health outcomes.”¹ Access to comprehensive, quality healthcare services is important for promoting and maintaining health, preventing and managing disease, reducing unnecessary disability and premature death, and achieving health equity for all Americans.² Attaining good access to care means having:

- Health insurance that facilitates entry into the healthcare system.
- Timely access to needed care.
- A usual source of care with whom the patient can develop a relationship.
- The ability to receive care when there is a perceived need for care.

Measures of access to care tracked in the NHQDR 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.³ This report discusses findings that showed the largest statistically significant disparities related to some of these variables for which data were available.

Figure 1. Number and percentage of access measures for which measures were improving, not changing, or worsening, by access area, 2000 through 2016, 2017, or 2018



Key: n = number of measures.

Note: Worsening Health Insurance measures include adults age 65 and over with any private insurance. However, the figures in this section do not include this measure, because the data are open to interpretation. While the percentage of people age 65 and over with any private insurance has decreased, it is not “worsening,” per se, and does not necessarily represent gaps in access to care. The decrease might represent a shift in the insurance market, with people opting for Medicare Advantage.

For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percentage change and to assess statistical significance. Progress on individual measures is determined as follows:

- **Improving** = The average annual percentage change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing** = The average annual percentage change is less than 1% in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening** = The average annual percentage change is 1% or greater in the undesirable direction, and $p < 0.10$.
- Overall, 11 access measures were improving and 4 were worsening (Figure 1).
- Of the measures that showed improvement:
 - Three were measures of health insurance.
 - Two measures related to usual source of care.
 - Two were measures of timely access to care.
 - Four measures related to patient perception of need.
- Access measures that showed worsening trends include:
 - Two measures of health insurance.
 - Two measures of patient perception of need.

Table 1. Health Insurance Availability Measures

Measure Title (Data Source)	Trend Result
People under age 65 with health insurance (NHIS)	Improving
People under age 65 who were uninsured all year (MEPS)	Improving
People under age 65 with any period of uninsurance during the year (MEPS)	Improving
Adults age 65 and over with any private health insurance (NHIS) ⁱ	Worsening
People under age 65 with any private health insurance (NHIS) ⁱ	Worsening

Table 2. Usual Source of Care Measures

Measure Title (Data Source)	Trend Result
People with a specific source of ongoing care (NHIS)	Improving
People in fair or poor health with a specific source of ongoing care (NHIS)	Improving
People with a usual primary care provider (MEPS)	Not Changing

Table 3. Timely Access: Wait Time Measures

Measure Title (Data Source)	Trend Result
Adults who reported getting the help or advice they needed the same day they contacted their home health providers (HHCAHPS)	Not Changing

Table 4. Timely Access: Getting Appointments for Care Measures

Measure Title (Data Source)	Trend Result
Children who had any appointments for routine healthcare in the last 12 months who sometimes or never got an appointment for routine care as soon as needed (MEPS)	Improving
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 (MEPS)	Improving
Adults who had any appointments for routine healthcare in the last 12 months who sometimes or never got an appointment for routine care as soon as needed (MEPS)	Not Changing

ⁱ The figures in this section do not include this measure due to issues with interpretation. While the percentage of adults age 65 and over with any private insurance decreased, it is not “worsening,” per se, and might represent shifts in the insurance market. Some people might opt for Medicare Advantage.

Table 5. Patient Perception of Need Measures

Measure Title (Data Source)	Trend Result
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 (MEPS)	Improving
People with a usual source of care who is somewhat to very difficult to contact during regular business hours over the telephone (MEPS)	Improving
People who were unable to get or delayed in getting needed dental care in the last 12 months (MEPS)	Improving
People who were unable to get or delayed in getting needed medical care in the last 12 months (MEPS)	Improving
People who were unable to get or delayed in getting needed prescription medicines in the last 12 months (MEPS)	Not Changing
People with a usual source of care, excluding hospital emergency rooms, who has office hours at night or on weekends (MEPS)	Not Changing
Children 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 (MEPS)	Worsening
Children who needed to see a specialist in the last 12 months who sometimes or never found it easy to see a specialist (MEPS)	Worsening

Health Insurance

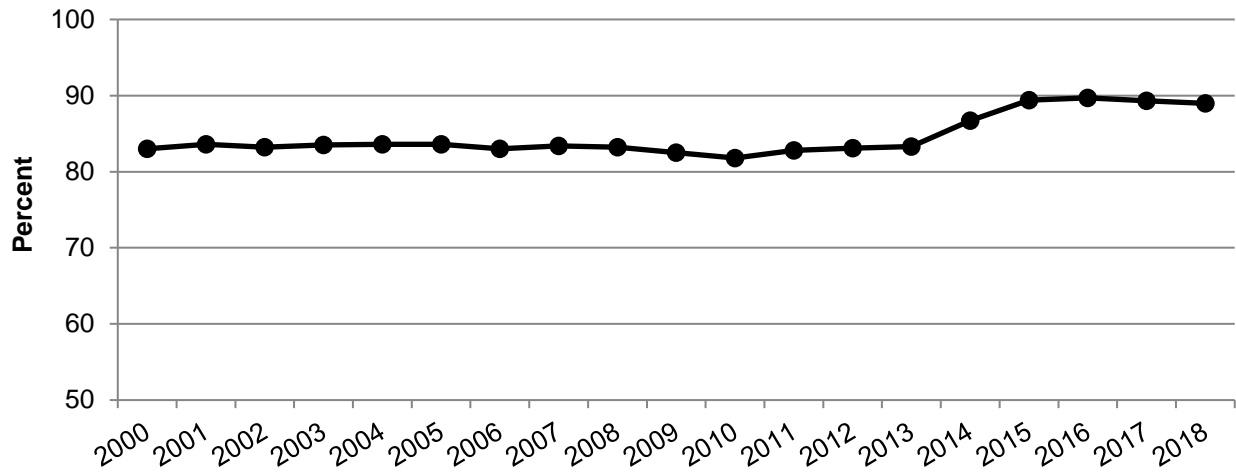
Increased health insurance coverage is associated with statistically significant and clinically relevant improvements for low-income adults, including access to care, use of preventive services, and self-reported health. Among those with chronic conditions, increased coverage is linked to improved medication adherence, more regular communication with physicians, and improved perceived health status.⁴

Improving Measures

The three measures of health insurance that improved were:

- People under age 65 with health insurance.
- People under age 65 who were uninsured all year.
- People under age 65 with any period of uninsurance during the year.

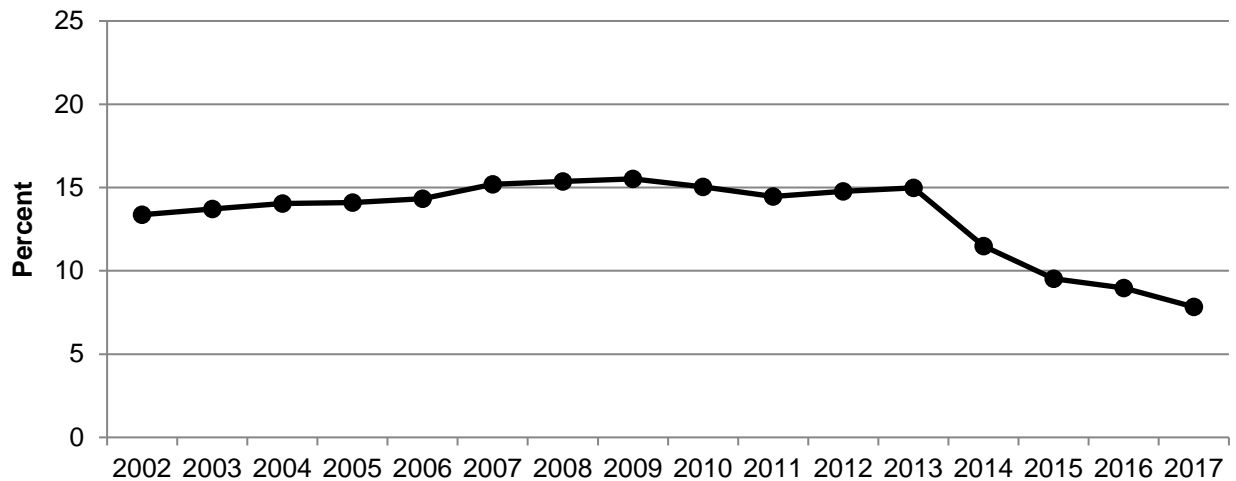
Figure 2. People under age 65 with health insurance, 2000-2018



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2000-2018.

- From 2000 to 2018, the percentage of people under age 65 with health insurance increased from 83.0% to 89.0% (Figure 2).

Figure 3. People under age 65 who were uninsured all year, 2002-2017

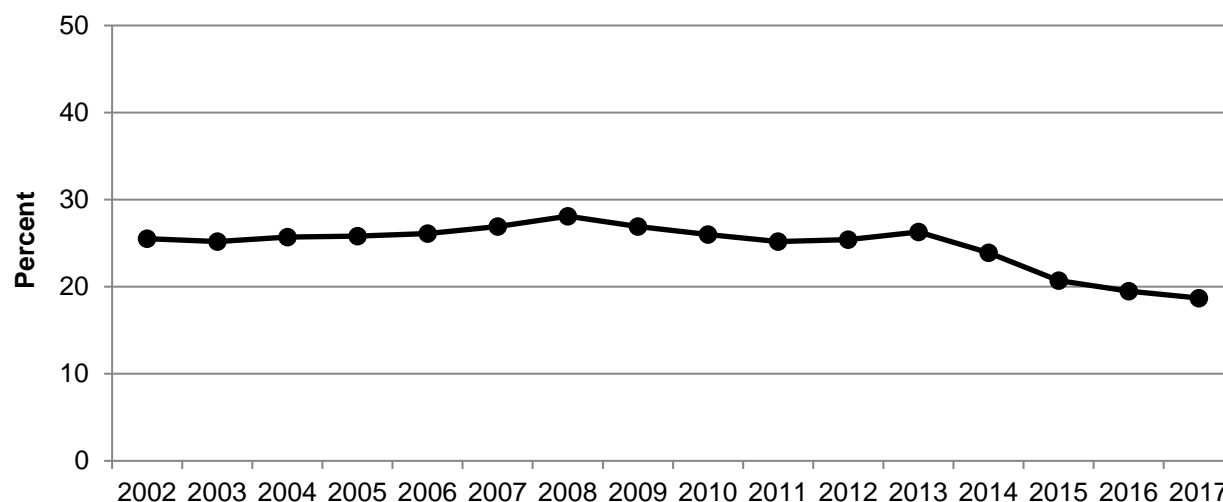


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

Note: For this measure, lower rates are better.

- From 2002 to 2017, the percentage of people under age 65 who were uninsured all year decreased from 13.4% to 7.8% (Figure 3).

Figure 4. People under age 65 with any period of uninsurance during the year, 2002-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

Note: For this measure, lower rates are better.

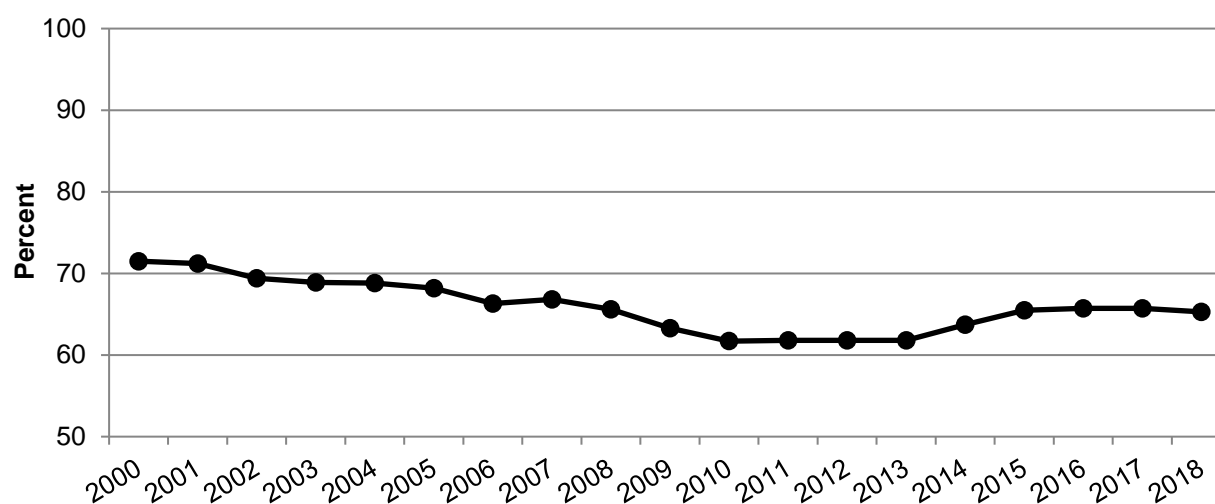
- From 2002 to 2017, the percentage of people under age 65 with any period of uninsurance during the year decreased from 25.5% to 18.7% (Figure 4).

Worsening Measures

The two measures of insurance that worsened were:

- Adults age 65 and over with any private health insurance (figure not included because of difficulty interpreting results).ⁱⁱ
- People under age 65 with any private health insurance.

ⁱⁱ The figure is not shown for adults age 65 and over with any private insurance, because the decrease might represent a shift in the insurance market rather than gaps in access. Some people might have Medicare Advantage.

Figure 5. People under age 65 with any private health insurance, 2000-2018

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2000-2018.

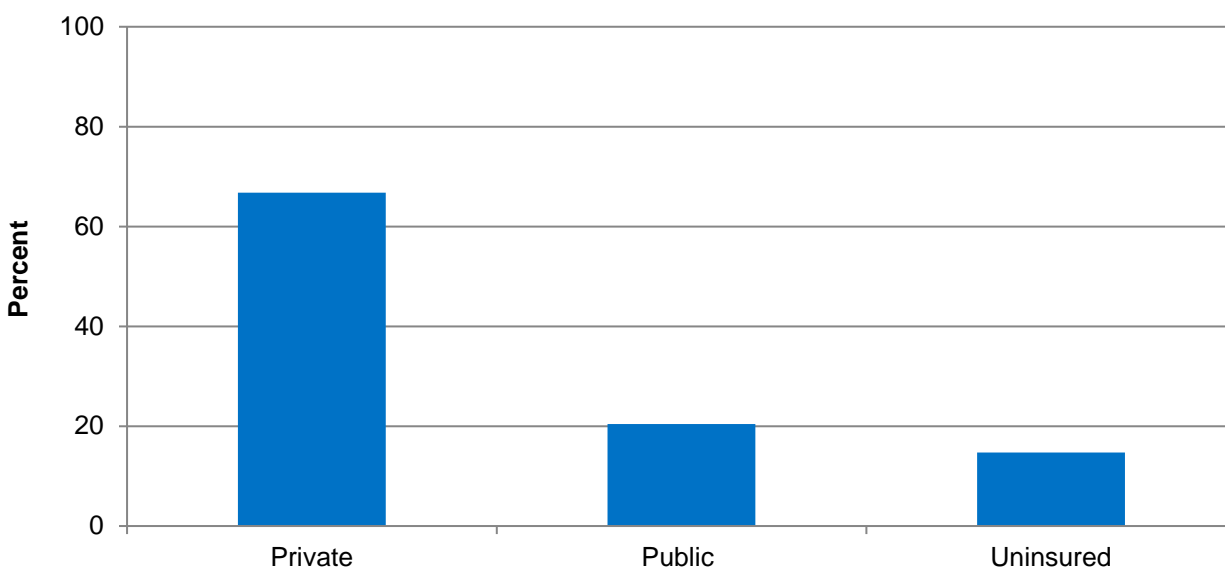
- From 2000 to 2018, the percentage of people under age 65 with any private health insurance decreased from 71.5% to 65.3% (Figure 5).

Health Insurance Coverage: Early Release Program

In previous years, the NHQDR included the CDC's National Center for Health Statistics (NCHS) National Health Interview Survey (NHIS) Early Release Program selected estimates of data regarding health and healthcare for the civilian noninstitutionalized U.S. population. The 2019 NHQDR includes estimates of health insurance coverage for the civilian noninstitutionalized U.S. population based on data from the January-June 2019 NHIS. These estimates are being published prior to final data editing and final weighting to provide access to the most recent information from NHIS. The 2019 NHIS has been redesigned, so comparisons between 2019 and prior data years are not being made.

The *Early Release of Estimates From the National Health Interview Survey* are not included in the summary analyses presented in this report. Final 2019 estimates will be included in the 2020 NHQDR. More information about the estimates are available on the NHIS website (<https://www.cdc.gov/nchs/nhis.htm>).

Figure 6. Adults ages 18-64 who were uninsured or had private or public coverage at the time of interview, 2019

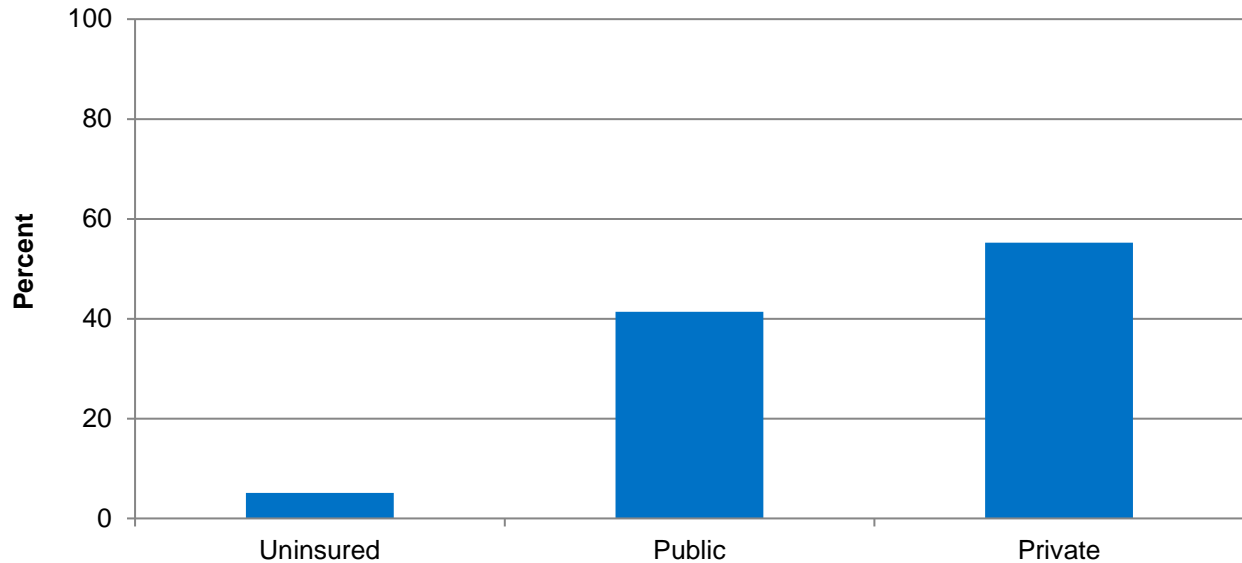


Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey Early Release Program, May 2020. <https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur202009-508.pdf>.

Note: People were defined as uninsured if they did not have any private health insurance, Medicare, Medicaid, Children's Health Insurance Program (CHIP), state-sponsored or other government plan, or military plan. People were also defined as uninsured if they had only Indian Health Service coverage or had only a private plan that paid for one type of service, such as accidents or dental care. Public coverage includes Medicaid, CHIP, state-sponsored or other government-sponsored health plan, Medicare, and military plans. Private coverage includes any comprehensive private insurance plan (including health maintenance and preferred provider organizations). These plans include those obtained through an employer, purchased directly, purchased through local or community programs, or purchased through the Health Insurance Marketplace or a state-based exchange. Private coverage excludes plans that pay for only one type of service, such as accidents or dental care. A small number of people were covered by both public and private plans and were included in both categories. Data are based on household interviews of a sample of the civilian noninstitutionalized population.

- In 2019, 33.2 million people of all ages (10.3%) were uninsured at the time of interview (data not shown).
- In 2019, among adults ages 18-64, 14.7% were uninsured at the time of interview, 20.4% had public coverage, and 66.8% had private health insurance coverage (Figure 6).

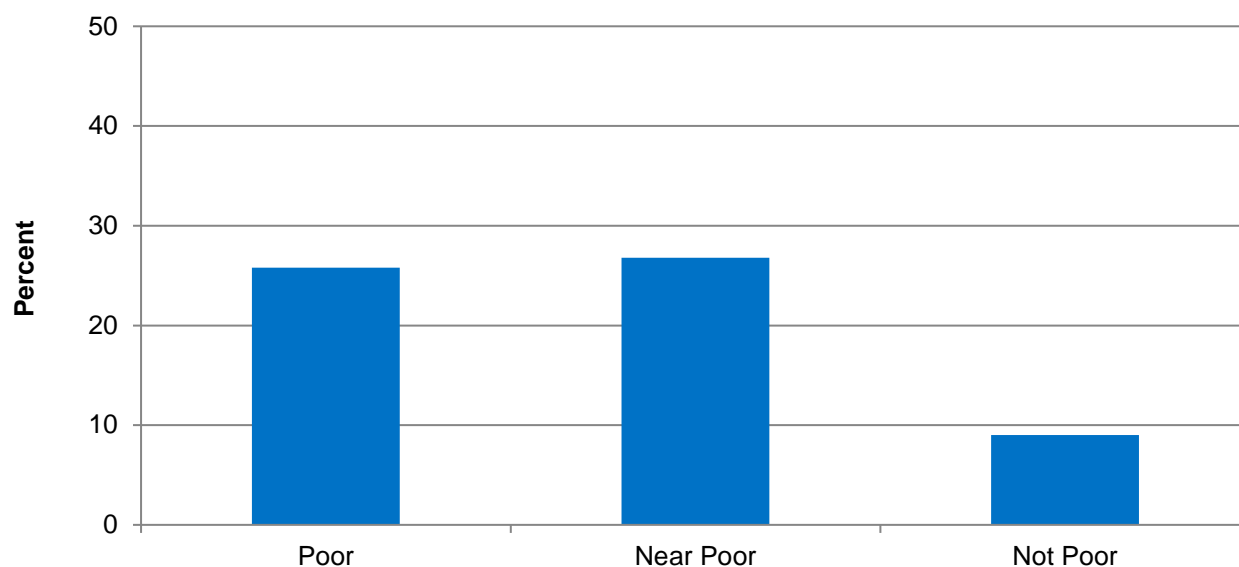
Figure 7. Children ages 0-17 years who were uninsured or had private or public coverage at the time of interview, 2019



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey Early Release Program, May 2020. <https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur202009-508.pdf>.

Note: People were defined as uninsured if they did not have any private health insurance, Medicare, Medicaid, Children's Health Insurance Program (CHIP), state-sponsored or other government plan, or military plan. People were also defined as uninsured if they had only Indian Health Service coverage or had only a private plan that paid for one type of service, such as accidents or dental care. Public coverage includes Medicaid, CHIP, state-sponsored or other government-sponsored health plan, Medicare, and military plans. Private coverage includes any comprehensive private insurance plan (including health maintenance and preferred provider organizations). These plans include those obtained through an employer, purchased directly, purchased through local or community programs, or purchased through the Health Insurance Marketplace or a state-based exchange. Private coverage excludes plans that pay for only one type of service, such as accidents or dental care. A small number of people were covered by both public and private plans and were included in both categories. Data are based on household interviews of a sample of the civilian noninstitutionalized population.

- In 2019, among children ages 0-17 years, 5.1% were uninsured, 41.4% had public coverage, and 55.2% had private health insurance coverage (Figure 7).

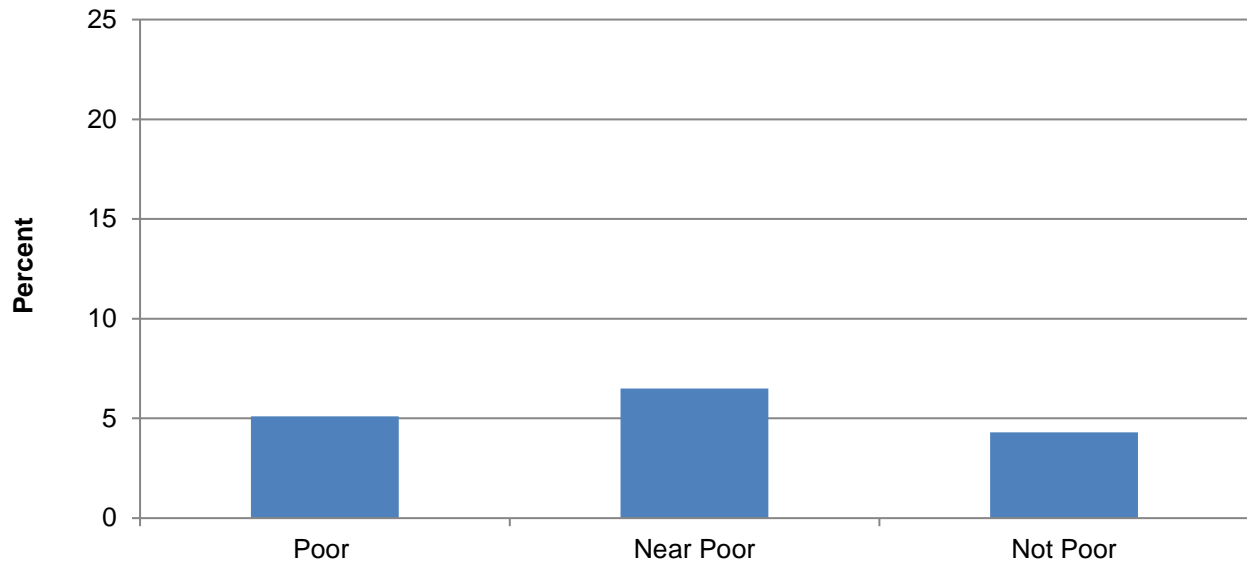
Figure 8. Adults ages 18-64 who were uninsured at the time of interview, by poverty status, 2019

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey Early Release Program, May 2020. <https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur202009-508.pdf>.

Note: For this measure, lower rates are better. Poverty categories are based on the ratio of the family's income in the previous calendar year to the appropriate poverty threshold (given the family's size and number of children), as defined by the U.S. Census Bureau for that year (Semega JL, Kollar MA, Creamer J, Mohanty A. Income and poverty in the United States: 2018. Current Population Reports, P60-266. 2019. <https://www.census.gov/content/dam/Census/library/publications/2019/demo/p60-266.pdf>). People categorized as "poor" have a ratio less than 1.0 (i.e., their family income is below the federal poverty level); "near poor" people have incomes of 100% to less than 200% of the federal poverty level; and "not poor" people have incomes that are 200% of the federal poverty level or greater. The percentage of respondents under age 65 with unknown poverty status in 2019 was 7.7%. People with unknown poverty status are not shown in this graph. Estimates may differ from estimates that are based on both reported and imputed income. People were defined as uninsured if they did not have any private health insurance, Medicare, Medicaid, Children's Health Insurance Program (CHIP), state-sponsored or other government-sponsored health plan, or military plan. People were also defined as uninsured if they had only Indian Health Service coverage or had only a private plan that paid for one type of service, such as accidents or dental care.

- In 2019, among adults ages 18-64, the percentage who were uninsured at the time of interview was higher among those who were poor (25.8%) and near poor (26.8%) compared with those who were not poor (9.0%) (Figure 8).

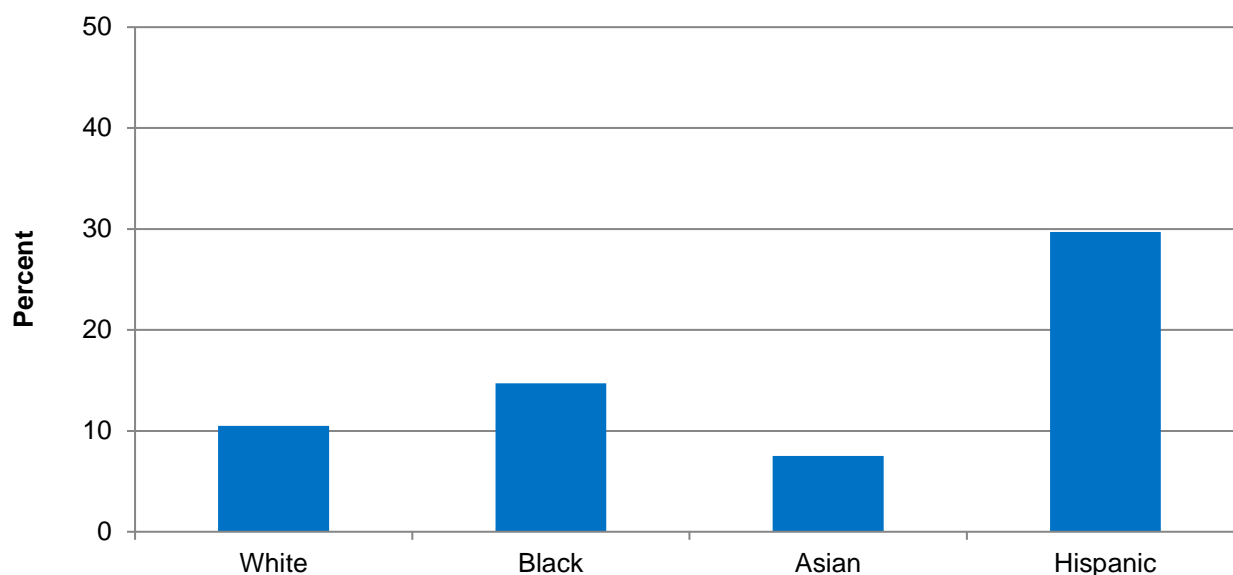
Figure 9. Children ages 0-17 years who were uninsured at the time of interview, by poverty status, 2019



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey Early Release Program, May 2020. <https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur202009-508.pdf>.

Note: For this measure, lower rates are better. Poverty categories are based on the ratio of the family's income in the previous calendar year to the appropriate poverty threshold (given the family's size and number of children), as defined by the U.S. Census Bureau for that year (Semega JL, Kollar MA, Creamer J, Mohanty A. Income and poverty in the United States: 2018. Current Population Reports, P60-266. 2019. <https://www.census.gov/content/dam/Census/library/publications/2019/demo/p60-266.pdf>). People categorized as "poor" have a ratio less than 1.0 (i.e., their family income is below the federal poverty level); "near poor" people have incomes of 100% to less than 200% of the federal poverty level; and "not poor" people have incomes that are 200% of the federal poverty level or greater. The percentage of respondents under age 65 with unknown poverty status in the first two quarters of 2019 was 7.7%. People with unknown poverty status are not shown in this graph. Estimates may differ from estimates that are based on both reported and imputed income. People were defined as uninsured if they did not have any private health insurance, Medicare, Medicaid, Children's Health Insurance Program (CHIP), state-sponsored or other government-sponsored health plan, or military plan. People were also defined as uninsured if they had only Indian Health Service coverage or had only a private plan that paid for one type of service, such as accidents or dental care.

- In 2019, among children ages 0-17 years, 5.1% of those from poor households were uninsured, 6.5% of those from near-poor households were uninsured, and 4.3% of those from households that were not poor were uninsured (Figure 9).

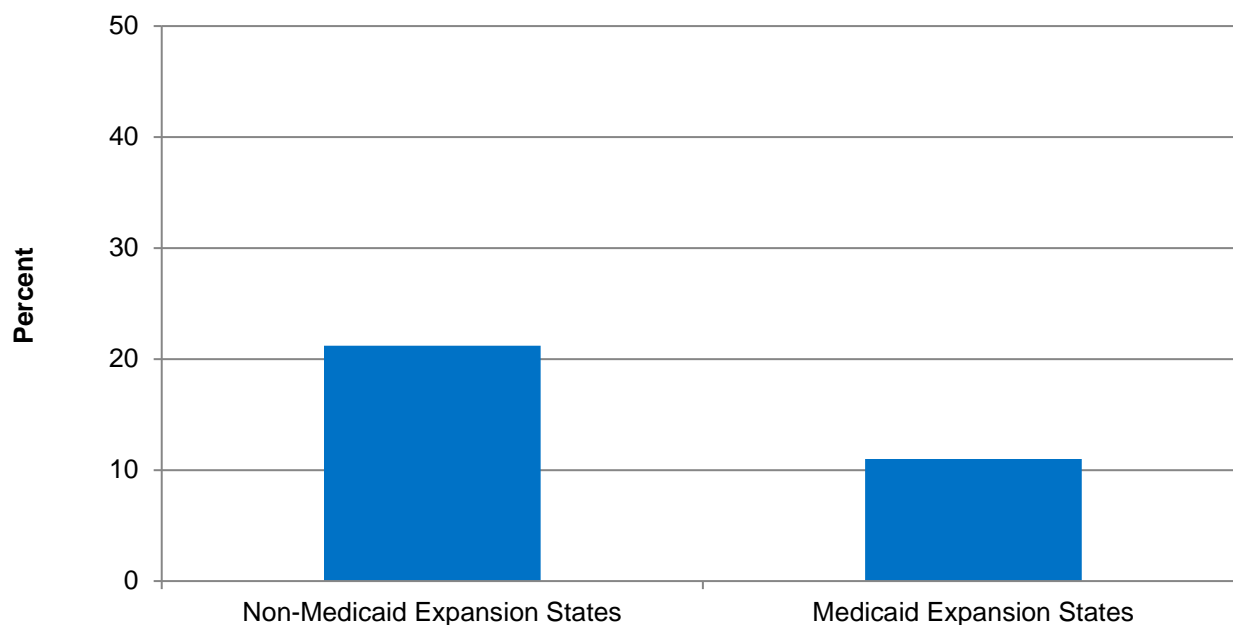
Figure 10. Adults ages 18-64 who were uninsured at the time of interview, by race/ethnicity, 2019

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey Early Release Program, May 2020. <https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur202009-508.pdf>.

Note: For this measure, lower rates are better. White, Black, and Asian are non-Hispanic. Hispanic includes all races. Data for Native Hawaiians/Pacific Islanders and American Indians and Alaska Natives are not available for this measure. People were defined as uninsured if they did not have any private health insurance, Medicare, Medicaid, Children's Health Insurance Program (CHIP), state-sponsored or other government-sponsored health plan, or military plan. People were also defined as uninsured if they had only Indian Health Service coverage or had only a private plan that paid for one type of service, such as accidents or dental care.

- In 2019, Hispanic adults were the most likely to lack health insurance coverage, while non-Hispanic White and non-Hispanic Asian adults were the least likely to be uninsured. Non-Hispanic Black adults were more likely than non-Hispanic White and non-Hispanic Asian adults to be uninsured (Figure 10).
- In 2019, 29.7% of Hispanic, 14.7% of non-Hispanic Black, 10.5% of non-Hispanic White, and 7.5% of non-Hispanic Asian adults ages 18-64 were uninsured at the time of interview.

Figure 11. Adults ages 18-64 who were uninsured at the time of interview, by state Medicaid expansion status, 2019



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey Early Release Program, May 2020. <https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur202009-508.pdf>.

Note: For this measure, lower rates are better. People were defined as uninsured if they did not have any private health insurance, Medicare, Medicaid, Children's Health Insurance Program (CHIP), state-sponsored or other government plan, or military plan. People were also defined as uninsured if they had only Indian Health Service coverage or had only a private plan that paid for one type of service, such as accidents or dental care. Under provisions of the Affordable Care Act of 2010 (P.L. 111-148, P.L. 111-152), states have the option to expand Medicaid eligibility to cover adults who have income up to and including 138% of the federal poverty level. There is no deadline for states to choose to implement the Medicaid expansion, and they may do so at any time. As of January 1, 2019, 33 states and the District of Columbia moved forward with Medicaid expansion.

- In 2019, among adults ages 18-64, those living in non-Medicaid expansion states (21.2%) were twice as likely as those living in Medicaid expansion states (11.0%) to be uninsured at the time of interview (Figure 11).

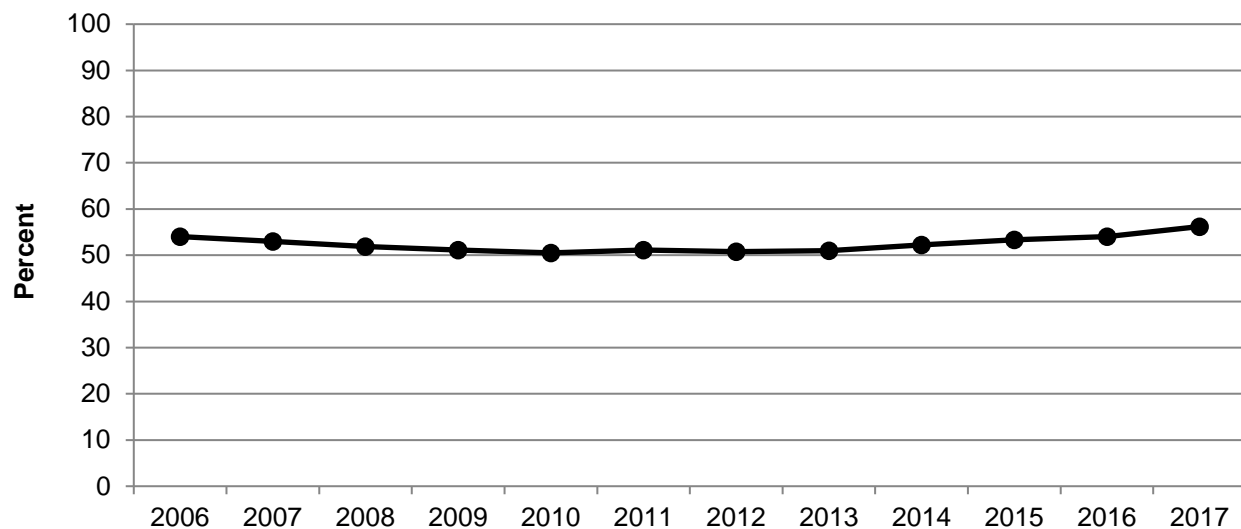
Dental Insurance

Dental caries, or tooth decay, is a common chronic disease that can cause pain, suffering, and diminished quality of life throughout one's lifespan.⁵ Left untreated, tooth decay can progress and lead to infection, tooth loss, and more complex and expensive treatments. Untreated tooth decay can affect essential aspects of daily living, including eating, speaking, and performing at home, school, or work.⁵

Oral health issues can also affect other areas of health, and lack of access to dental care compounds the problem. For example, people without dental insurance are more likely to have heart disease, diabetes, and osteoporosis. People with dental insurance are more

likely to visit a dental professional, take their children to a dental professional, receive recommended preventive screenings and treatments, and have better overall health.⁶

Figure 12. People under age 65 with any period of dental insurance during the year, 2006-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2006-2017.

- From 2006 to 2017, overall, there was no significant change in the percentage of people with any period of dental insurance (Figure 12).
- From 2006 to 2017, the percentage of high-income people with any period of dental insurance increased from 74.6% to 78.8% (data not shown).

Usual Source of Care

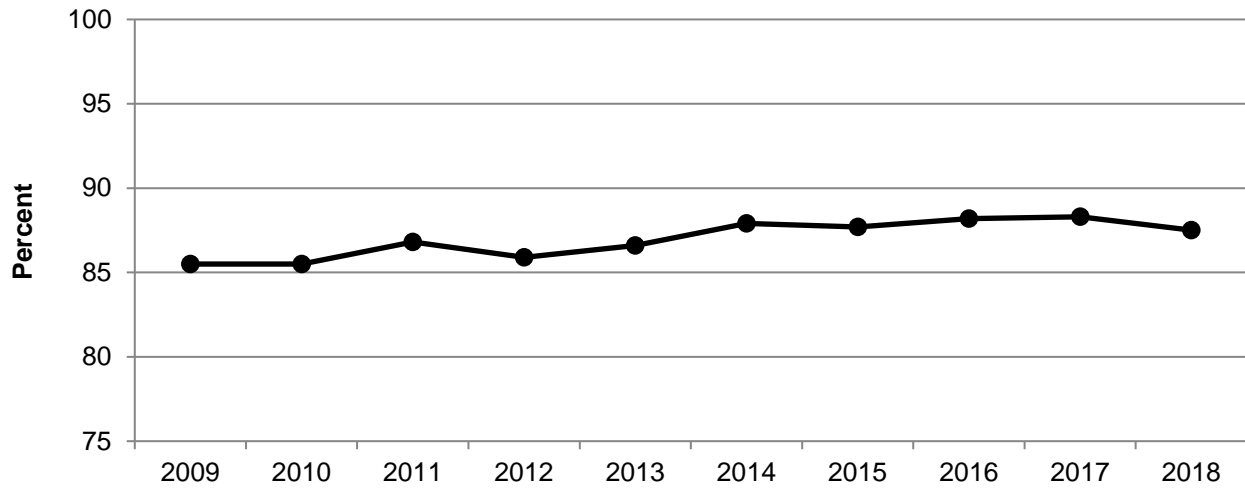
The AHRQ Medical Expenditure Panel Survey (MEPS) describes usual source of care (USC) as the particular medical professional, doctor's office, clinic, health center, or other place where a person would usually go if sick or in need of advice about his or her health.

Having a USC is associated with reductions in inpatient admissions for physical health conditions and behavioral health conditions. Having a USC is also associated with decreased admissions for ambulatory care-sensitive conditions, readmissions, and spending.⁷

The two measures related to USC that improved were:

- People with a specific source of ongoing care.
- People in fair or poor health with a specific source of ongoing care.

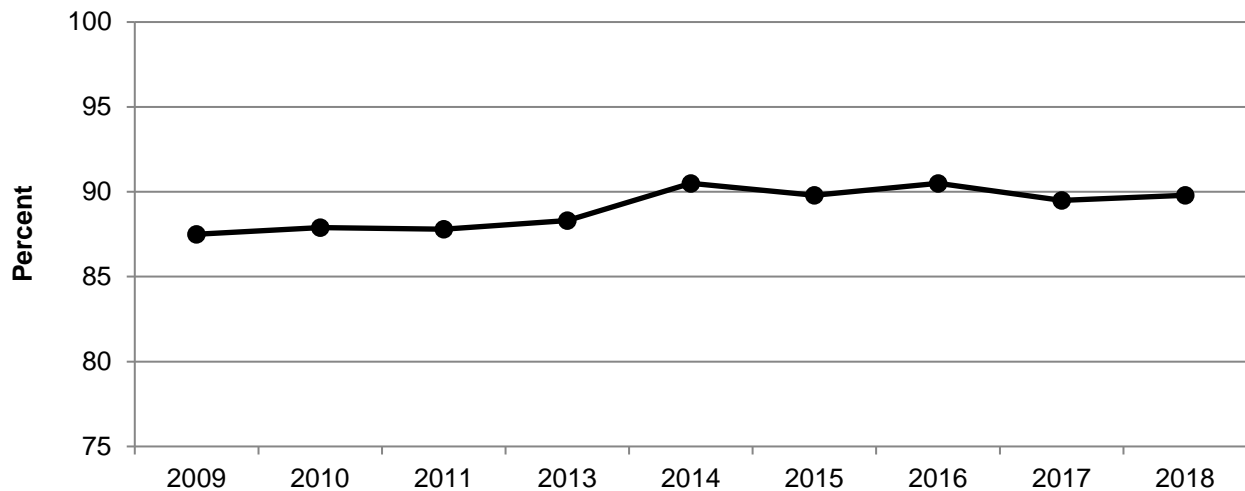
Figure 13. People with a specific source of ongoing care, 2009-2018



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2009-2018.

- From 2009 to 2018, the percentage of people with a specific source of ongoing care increased from 85.5% to 87.5% (Figure 13).

Figure 14. People in fair or poor health with a specific source of ongoing care, 2009-2018



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2009-2018.

- From 2009 to 2018, the percentage of people in fair or poor health with a specific source of ongoing care increased from 87.5% to 89.8% (Figure 14).

No measures related to USC showed a worsening trend.

Timely Access to Care

A patient's inability to obtain a timely healthcare appointment may result in various outcomes:

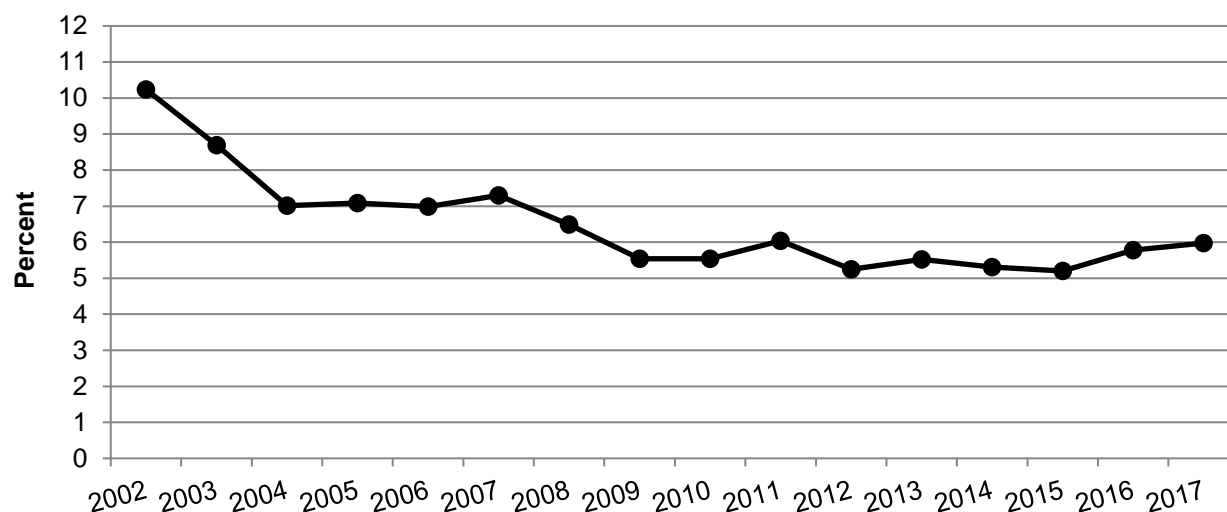
- The patient eventually seeing the desired healthcare providers,
- The patient obtaining healthcare elsewhere,
- The patient seeking an alternative form of care, or
- The patient not obtaining healthcare at all for the condition that led to the request for an appointment.

In any of these cases, the condition may worsen, improve (with or without treatment elsewhere), or continue until treated. Thus, long wait times may be associated with poorer health outcomes and financial burden from seeking non-network care and possibly more distant healthcare.⁸

The two measures related to timely care that improved were:

- Children who had any appointments for routine healthcare in the last 12 months who sometimes or never got an appointment for routine care as soon as needed.
- 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.

Figure 15. Children who had any appointments for routine healthcare in the last 12 months who sometimes or never got an appointment for routine care as soon as needed, 2002-2017

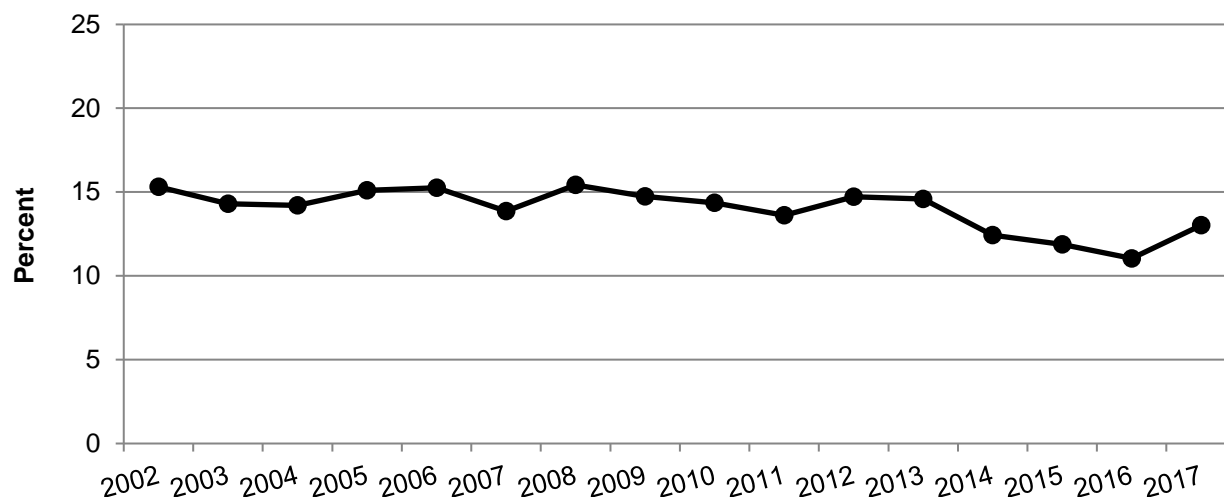


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

Note: For this measure, lower rates are better.

- From 2002 to 2017, the percentage of children who had any appointments for routine healthcare in the last 12 months who sometimes or never got an appointment for routine care as soon as needed decreased from 10.2% to 6.0% (Figure 15).

Figure 16. 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, 2002-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

Note: For this measure, lower rates are better.

- From 2002 to 2017, the percentage of 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 decreased from 15.3% to 13.0% (Figure 16).

No measures related to timely care showed a worsening trend, overall, but disparities still exist. These are discussed in the Disparities portion of this Access section.

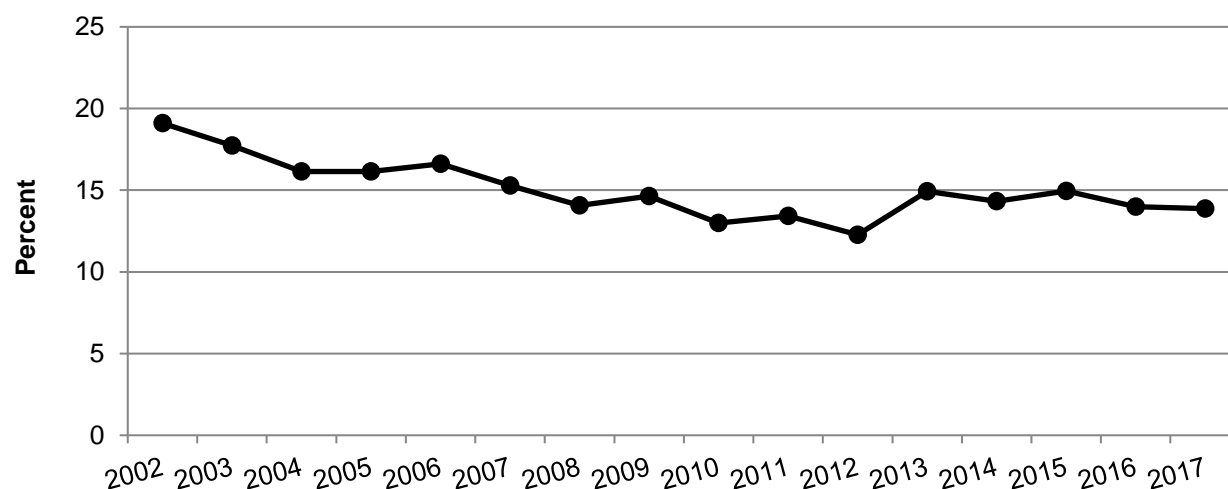
Perception of Need

According to the World Health Organization, perceived health need is the need for health services as experienced by individuals and may or may not coincide with professionally defined or scientifically confirmed needs. The challenges that patients encounter in managing their care reflect an important aspect of medical care. These challenges relate more to clinical outcomes than to traditional measures of patient satisfaction. They emphasize barriers that keep patients from fully engaging in care rather than judgments about how pleasant the experience is. Still, they are more firmly rooted in the patient's experience than are most clinical quality measures.⁹

The four measures of perception of need that improved were:

- 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.ⁱⁱⁱ
- People with a usual source of care who is somewhat to very difficult to contact during regular business hours over the telephone.
- People who were unable to get or delayed in getting needed dental care in the last 12 months.
- People who were unable to get or delayed in getting needed medical care in the last 12 months.

Figure 17. People with a usual source of care who is somewhat to very difficult to contact during regular business hours over the telephone, 2002-2017



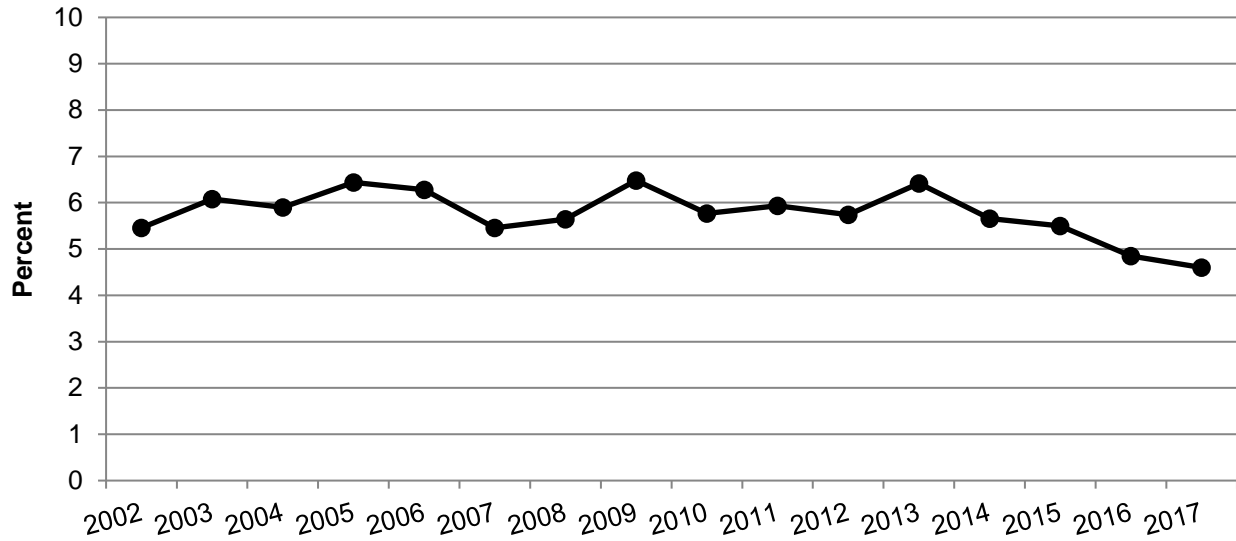
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

Note: For this measure, lower rates are better.

- From 2002 to 2017, the percentage of people with a usual source of care who is somewhat to very difficult to contact during regular business hours over the telephone decreased from 19.1% to 13.9% (Figure 17).

ⁱⁱⁱ Updated data for this measure were not available, so a figure was not included. The most recent data for the measure are available at the NHQDR Data Query page (<https://nhqrnet.ahrq.gov/inhqdr/data/query>).

Figure 18. People who were unable to get or delayed in getting needed dental care in the last 12 months, 2002-2017

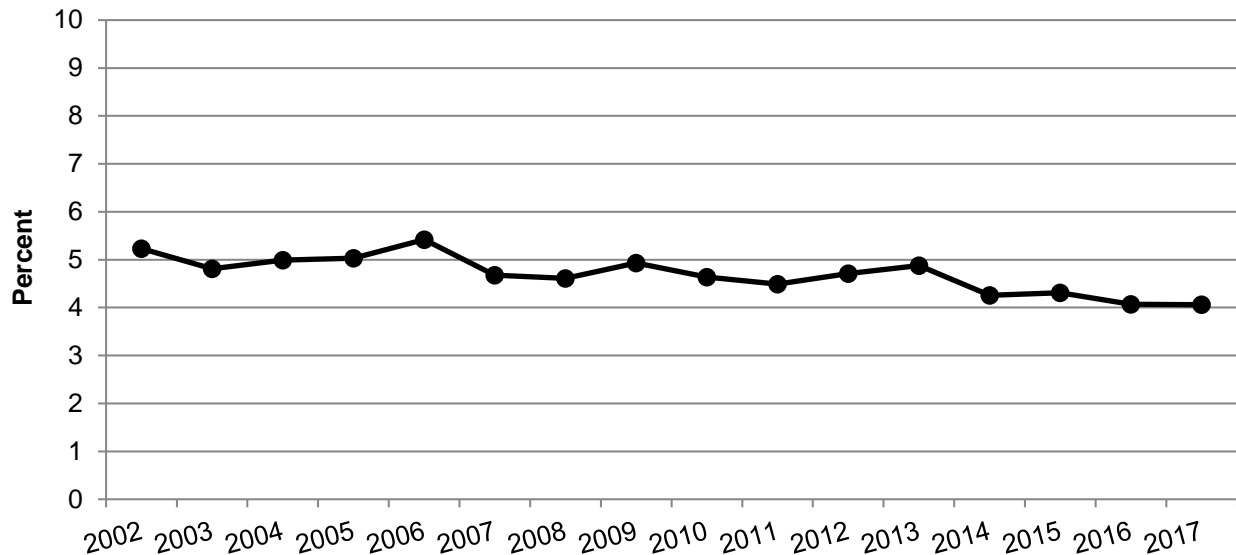


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

Note: For this measure, lower rates are better.

- From 2002 to 2017, the percentage of people who were unable to get or delayed in getting needed dental care in the last 12 months decreased from 5.5% to 4.6% (Figure 18).

Figure 19. People who were unable to get or delayed in getting needed medical care in the last 12 months, 2002-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

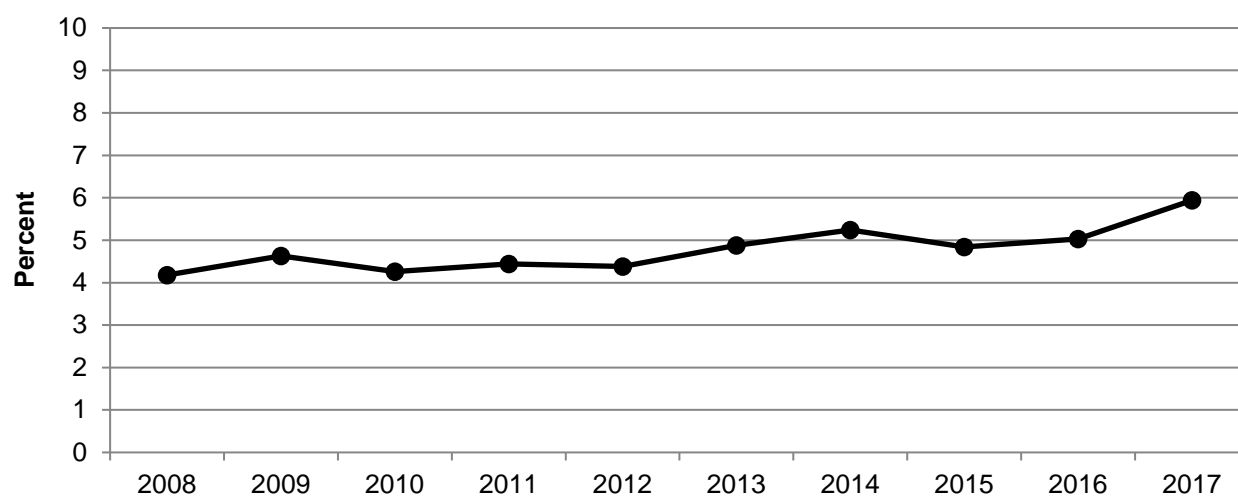
Note: For this measure, lower rates are better.

- From 2002 to 2017, the percentage of people who were unable to get or delayed in getting needed medical care in the last 12 months decreased from 5.2% to 4.1% (Figure 19).

The two measures of perception of need that worsened were:

- Children 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.
- Children who needed to see a specialist in the last 12 months who sometimes or never found it easy to see a specialist.

Figure 20. Children 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, 2008-2017

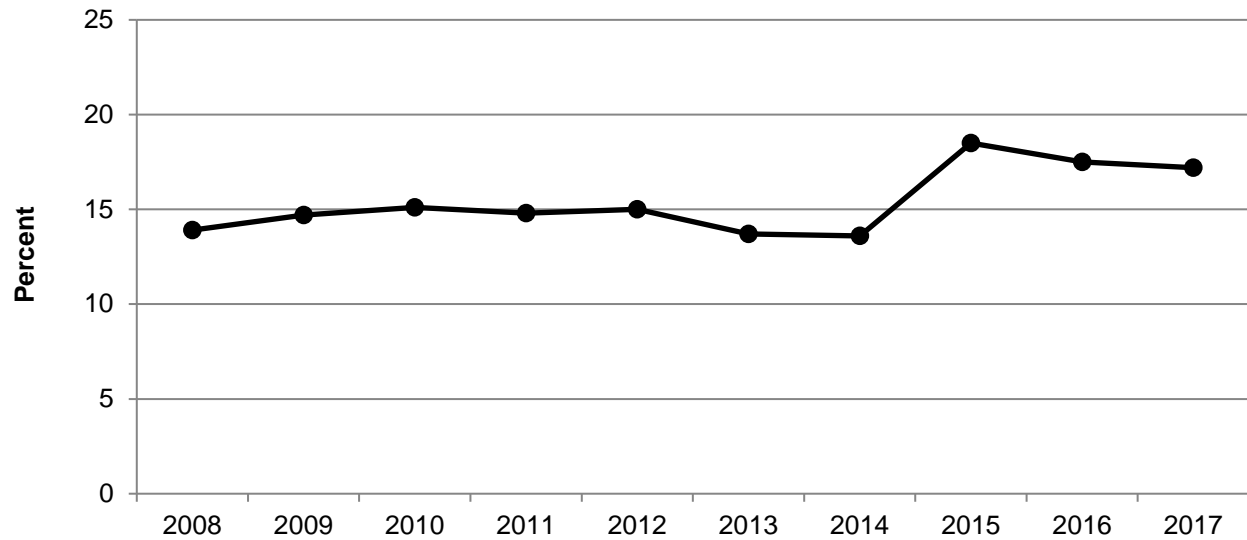


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2008-2017.

Note: For this measure, lower rates are better.

- From 2008 to 2017, the percentage of children 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 increased from 4.2% to 5.9% (Figure 20).

Figure 21. Children who needed to see a specialist in the last 12 months who sometimes or never found it easy to see a specialist



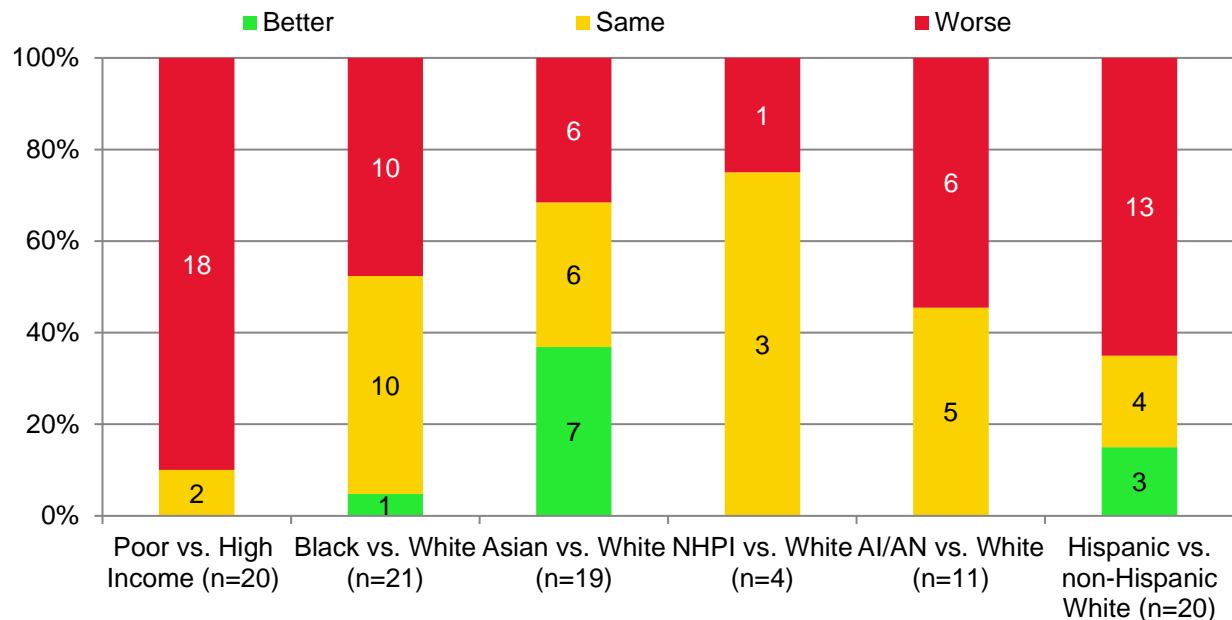
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2008-2017.

Note: For this measure, lower rates are better.

- From 2008 to 2017, the percentage of children who needed to see a specialist in the last 12 months who sometimes or never found it easy to see a specialist increased from 13.9% to 17.2% (Figure 21).

Snapshot of Disparities in Access to Care

Figure 22. Number and percentage of access measures for which members of selected groups experienced better, same, or worse access to care compared with reference group, 2017 or 2018



Key: n = number of measures.

- For the most recent year, people in poor households had worse access to care than people in high-income households for 90% of access measures (Figure 22).
- Blacks had worse access to care than Whites for 48% of access measures.
- Asians had worse access to care than Whites for 32% of access measures.
- Native Hawaiians/Pacific Islanders (NPHIs) had worse access to care than Whites for 25% of access measures.
- American Indians and Alaska Natives (AI/ANs) had worse access to care than Whites for 55% of access measures.
- Hispanics had worse access to care than non-Hispanic Whites for 65% of access measures.

Disparities varied among the different components of access to care:

- Of the 5 health insurance measures:
 - People in poor households had worse access to care for all the measures compared with people in high-income households.
 - AI/ANs and Hispanics had worse access to care for all the measures compared with Whites.
 - Blacks had worse access to care for 3 measures compared with Whites.
 - Asians had worse access to care for 1 measure compared with Whites.
- Of the 3 usual source of care measures:
 - People in poor households had worse access to care on all the measures compared with people in high-income households.
 - Blacks and Hispanics had worse access to care for 2 of 3 measures compared with Whites.
 - Asians, NPHIs, and AI/ANs had worse access to care for 1 of 3 measures compared with Whites.
- Of the 3 measures of timely access to care:
 - People in poor households had worse access to care for all the measures compared with people in high-income households.
 - Blacks and Hispanics had worse access to care for all the measures compared with Whites.
 - Asians had worse access to care for 2 of 3 measures compared with Whites.

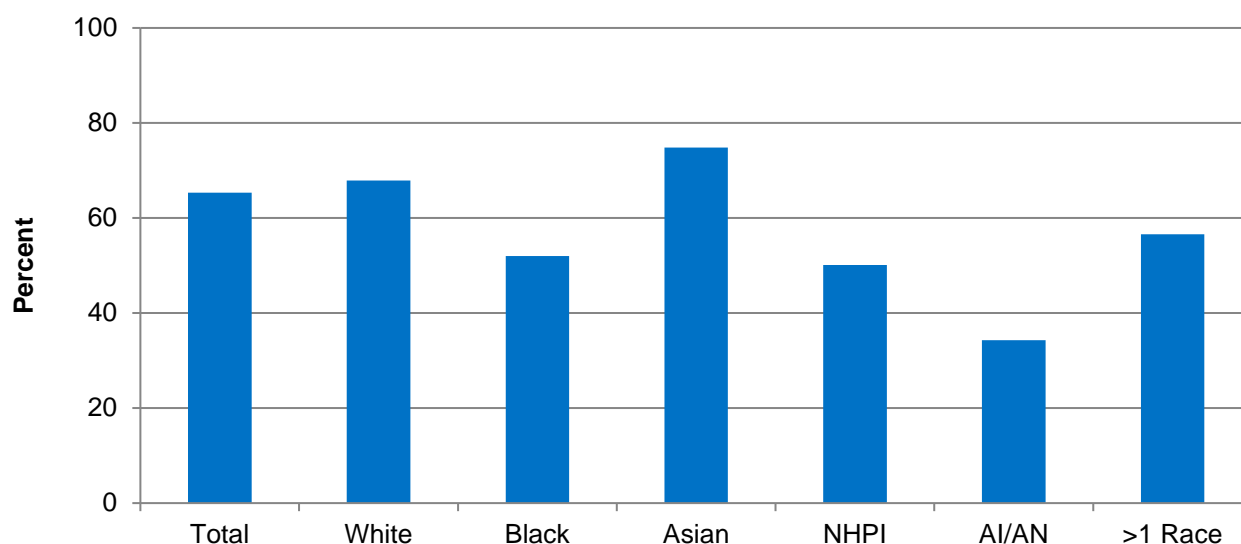
- Of the 9 measures of patient perception of need:
 - People in poor households had worse access to care for 7 of 9 measures compared with people in high-income households.
 - Hispanics had worse access to care for 3 of 9 measures compared with Whites.
 - Blacks and Asians had worse access for 2 measures compared with Whites.

Health Insurance

Health insurance coverage expansions significantly increase patients' access to care and use of preventive care, primary care, chronic illness treatment, medications, and surgery. These increases appear to produce significant, multifaceted, and nuanced benefits to health. Some benefits may manifest in earlier detection of disease, some in better medication adherence and management of chronic conditions, and some in the psychological well-being born of knowing one can afford care when one gets sick.¹⁰

Healthcare access and insurance coverage are major factors that contribute to racial and ethnic disparities. Racial and ethnic disparities in access have been reduced significantly by expanded access to health insurance.¹¹

Figure 23. People under age 65 with any private health insurance, by race, United States, 2018

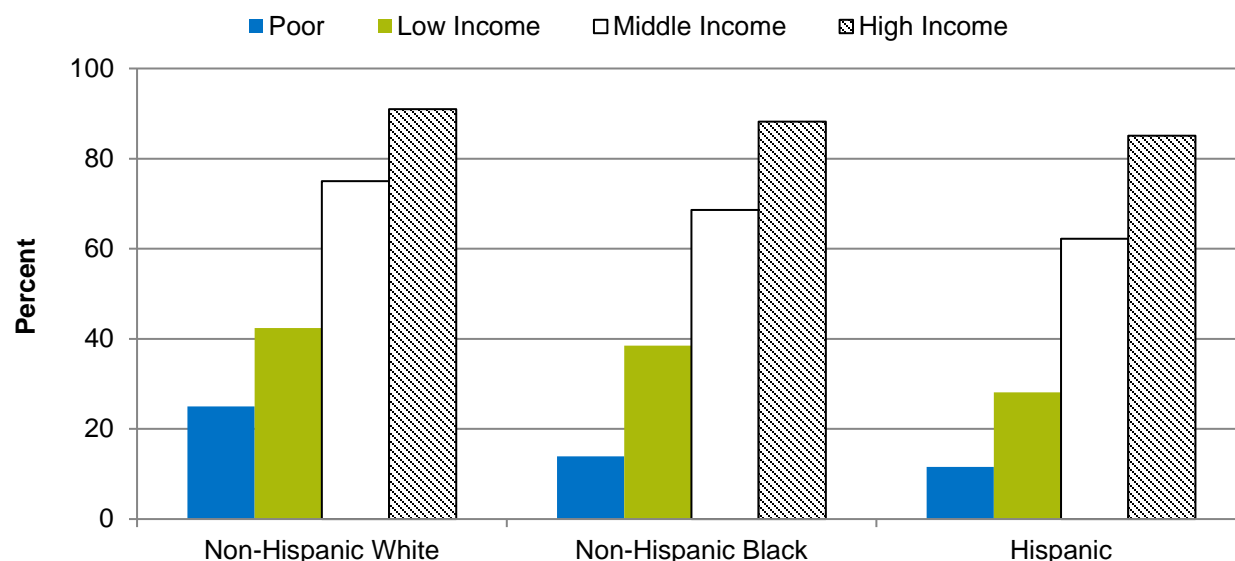


Key: AI/AN = American Indian or Alaska Native; NHPI = Native Hawaiian/Pacific Islander.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2018.

- In 2018, AI/ANs (34.3%) under age 65 were less likely to have insurance compared with Whites (67.9%) (Figure 23).
- In 2018, Asians (74.8%) under age 65 were more likely than Whites (67.9%) to have health insurance.

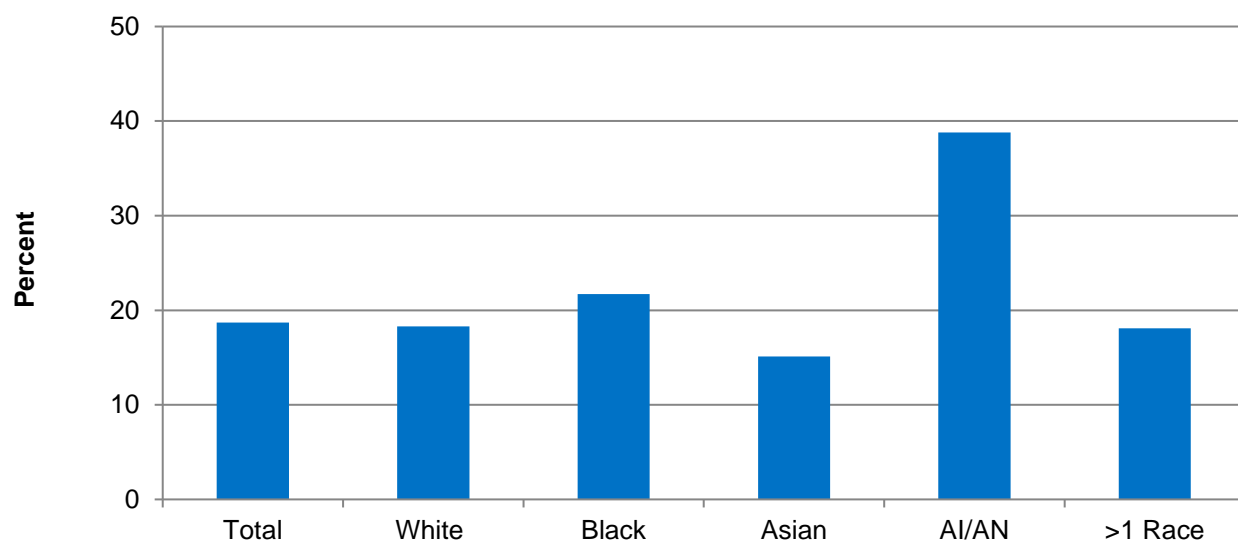
Figure 24. People under age 65 with any private health insurance, stratified by ethnicity and income, 2018



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2018.

- In 2018, among all ethnic groups, people from poor, low-, and middle-income households were less likely to have any private insurance compared with people in high-income households (Figure 24).
- In 2018, high-income Hispanics and Blacks were less likely to have any private insurance compared with high-income Whites.

Figure 25. People under age 65 with any period of uninsurance during the year, by race, 2017

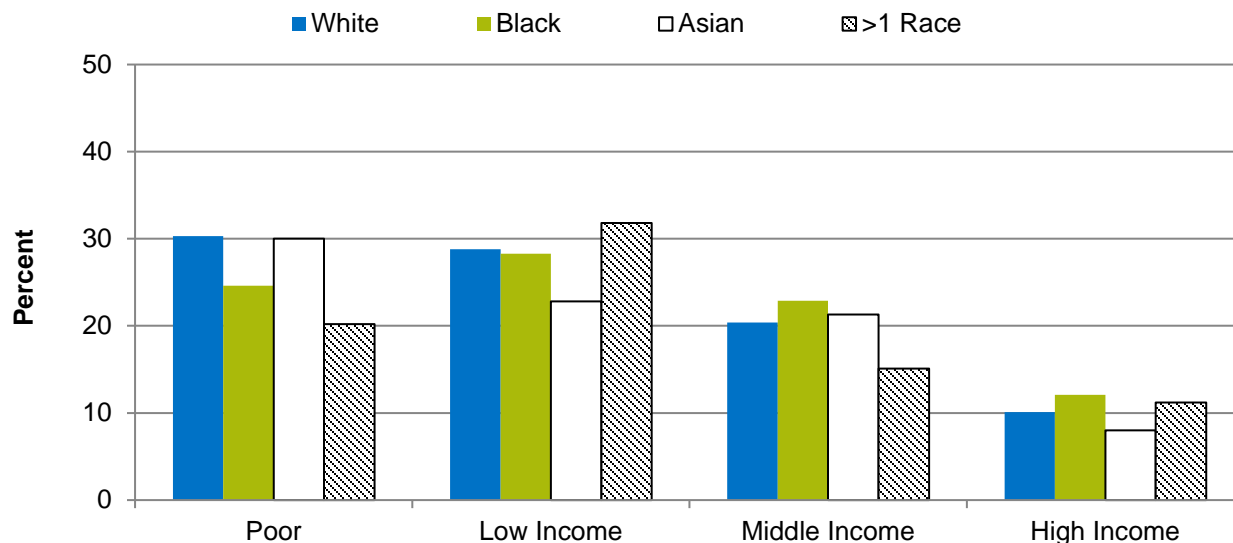


Key: AI/AN = American Indian or Alaska Native.

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

- In 2017, AI/ANs under age 65 were twice as likely to have a period of uninsurance during the year compared with Whites (38.8% compared with 18.3%) (Figure 25).
- In 2017, Blacks under age 65 were more likely than Whites to have a period of uninsurance during the year (21.7% compared with 18.3%).
- In 2017, Asians under age 65 were less likely than Whites to have a period of uninsurance during the year (15.1% compared with 18.3%).

Figure 26. People under age 65 with any period of uninsurance during the year, stratified by race and income, 2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

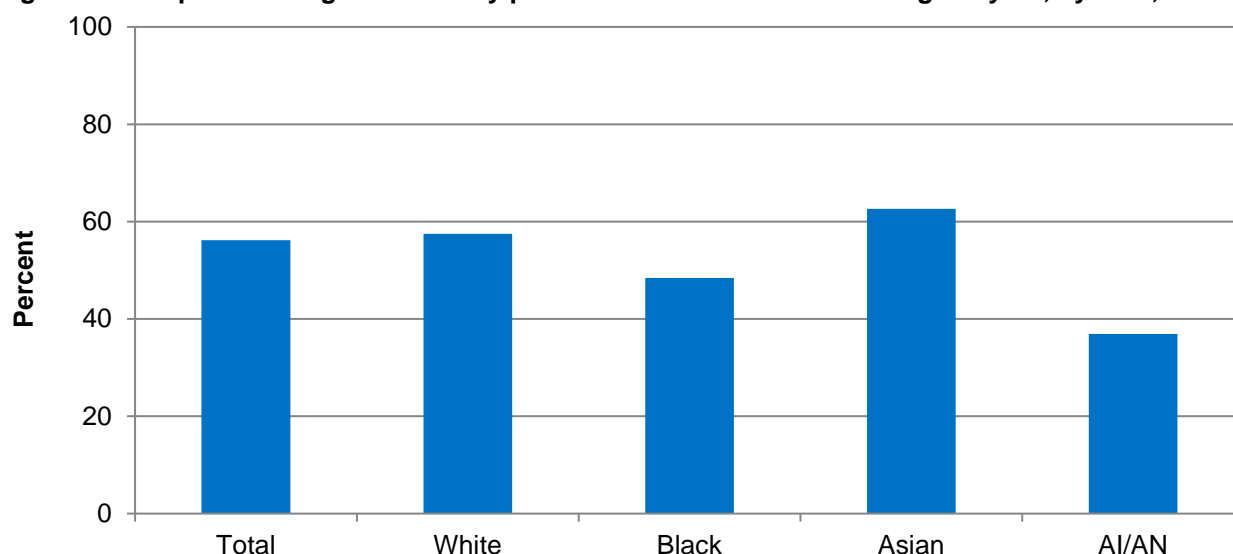
Note: For this measure, lower rates are better. Data for AI/ANs and NHPs do not meet the criteria for statistical reliability, data quality, or confidentiality.

- In 2017, among all racial groups, people from poor, low-, and middle-income households were more likely to report a period of uninsurance compared with people from high-income households (Figure 26).

Dental Insurance

Disparities by race or ethnicity, poverty, education, and smoking status persist. Among older adults who were non-Hispanic Black, Mexican American, poor, near poor, or current smokers, the prevalence of untreated decay was about 2 to 3 times that of those who were non-Hispanic White, not poor, or never smokers. The percentage of adults ages 21-64 years with any dental insurance has recently increased, largely driven by increased public dental insurance coverage.¹²

Figure 27. People under age 65 with any period of dental insurance during the year, by race, 2017



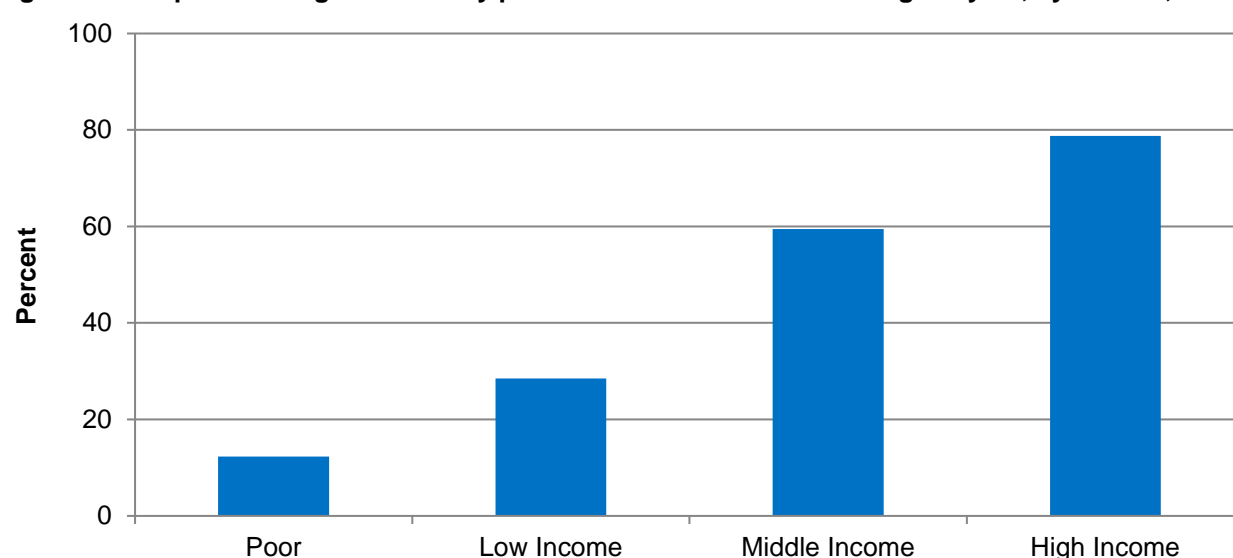
Key: AI/AN = American Indian or Alaska Native

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: Data for NHPIs do not meet the criteria for statistical reliability, data quality, or confidentiality.

- In 2017, Blacks and AI/ANs were less likely than Whites to report having dental insurance (Figure 27).
- In 2017, Asians were more likely than Whites to report having dental insurance.

Figure 28. People under age 65 with any period of dental insurance during the year, by income, 2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

- In 2017, poor (12.3%), low-income (28.5%), and middle-income (59.5%) people were less likely than high-income (78.8%) people to report having dental insurance (Figure 28).

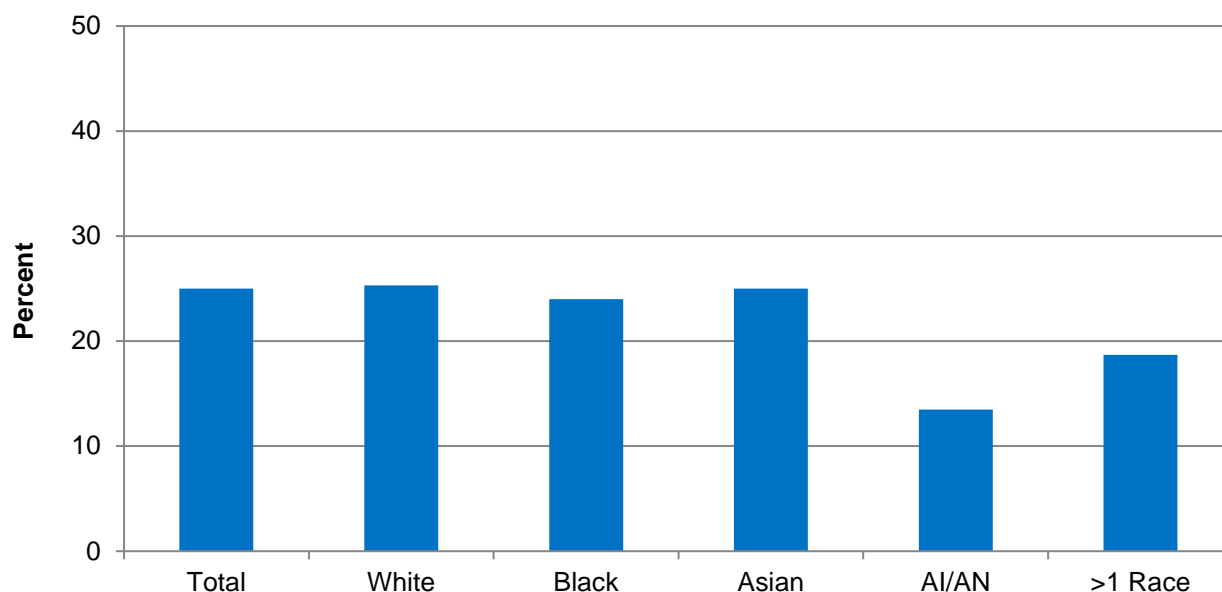
Medicare Advantage Insurance

The CMS Medicare Advantage (MA) program allows Medicare beneficiaries enrolled in both Part A and Part B to receive benefits from private plans rather than from the traditional fee-for-service (FFS) program. MA enrollees appear to be healthier than beneficiaries in traditional Medicare, according to measures of self-assessed health, functional status, and cognitive status.¹³

MA enrollees have less education than beneficiaries in traditional Medicare, on average, and are more likely to be in a low-to-middle-income group (per capita incomes between \$20,000 and \$40,000). They are less likely to have per capita incomes greater than \$40,000, perhaps because higher income beneficiaries are more likely to have Medigap and retiree health benefits that supplement traditional Medicare.¹³

Hispanic beneficiaries are more likely to be in MA than traditional Medicare, partly owing to relatively high MA enrollment in parts of the country with large Hispanic populations, such as southern Florida. In contrast, beneficiaries living in rural areas, where MA has a smaller footprint, are more likely to be in traditional Medicare.¹³

Figure 29. Adults age 65 and over with Medicare Advantage plan, by race, 2018

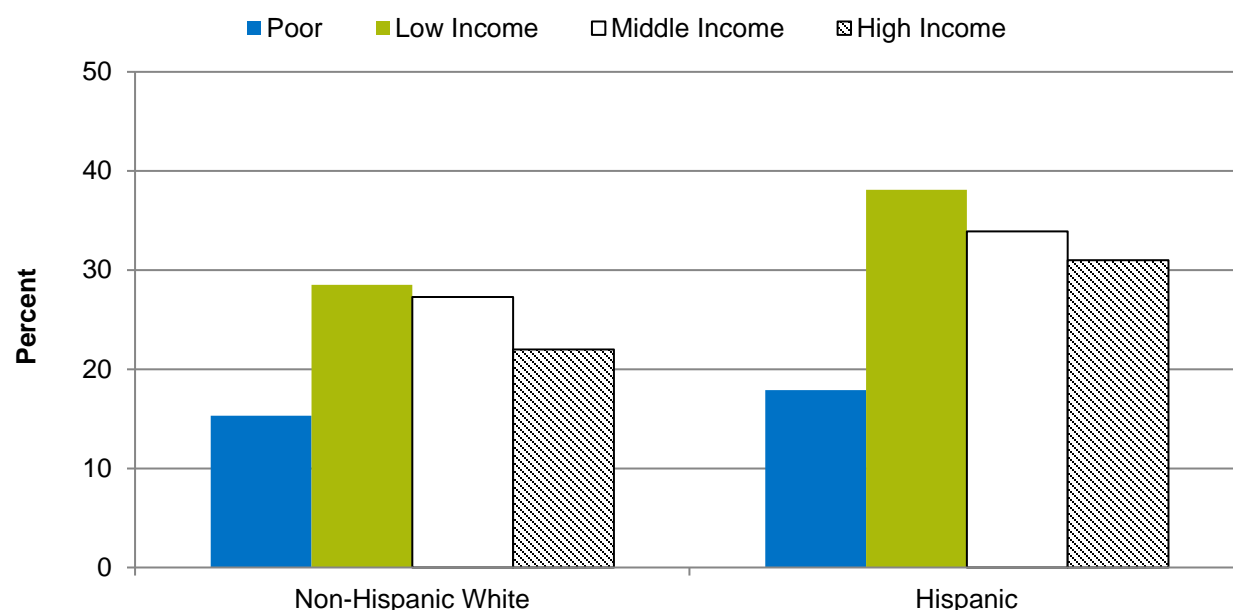


Key: AI/AN = American Indian or Alaska Native.

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2018.

- In 2018, AI/ANs age 65 and over were less likely than Whites to have an MA plan (Figure 29).

Figure 30. Adults age 65 and over with Medicare Advantage plan, stratified by ethnicity and income, 2018



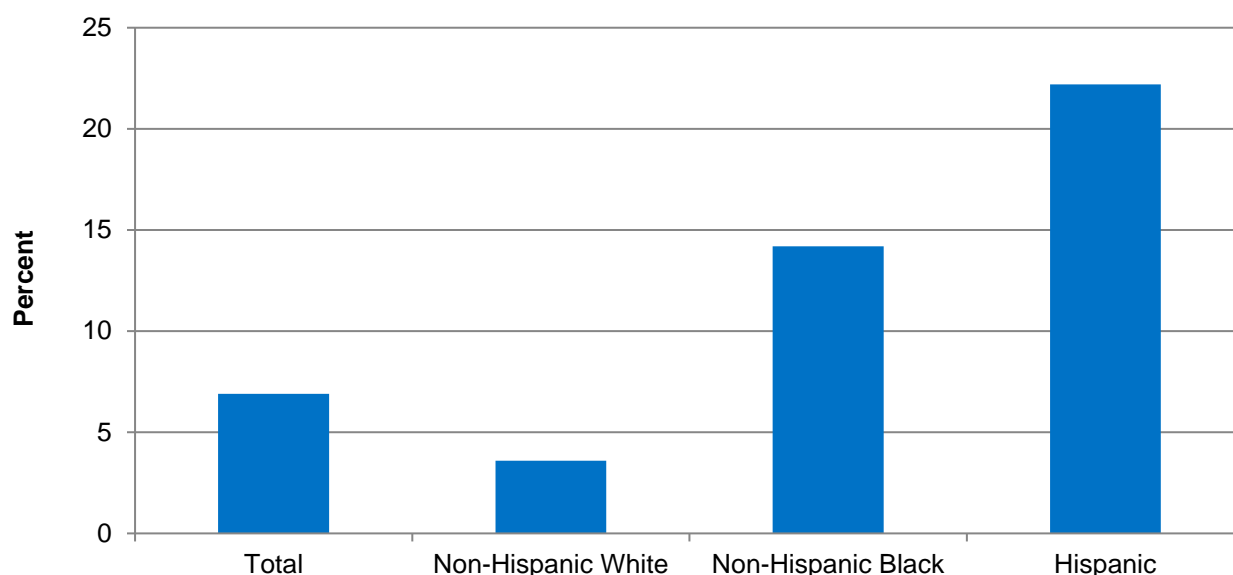
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2018.

- In 2018, high-income Hispanics (31.0%) were more likely than high-income non-Hispanic Whites (22.0%) to have Medicare Advantage (Figure 30).
- Low income Hispanics (38.1%) were more likely than low-income non-Hispanic Whites (28.5%) to have Medicare Advantage.

Dual-Eligible Beneficiaries

Dual-eligible beneficiaries are eligible for Medicare and Medicaid. Medicare is the primary payer for dual-eligible beneficiaries. Dual-eligible beneficiaries receive full Medicare coverage, including coverage of physician services, inpatient and outpatient acute care, and postacute skill-leveled care. Medicaid may cover additional services not covered under Medicare, as well as help with costs for Medicare premiums, deductibles, coinsurance, and copayments. Dual-eligible beneficiaries have low incomes that make it difficult to afford the premiums and cost sharing required by Medicare, as well as the cost of services not covered by the Medicare program.

More than half (56%) of individuals dually eligible for Medicare and Medicaid benefits in 2013 had at least one limitation in activities of daily living. A plurality (43%) did not graduate from high school. Compared with non-dual Medicare beneficiaries, more dual-eligible beneficiaries reported being in poor health (18% vs. 6%). Dual-eligible beneficiaries were also more likely than non-dual Medicare beneficiaries to live in an institution.¹⁴

Figure 31. Adults age 65 and over with dual-eligible insurance, by ethnicity, 2018

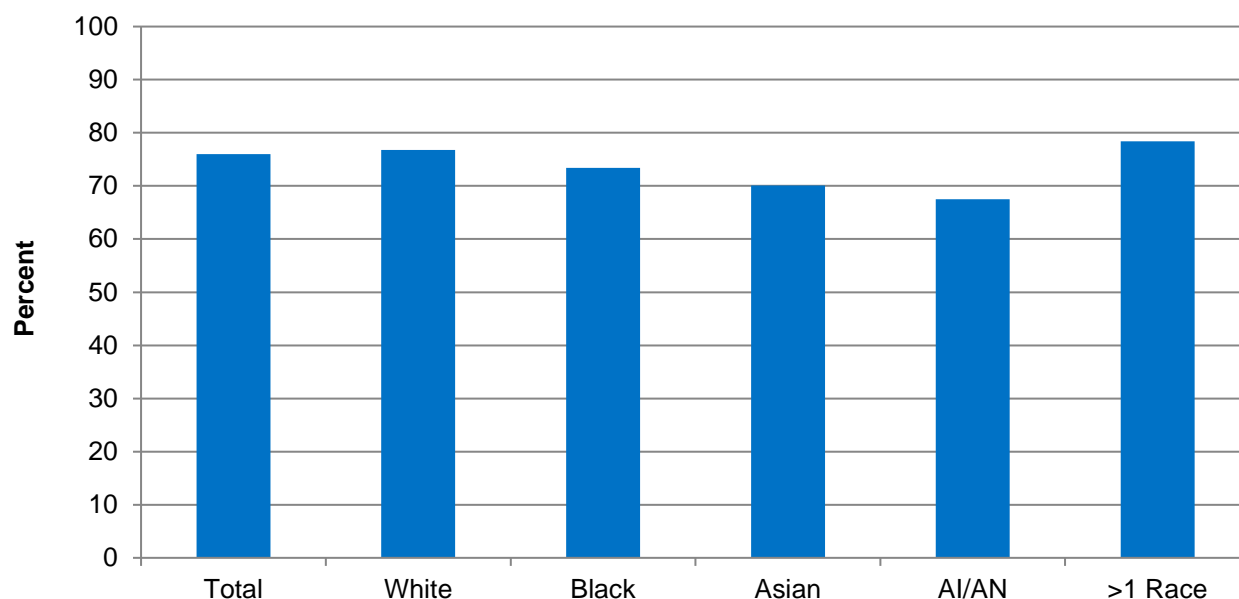
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2018.

- In 2018, Hispanics and Blacks age 65 and over were more likely to have dual-eligible insurance compared with Whites (22.2% and 14.2%, respectively, vs. 3.6%) (Figure 31).

Usual Source of Care

Compared with White Americans, African Americans are less likely to use primary care as their usual source of care.¹⁵ Having a usual place and usual provider are associated with an increased likelihood of receiving preventive services and recommended screenings compared with having no usual source of care.¹⁶

Figure 32. People with a usual primary care provider, by race, 2017



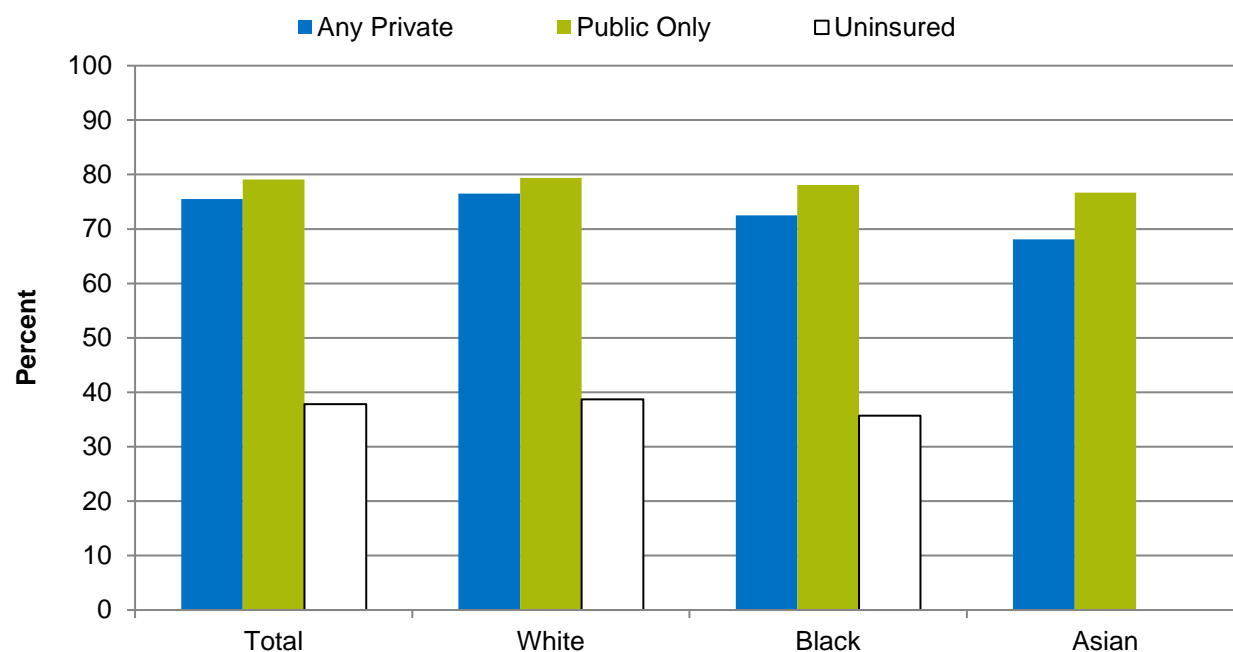
Key: AI/AN = American Indian or Alaska Native

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: Data for NHPI do not meet the criteria for statistical reliability, data quality, or confidentiality.

- In 2017, Blacks (73.4%), Asians (70.1%), and AI/ANs (67.5%) were less likely than Whites (76.8%) to have a usual primary care provider (Figure 32).

Figure 33. People with a usual primary care provider, stratified by race and insurance, 2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

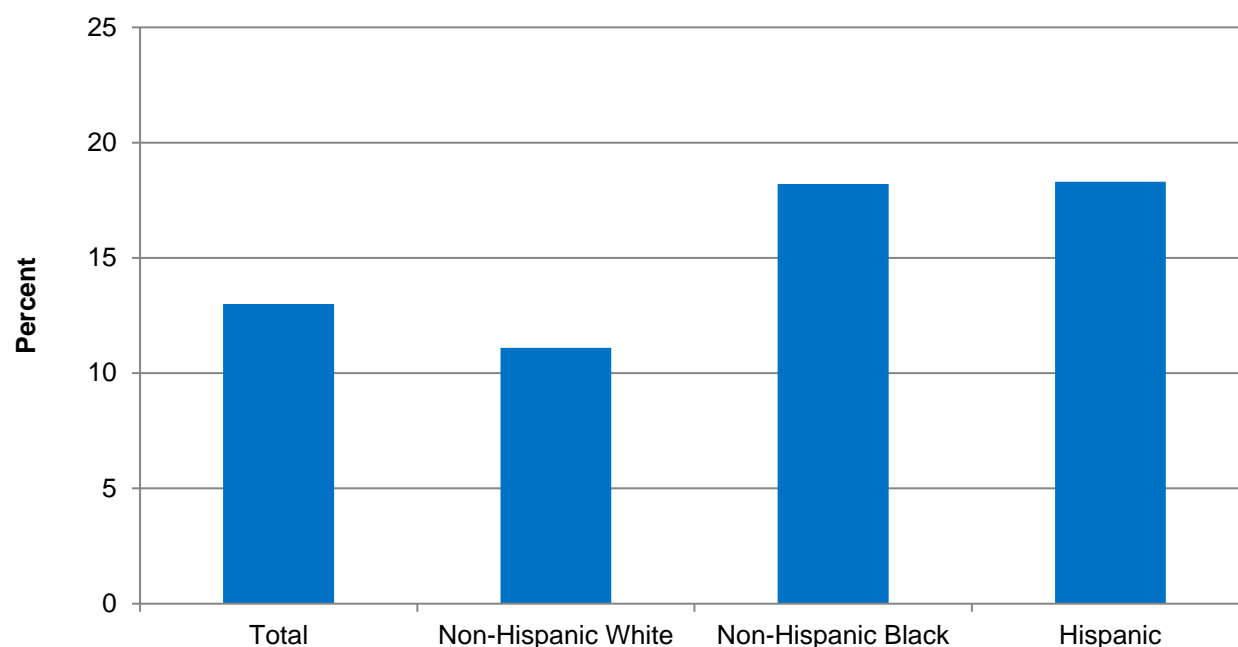
Note: Data do not meet the criteria for statistical reliability, data quality, or confidentiality for AI/ANs, NHPIs, and uninsured Asians.

- In 2017, among all racial groups, uninsured people were less likely than those with private insurance to have a usual primary care provider (Figure 33).
- In 2017, Blacks and Asians with private insurance were less likely than Whites with private insurance to have a usual primary care provider (72.5% and 68.1%, respectively, vs. 76.5%).

Timely Access to Care

Having health insurance coverage is strongly associated with receiving timely and continuous care, and lack of it has been consistently found to be one of the main contributors to disparities in access to health services.¹⁷

Figure 34. 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, by ethnicity, 2017

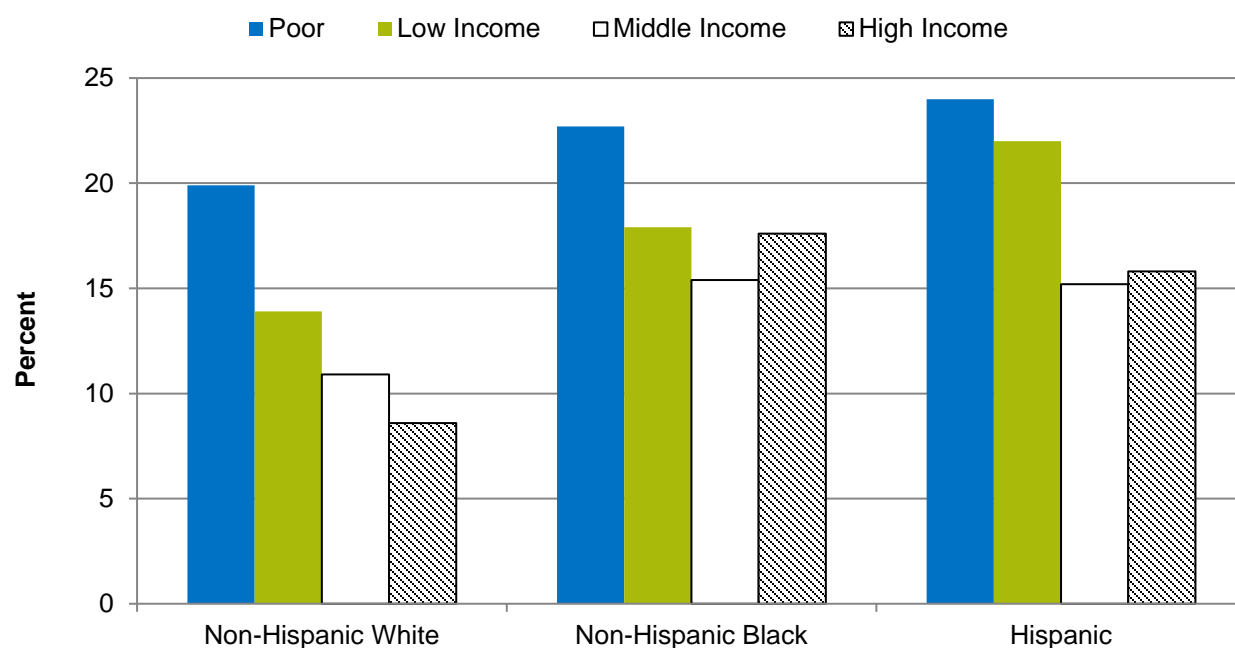


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: For this measure, lower rates are better.

- In 2017, non-Hispanic Blacks and Hispanics who needed care right away for an illness, injury, or condition were more likely than non-Hispanic Whites to report that they sometimes or never got care as soon as needed (18.2% and 18.3%, respectively, vs. 11.1%) (Figure 34).

Figure 35. 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, stratified by ethnicity and income, 2017

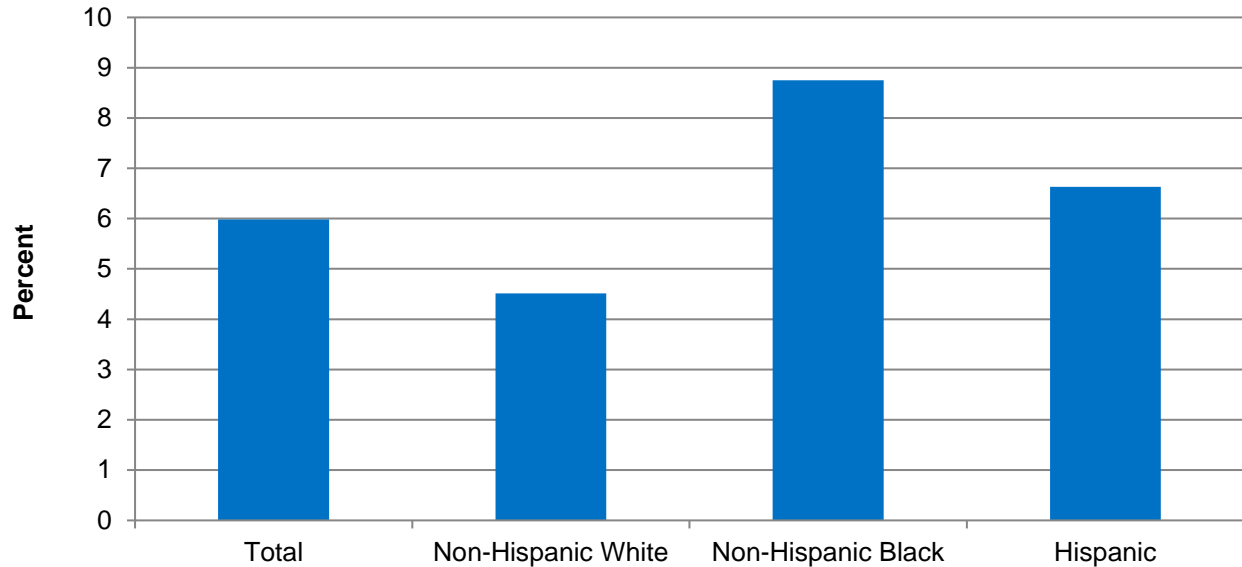


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: For this measure, lower rates are better.

- In 2017, among non-Hispanic Whites who needed care right away for an illness, injury, or condition, people from poor and low-income households were more likely than people from high-income households to report that they sometimes or never got care as soon as needed (19.9% and 13.9%, respectively, vs. 8.6%) (Figure 35).
- In 2017, high-income Hispanics who needed care right away for an illness, injury, or condition were more likely than high-income Whites to report that they sometimes or never got care as soon as needed (15.8% vs. 8.6%).

Figure 36. Children who had any appointments for routine healthcare in the last 12 months who sometimes or never got an appointment for routine care as soon as needed, by ethnicity, 2017

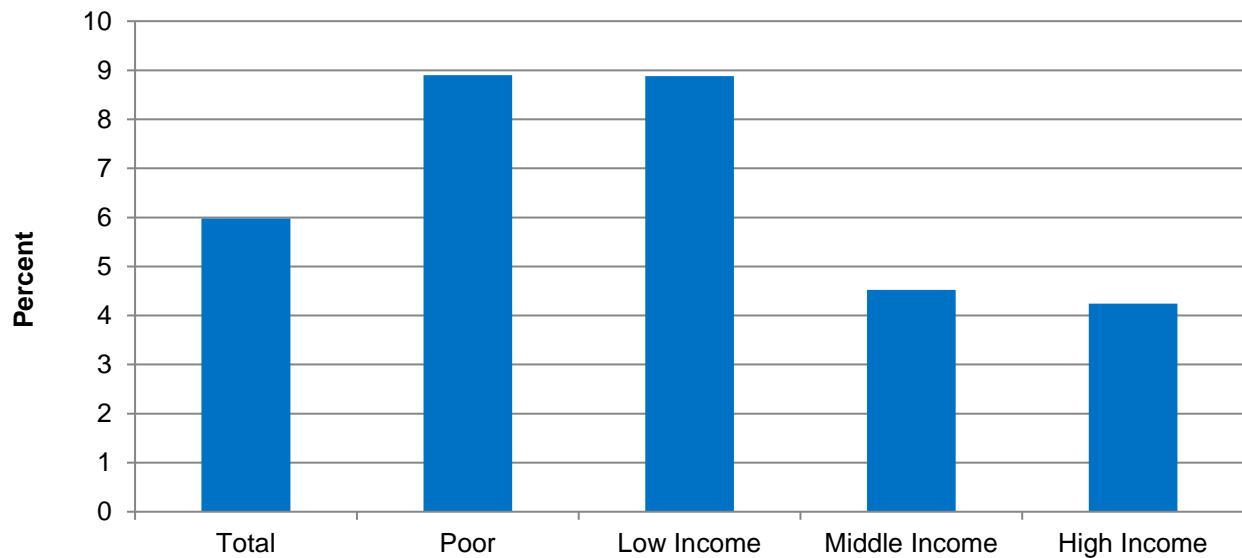


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: For this measure, lower rates are better.

- In 2017, the percentage of children who had any appointments for routine healthcare who sometimes or never got an appointment for routine care as soon as needed was higher for non-Hispanic Blacks (8.8%) and Hispanics (6.6%) compared with non-Hispanic Whites (4.5%) (Figure 36).

Figure 37. Children who had any appointments for routine healthcare in the last 12 months who sometimes or never got an appointment for routine care as soon as needed, by income, 2017

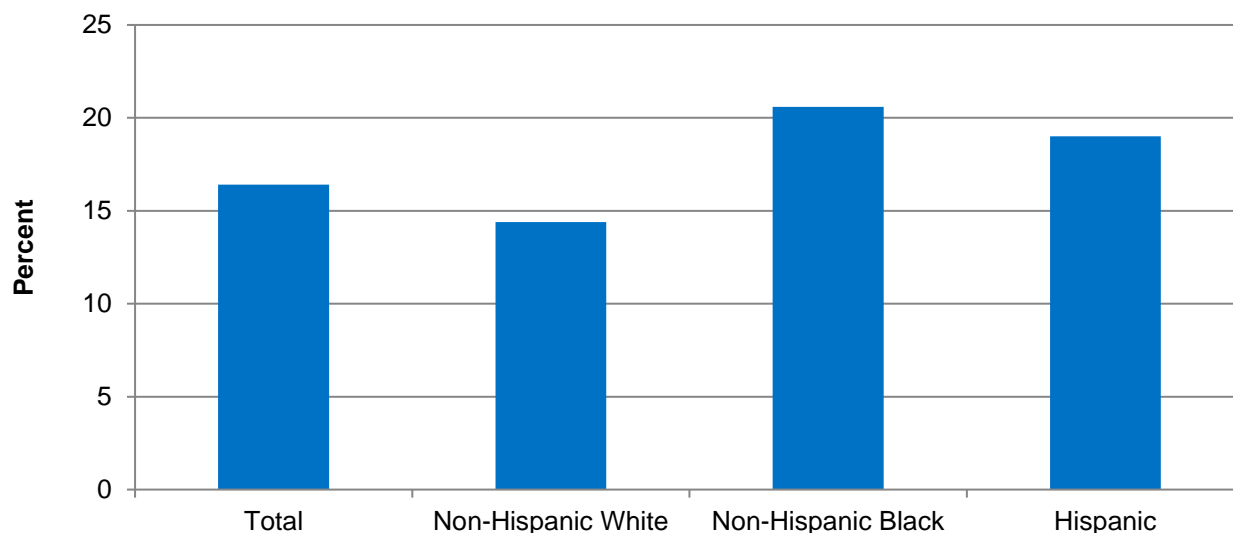


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: For this measure, lower rates are better.

- In 2017, the percentage of children who had any appointments for routine healthcare who sometimes or never got an appointment for routine care as soon as needed was higher for poor (8.9%) and low-income (8.9%) children compared with high-income children (4.2%) (Figure 37).

Figure 38. Adults who had any appointments for routine healthcare in the last 12 months who sometimes or never got an appointment for routine care as soon as needed, by ethnicity, 2017

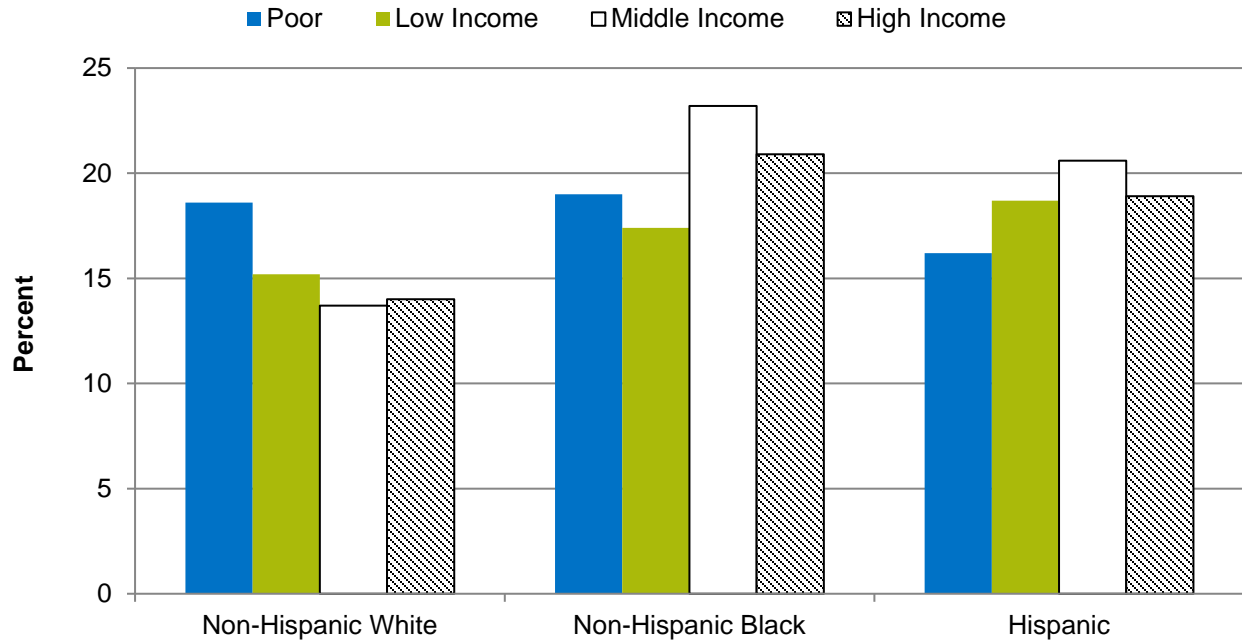


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: For this measure, lower rates are better.

- In 2017, non-Hispanic Blacks (20.6%) and Hispanics (19.0%) were more likely than non-Hispanic Whites (14.4%) to report that they sometimes or never got an appointment for routine care as soon as needed (Figure 38).

Figure 39. Adults who had any appointments for routine healthcare in the last 12 months who sometimes or never got an appointment for routine care as soon as needed, by ethnicity and income, 2017



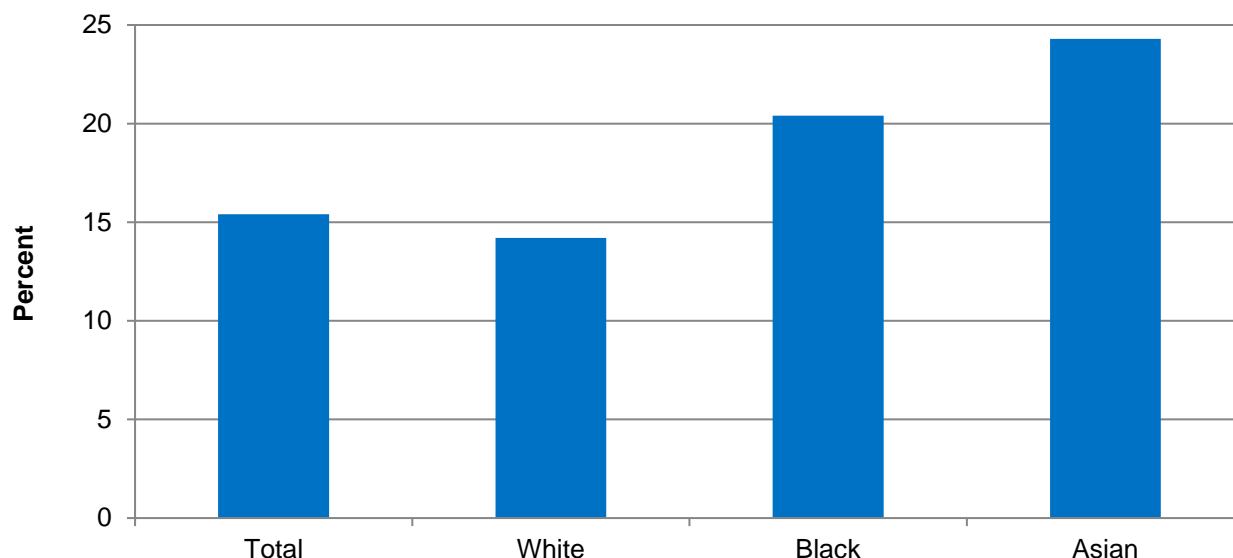
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: For this measure, lower rates are better.

- In 2017, among non-Hispanic Whites, people from poor households were more likely than people from high-income households to report that they sometimes or never got an appointment for routine care as soon as needed (18.6% vs. 14%) (Figure 39).
- In 2017, high-income non-Hispanic Blacks and Hispanics were more likely than high-income Whites to report that they sometimes or never got an appointment for routine care as soon as needed (20.9% and 18.9%, respectively, vs. 14%).

Perception of Need

Figure 40. Adults who needed to see a specialist in the last 12 months who sometimes or never found it easy to see a specialist, by race, 2017

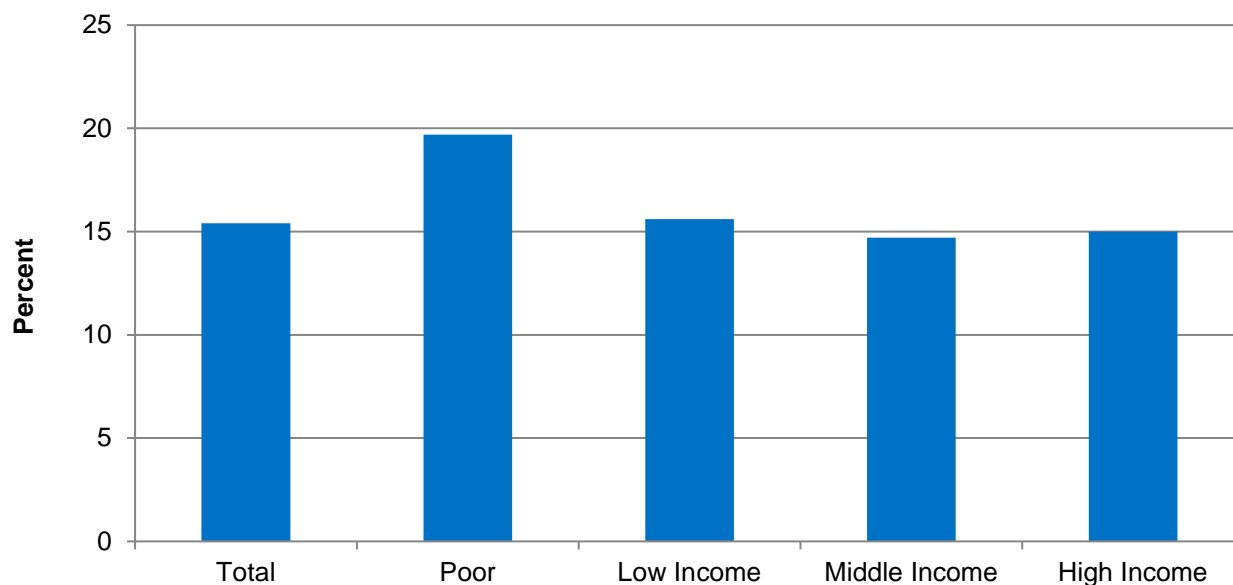


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: For this measure, lower rates are better. Data for AI/ANs and NHPs do not meet the criteria for statistical reliability, data quality, or confidentiality.

- In 2017, Blacks (20.4%) and Asians (24.3%) who needed to see a specialist were more likely than Whites (14.2%) to report that they sometimes or never found it easy to get the appointment (Figure 40).

Figure 41. Adults who needed to see a specialist in the last 12 months who sometimes or never found it easy to see a specialist, by income, 2017

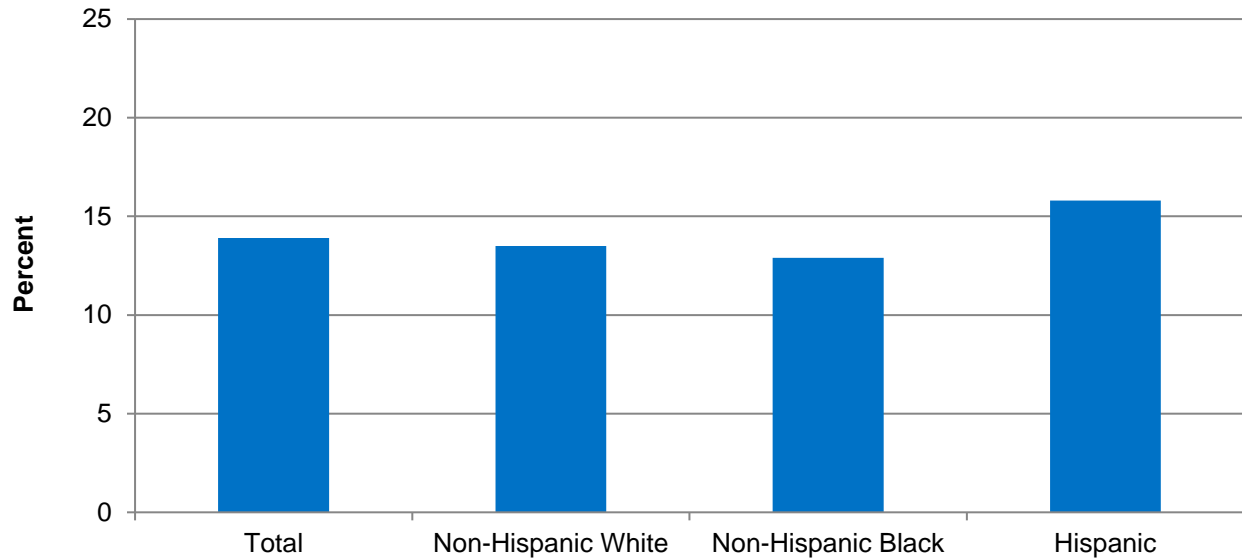


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: For this measure, lower rates are better.

- In 2017, poor adults (19.7%) who needed to see a specialist were more likely than high-income adults (15.0%) to report that they sometimes or never found it easy to get the appointment (Figure 41).

Figure 42. People with a usual source of care who is somewhat to very difficult to contact during regular business hours over the telephone, by ethnicity, 2017

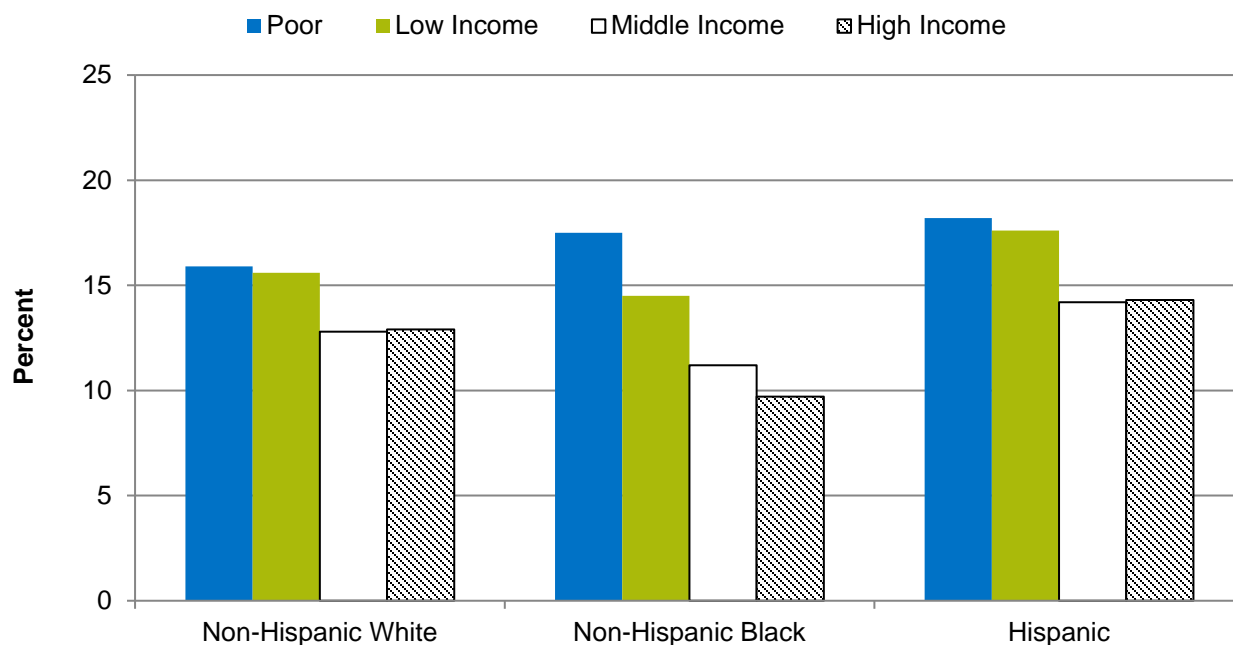


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: For this measure, lower rates are better.

- In 2017, Hispanics (15.8%) were more likely than non-Hispanic Whites (13.5%) to have a usual source of care who was somewhat to very difficult to contact during regular business hours over the telephone (Figure 42).

Figure 43. People with a usual source of care who is somewhat to very difficult to contact during regular business hours over the telephone, stratified by ethnicity and income, 2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: For this measure, lower rates are better.

- In 2017, among non-Hispanic Blacks, poor and low-income people were more likely than high-income people to report that their usual source of care was somewhat to very difficult to contact during regular business hours over the telephone (17.5% and 14.5%, respectively, vs. 9.7%) (Figure 43).

QUALITY IN HEALTHCARE

The foundation of quality healthcare is doing the right thing at the right time in the right way for the right person and having the best results possible. Quality healthcare often means striking the right balance in the provision of health services by avoiding overuse (e.g., getting unnecessary tests), underuse (e.g., not being screened for high blood pressure), or misuse (e.g., being prescribed drugs that have dangerous interactions).¹

The quality of healthcare can be measured, monitored, and improved over time. By specifying clearly, based on current science, which services should be provided to patients who have or are at risk for certain conditions and finding out whether those services are being correctly provided at the right time, we can track the performance of our medical care system. Experts in a field can propose a measure of performance, then test, adopt, and implement it.

Measures of healthcare quality tracked in the NHQDR encompass a broad array of services (prevention, acute treatment, and chronic disease management) and settings (doctors' offices, emergency departments, dialysis centers, hospitals, nursing homes, hospices, and home health). Most NHQDR quality measures quantify processes that make up high-quality healthcare or outcomes related to receipt of high-quality healthcare. A few structural measures are included, such as the availability of health information technologies and workforce diversity.

Data used to generate NHQDR measures include results from more than three dozen datasets that provide estimates for various population subgroups and data years.

Sources used to assess healthcare quality in the report include:

- Surveys of patients, patients' families, and providers;
- Administrative data from healthcare facilities;
- Abstracts of clinical charts;
- Registry data; and
- Vital statistics.

Most data are reported annually and are generally available through 2016, 2017, or 2018.

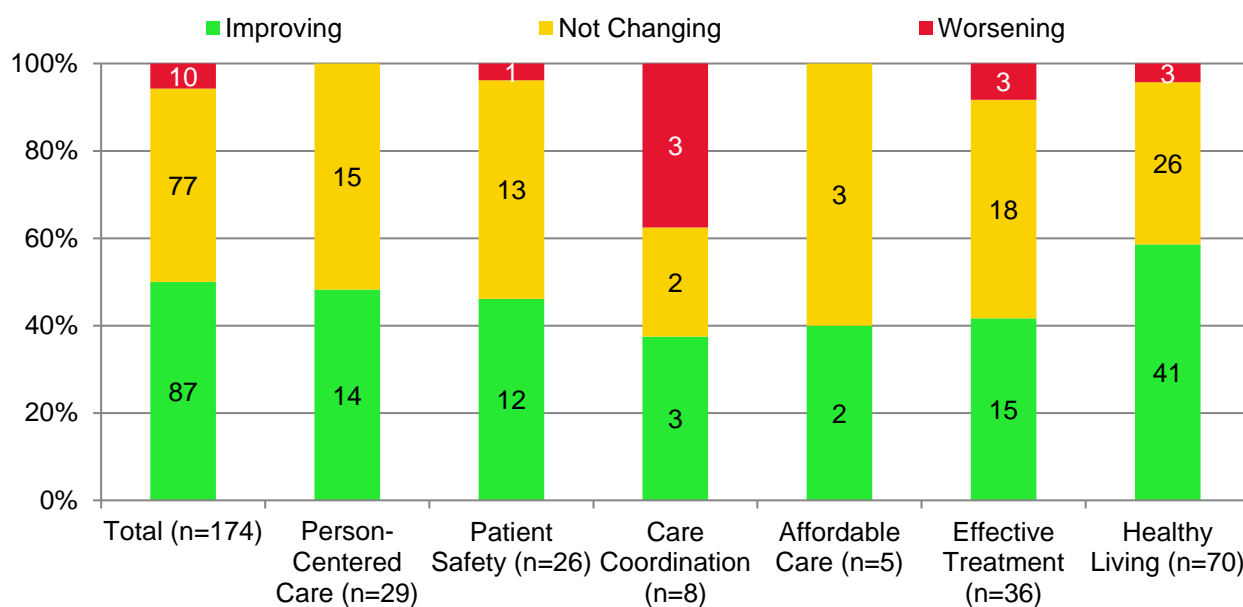
As defined by the landmark Institute of Medicine report *Crossing the Quality Chasm: A New Health System for the 21st Century*, “equity” aims to ensure that quality care is available to all and that the quality of care provided does not differ by race, ethnicity, or other personal characteristics unrelated to a patient's reason for seeking care.²

Historically, quality of healthcare has varied based on race, ethnicity, socioeconomic status, age, sex, disability status, sexual orientation, and residence location. As specified in the Healthcare Research and Quality Act, this report focuses on disparities related to race, ethnicity, socioeconomic status, as well as geographic location. Through the examination of disparities in care, policymakers, researchers, providers, and public health practitioners can better understand the relationship between quality and equity in care.

TRENDS IN QUALITY

Quality of healthcare improved generally through 2018, but the pace of improvement varied by priority area.

Figure 1. Number and percentage of all quality measures that were improving, not changing, or worsening, total and by priority area, from 2000 through 2018



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percentage change and to assess statistical significance. Progress on individual measures is determined as follows:

- **Improving** = The average annual percentage change is 1% or greater in the desirable direction, and $p < 0.10$.
 - **Not Changing** = The average annual percentage change is less than 1% in either the desirable or undesirable direction or $p > 0.10$.
 - **Worsening** = The average annual percentage change is 1% or greater in the undesirable direction, and $p < 0.10$.
- Through 2018, across a broad spectrum of measures of healthcare quality, 50% showed improvement (Figure 1).
 - Almost half of measures of person-centered care improved (48%).
 - Almost half (46%) of patient safety measures and almost 60% of healthy living measures improved.

- More than 40% of effective treatment measures improved.
- Nearly 40% of care coordination measures improved.
- Forty percent of affordable care measures improved.

Before the 2018 and 2019 NHQDR, the reports included longitudinal reporting of Healthcare Cost and Utilization Project (HCUP) Quality Indicator (QI) trends based on ICD-9-CMⁱ coding. Because of the transition from ICD-9-CM to ICD-10-CM/PCSⁱⁱ on October 1, 2015, the 2019 and 2018 NHQDR include QI estimates only for 2017 and 2016, respectively, and do not report on trends. Longitudinal trends may be reported in future NHQDR releases.

Trends in Person-Centered Care

The NHQDR addresses six priority areas, including person-centered care, defined as ensuring that each person and family is engaged as partners in their care. The rationale is that “[h]ealth care should give each individual patient and family an active role in their care. Care should adapt readily to individual and family circumstances, as well as differing cultures, languages, disabilities, health literacy levels, and social backgrounds.” Examples of person-centered care could be ensuring that patients’ feedback on their preferences, desired outcomes, and experiences of care is integrated into care delivery and enabling patients to effectively manage their care.

The National Academy of Medicine identifies patient centeredness as a core component of quality healthcare.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.³

ⁱ ICD-9-CM: International Classification of Diseases, Ninth Revision, Clinical Modification.

ⁱⁱ ICD-10-CM/PCS: International Classification of Diseases, Tenth Revision, Clinical Modification and Procedure Coding System.

Patient centeredness “encompasses qualities of compassion, empathy, and responsiveness to the needs, values, and expressed preferences of the individual patient.”² In addition, translation and interpretation services, as well as auxiliary aids and services, facilitate communication between the provider and the patient and are often a legal requirement.ⁱⁱⁱ The patient-centered approach includes viewing the patient as a unique person, rather than focusing strictly on the illness, building a therapeutic alliance based on the patient’s and the provider’s perspectives.

Patient-centered care is supported by good provider-patient communication so that patients’ needs and wants are understood and addressed and patients understand and participate in their own care. This approach to care has been shown to improve patients’ health and healthcare.^{4,5,6,7,8}

Unfortunately, many barriers exist to good communication. Providers differ in communication proficiency, including varied listening skills and different views from their patients of symptoms and treatment effectiveness.⁹ Additional factors influencing patient centeredness and provider-patient communication include:

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

Importance of Person-Centered Care

Morbidity and Mortality

- Patient-centered decision making (when physicians take into account the needs and circumstances of a patient) for planning a patient’s care has been shown to improve healthcare outcomes.¹⁰
- Patient-centered approaches to care have been shown to improve patients’ health status. These approaches rely on building a provider-patient relationship, improving communication, fostering a positive atmosphere, and encouraging patients to actively participate in provider-patient interactions.¹¹

ⁱⁱⁱ For example, Section 1557 of the Affordable Care Act (ACA), 42 U.S.C. 18116, and Title VI of the Civil Rights Act of 1964, 42 U.S.C. 2000d, require the practitioner or hospital to take reasonable steps to ensure meaningful access to individuals with limited English proficiency, such as providing language interpreters and translating vital documents. Section 1557 of the ACA and Section 504 of the Rehabilitation Act of 1973, 29 U.S.C. 794, require the practitioner or hospital to take appropriate steps to ensure effective communication with individuals with disabilities, such as by providing sign language interpreters, materials in Braille, and/or accessible electronic formats.

- Patient-centered care can reduce the chance of misdiagnosis due to poor communication.¹²

Overall, effective communication leads to increased patient and clinician satisfaction, increased trust with the clinician, and functional and psychological well-being. Effective communication also leads to improved outcomes in specific diseases, including:

- A small but significant absolute risk reduction of mortality from coronary artery disease,
- Improved control of diabetes and hyperlipidemia,
- Better adherence to antihypertensives,
- Bereavement adjustment in caregivers of cancer patients, and
- Higher self-efficacy of adherence to HIV medications.¹³

Cost

- Poor communication, lack of collaboration, and lack of support for self-care are associated with suffering and waste in healthcare.¹⁴
- Patient centeredness has been shown to reduce overuse of medical care.¹⁵
- Patient centeredness can reduce the strain on system resources and save money by reducing the number of diagnostic tests and referrals.¹⁶
- Improving provider-patient communication during medical decision making can reduce costs.¹⁷

Findings on Person-Centered Care

The person-centered care priority area includes measures of:

- Patient Experience of Care.
- Hospital Communication.
- Home Health Communication.
- Hospice Care.

Data for these measures can be found at <https://nhqrnet.ahrq.gov/inhqrdr/data/query>.

The average annual increase in the percentage of adults with limited English proficiency who had a usual source of care was about 6%.

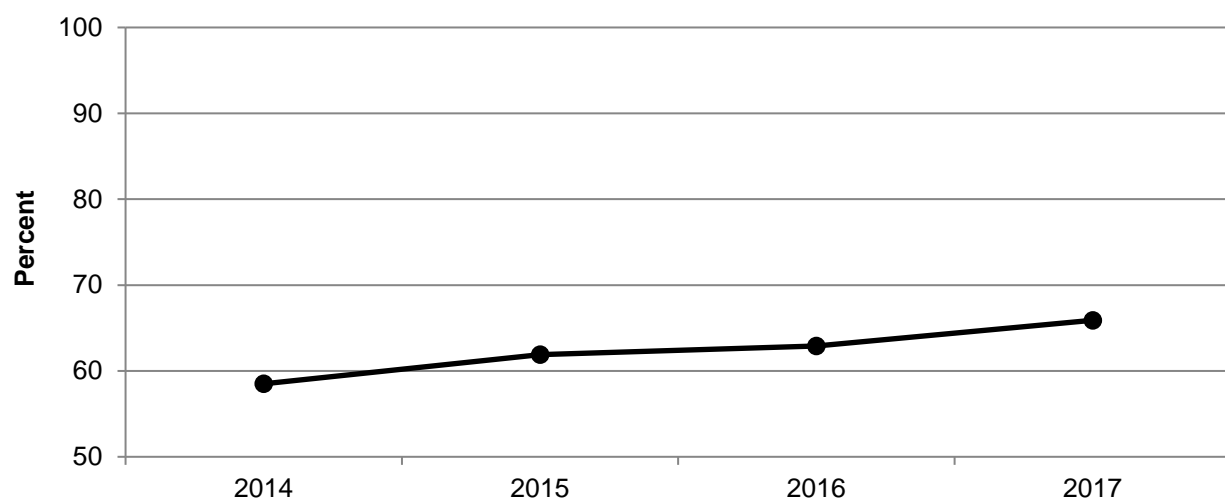
Measures of provider-patient communication showed the greatest improvement among person-centered care measures:

- Adults with limited English proficiency who had a usual source of care.
- Adults who had a doctor's office or clinic visit in the last 12 months whose health providers always gave them easy-to-understand instructions about what to do for a specific illness or health conditions.
- Adults who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never explained things in a way they could understand.

Improving Trend: Usual Source of Care for Patients With Limited English Proficiency

Adults who have limited English proficiency may experience disparities in their care and gaps in communication with their healthcare team.¹⁸ According to the Migration Policy Institute, in 2015, an estimated 25.9 million individuals living in the United States reported having limited English proficiency.¹⁹ “More than one in four people aged 5 and over with LEP are born in the U.S.”²⁰ Language assistance such as access to translation services, health education materials written in a known language, and other resources are required by law, but not all patients have access to these services at their usual source of care.²¹

Figure 2. Adults with limited English proficiency who had a usual source of care, 2014-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2014-2017.

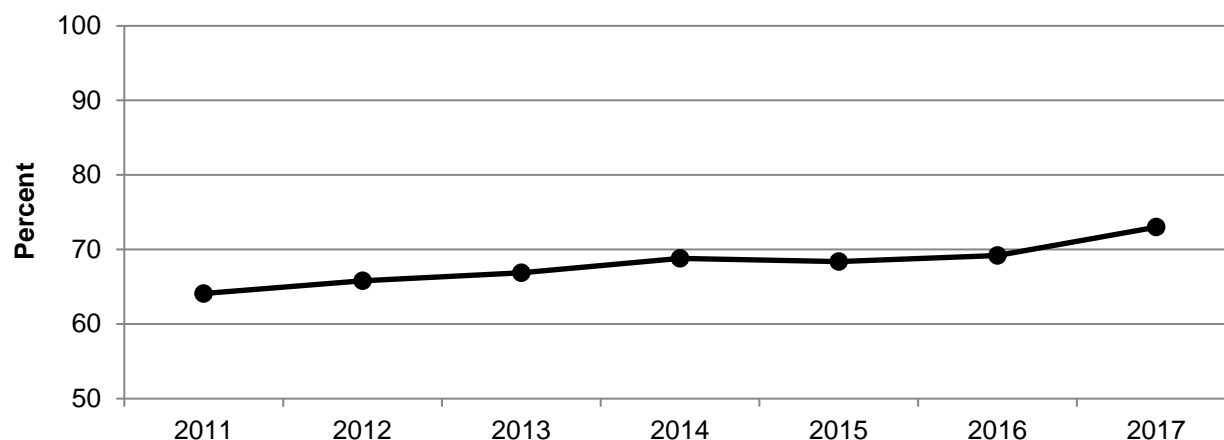
- From 2014 to 2017, overall, the percentage of adults with limited English proficiency who had a usual source of care increased from 58.5% to 65.9% (Figure 2).

Among the 19 person- and family-centered care measures in this year's report, one measure showed the top three greatest reductions in disparities over time between high-income populations and other income groups. This measure is Adults with limited English proficiency who had a usual source of care (see Disparities section, Income).

Improving Trend: Clear Instructions From Health Providers

Many patients leave their healthcare visit unsure of what their provider asked them to do or what was discussed. Nationwide, only 12% of adults have proficient health literacy.²² That means almost 9 out of 10 Americans find it challenging “to obtain, process, and understand basic health information and services needed to make appropriate health decisions.”²³ Several communication strategies help patients and providers understand each other better, including the teach-back method. It is an evidence-based technique to confirm that people have explained things in a manner others understand.²⁴

Figure 3. Adults who had a doctor's office or clinic visit in the last 12 months whose health providers always gave them easy-to-understand instructions about what to do for a specific illness or health condition, 2011-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2011-2017.

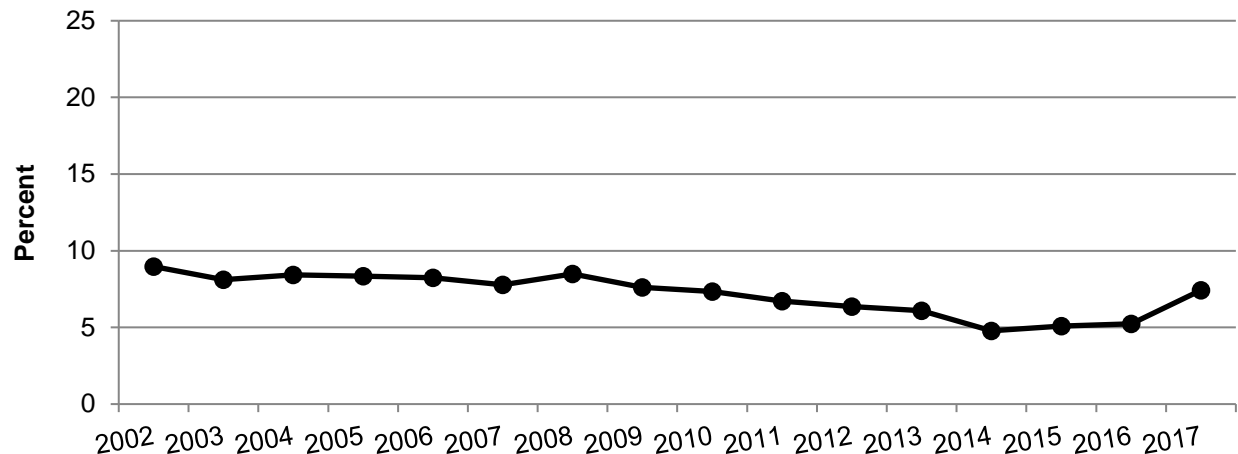
- From 2011 to 2017, overall, the percentage of adults who had a doctor's office or clinic visit in the last 12 months whose health providers always gave them easy-to-understand instructions about what to do for a specific illness or health condition increased from 64.1% to 73.0% (Figure 3).

Improving Trend: Adequate Doctor's Explanation

When healthcare providers use teach-back with their patients, they ask them to describe in their own words what they have heard. If patients cannot teach the information back correctly, providers have to instruct them again using a different way of explaining, until patients are able to teach back what they have learned correctly.²⁵ The use of strategies such as teach-back and shared decision making are contributing to improvements in

patient-provider communication. Breakdowns in communication still exist and require close examination of modes communication, implicit bias and trust building.²⁶

Figure 4. Adults who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never explained things in a way they could understand, 2002-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

Note: For this measure, lower rates are better.

- From 2002 to 2017, overall, the percentage of adults who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never explained things in a way they could understand decreased from 9.0% to 7.4% (Figure 4).

Resources

Efforts to promote person-centered care are underway within the Department of Health and Human Services (HHS). For example:

- The HHS Office of Minority Health has developed [Think Cultural Health](#), a website featuring information, resources, and continuing education opportunities related to culturally and linguistically appropriate services (CLAS) and the National CLAS Standards for healthcare professionals.
- The HHS Office for Civil Rights' (OCR) [Medical School Curriculum Initiative](#) educates college students, medical students, and health professionals about health disparities, cultural competency, and OCR's civil rights authorities. As part of this initiative, OCR takes part in the Association of American Medical Colleges' Summer Health Professionals Education Program (SHPEP). Through the SHPEP, OCR has provided training to nearly 1,000 premedical and predental college students at a dozen universities every summer since 2014.

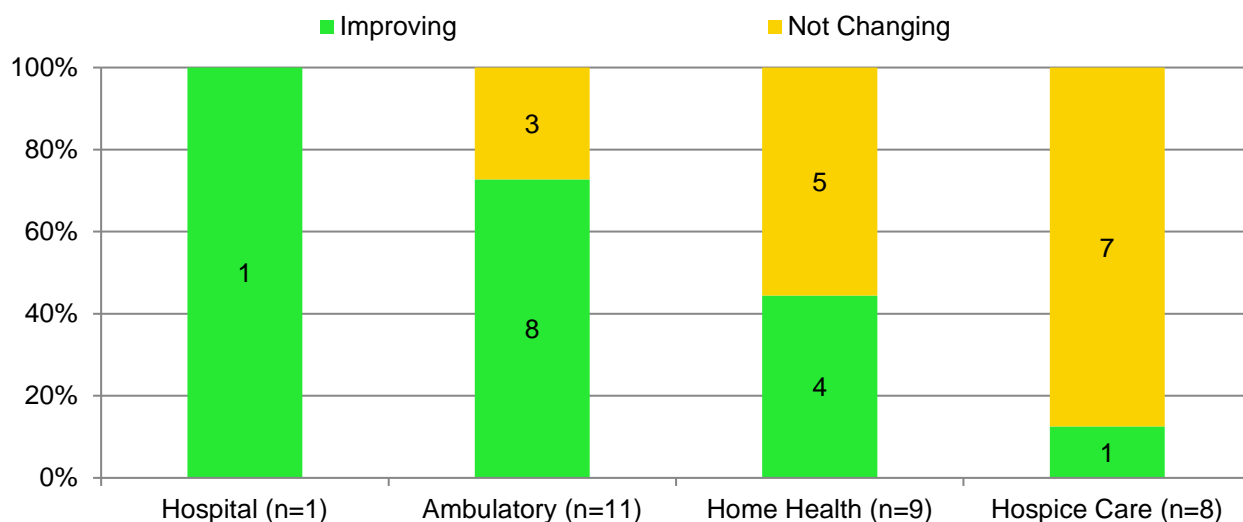
Currently, SHPEP trainings consist of two presentations. The first presentation

has been given to SHPEP students every summer since 2014. It covers racial and ethnic health disparities, cultural and linguistic competence in healthcare, and compliance with Title VI of the Civil Rights Act of 1964. It also covers other civil rights authorities, such as authorities prohibiting sex discrimination (including sexual harassment) in education and health programs or activities funded by HHS. In 2020, OCR added a second presentation on effective communication requirements for individuals who are deaf or hard of hearing, per Section 504 of the Rehabilitation Act of 1973, Title II of the Americans With Disabilities Act, and Section 1557 of the Affordable Care Act.

Patient experience is also affected by a patient's health literacy levels. The Agency for Healthcare Research and Quality (AHRQ) has produced a toolkit called the [SHARE approach](#), which involves a five-step process for shared decision making and tools to help patients and providers ensure clear understanding and communication with one another.

Examining Person-Centered Care Quality Measures by Setting of Care

Figure 5. Number and percentage of all person-centered care measures improving, not changing, or worsening from 2002 to 2018, by setting of care



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percentage change and to assess statistical significance. Progress on individual measures is determined as follows:

- **Improving** = The average annual percentage change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing** = The average annual percentage change is less than 1% in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening** = The average annual percentage change is 1% or greater in the undesirable direction, and $p < 0.10$.

Core measures listed below are noted as improving (green), not changing (yellow), or worsening (red) over time. For more information on how this analysis is conducted,

consult the NHQDR [Introduction and Methods](#). For more details about the measures shown here, visit the NHQDR website (<https://nhqrnet.ahrq.gov/inhqdr/>).

Table 1. Hospital Measures

Among the core person-centered care measures, only one speaks to inpatient quality of care.

Sub-Area	Measure Title (Data Source)
Communication – Medication	Adult hospital patients who sometimes or never had good communication about medications they received in the hospital (HCAHPS)

Table 2. Ambulatory Measures

Among 11 measures related to ambulatory care, 8 were improving over time and 3 were not changing. These measures include patient experience of care measures that examine communication between patients and their providers over the course of a year.

Sub-Area	Measure Title (Data Source)
Health Literacy	Adults with limited English proficiency who had a usual source of care (MEPS)
Health Literacy	Adults who had a doctor's office or clinic visit in the last 12 months whose health providers always gave them easy-to-understand instructions about what to do for a specific illness or health condition (MEPS)
Health Literacy	Adults who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never explained things in a way they could understand (MEPS)
Health Literacy	Adults 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 (MEPS)
Respect	Adults 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 (MEPS)
Respect	Adults who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never listened carefully to them (MEPS)
Shared Decision Making	People with a usual source of care whose providers sometimes or never asked them to help make decisions when there was a choice between treatments (MEPS)
Healthcare Experience	Adults who rated their healthcare received in the last 12 months as poor (0-6) on a scale of 0-10 (where 0 is the worst and 10 is the best) (MEPS)
Health Literacy	Adults with limited English proficiency and a usual source of care (USC) whose USC had language assistance (MEPS)

Sub-Area	Measure Title (Data Source)
Health Literacy	Adults who had a doctor's office or clinic visit in the last 12 months whose health providers always asked them to describe how they would follow the instructions (MEPS)
Health Literacy	Adults who had a doctor's office or clinic visit in the last 12 months whose health providers always offered help in filling out forms (MEPS)

Table 3. Home Health Care Measures

Among 9 home health care measures, 4 were noted as improving over time. The 4 outcome measures that improved pertained to adults reporting on how they engaged with their home health providers. Five measures showed no change.

Sub-Area	Measure Title (Data Source)
Pain	Adults who reported that home health providers talked about pain in the last 2 months of care (HHCAHPS)
Caregiving	Adults who reported being told what care and services they would get when they first started getting home health care (HHCAHPS)
Health Literacy	Adults who reported that home health providers always explained things in a way that was easy to understand in the last 2 months of care (HHCAHPS)
Respect	Adults who reported that home health providers always treated them with courtesy and respect in the last 2 months of care (HHCAHPS)
Caregiving	Adults who reported that home health providers always kept them informed about when they would arrive at their home in the last 2 months of care (HHCAHPS)
Respect	Adults who reported that home health providers always listened carefully to them in the last 2 months of care (HHCAHPS)
Caregiving	Adults who did not have any problem with the care they received from their home health providers in the last 2 months of care (HHCAHPS)
Pain	Adults who reported that home health providers always treated them as gently as possible in the last 2 months of care (HHCAHPS)
Shared Decision Making	Adults who reported getting the help or advice they needed when they contacted their home health providers in the last 2 months of care (HHCAHPS)

Table 4. Hospice Care Measures

Among 8 hospice care outcome measures, only one improved over time.

Sub-Area	Measure Title (Data Source)
Caregiving	Hospice patients whose hospice care team always communicated well with their family caregivers about taking care of them (Hospice CAHPS)
Caregiving	Family caregivers who received right amount of emotional and spiritual support from hospice care team (Hospice CAHPS)
Caregiving	Hospice patients whose hospice care team always treated them with dignity and respect, and really cared about them (Hospice CAHPS)
Caregiving	Family caregivers who rated the hospice care for their family member best (9-10) on a scale of 0-10 (where 0 is the worst and 10 is the best) (Hospice CAHPS)
Caregiving	Family members who definitely received training about taking care of their family member from hospice care team (Hospice CAHPS)
Caregiving	Hospice patients who always received enough help for pain, sadness, breathing, or constipation from hospice care team (Hospice CAHPS)
Caregiving	Family caregivers who would definitely recommend this hospice to their friends and family (Hospice CAHPS)
Caregiving	Hospice patients and family caregivers who always got help as soon as they needed from hospice care team (Hospice CAHPS)

Trends in Patient Safety

The Institute of Medicine (IOM)^{iv} defines patient safety as “freedom from accidental injury due to medical care or medical errors.”²⁷ In 1999, the IOM published their landmark report, *To Err Is Human: Building a Safer Health System*,²⁷ which called for a national effort to reduce medical errors and improve patient safety. Since then, the Agency for Healthcare Research and Quality (AHRQ) has been mandated to lead federal patient safety research. As part of this effort, AHRQ has supported research and quality improvement programs to reduce healthcare-associated infections and healthcare acquired conditions, adverse drug events, and other preventable adverse events.

AHRQ has identified three long-term goals related to patient safety. These include reducing preventable hospital admissions and readmissions, reducing the incidence of

^{iv} The Institute of Medicine formally changed its name to the National Academy of Medicine (NAM) in 2015.

adverse healthcare-associated conditions, and reducing harm from inappropriate or unnecessary care.

A common cause of adverse events is gaps in communication either among healthcare providers or with patients and their family members. Such communication gaps may occur unintentionally and may sometimes result from implicit biases. Researchers have found that patient safety as a quality domain connects directly with person-centered care and care coordination. Researchers, providers, and policymakers need to connect these areas of quality to better understand breakdowns in care so that patients experience safer care and better health outcomes.

In 2015, the National Academy of Medicine (NAM) built on their initial report by publishing *Improving Diagnosis in Health Care*, which identifies eight major goals for effecting progress on diagnostic error and improving patient safety outcomes. Diagnostic performance was not carefully addressed in *To Err is Human*; however, the patient safety field has now established consensus that more attention needs to be placed on both diagnostic error and performance.

AHRQ has also published on the best patient safety practices and most recently published *Making Healthcare Safer III* (<https://www.ahrq.gov/research/findings/making-healthcare-safer/mhs3/index.html>) in 2020. This compendium summarizes the most widely recognized patient safety implementation practices and frameworks in the United States.

Importance of Patient Safety

Mortality

Number of Americans who die in hospitals each year from medical errors (1999 est.) 44,000-98,000²⁷

Age-standardized mortality rate due to adverse effects of medical treatment 1.15 per 100,000 population²⁸

Prevalence

Number of hospital-acquired conditions in U.S. hospitals (2017) 2,550,000²⁹

All-payer 30-day readmission rate (2016) 13.9% of admissions³⁰

Cost

Additional hospital inpatient cost due to hospital-acquired conditions²⁹:

- Central line-associated bloodstream infection\$48,108
- Ventilator-associated pneumonia\$47,238
- Surgical site infection \$28,219
- Venous thromboembolism..... \$17,367

Findings on Patient Safety

The patient safety priority area includes measures of:

- Healthcare-Associated Infections.
- Surgical Care.
- Other Complications of Hospital Care.
- Complications of Medication.
- Birth-Related Complications.
- Maternal Morbidity and Mortality.
- Inappropriate Treatment.
- Supportive and Palliative Care.
- Home Health Communication.

Data for these measures can be found at <https://nhqrnet.ahrq.gov/inhqrdr/data/query>. More information on maternal morbidity and mortality measures can be found in the NHQDR Chartbook on Patient Safety.

Almost 50% of Patient Safety measures showed improvement.

The following 3 measures showed the most improvement:

- Hospital patients with an anticoagulant-related adverse drug event to low-molecular-weight heparin (LMWH) and factor Xa.
- Adverse drug event with IV heparin in adult hospital patients who received an anticoagulant.
- Long-stay nursing home residents with a urinary tract infection.

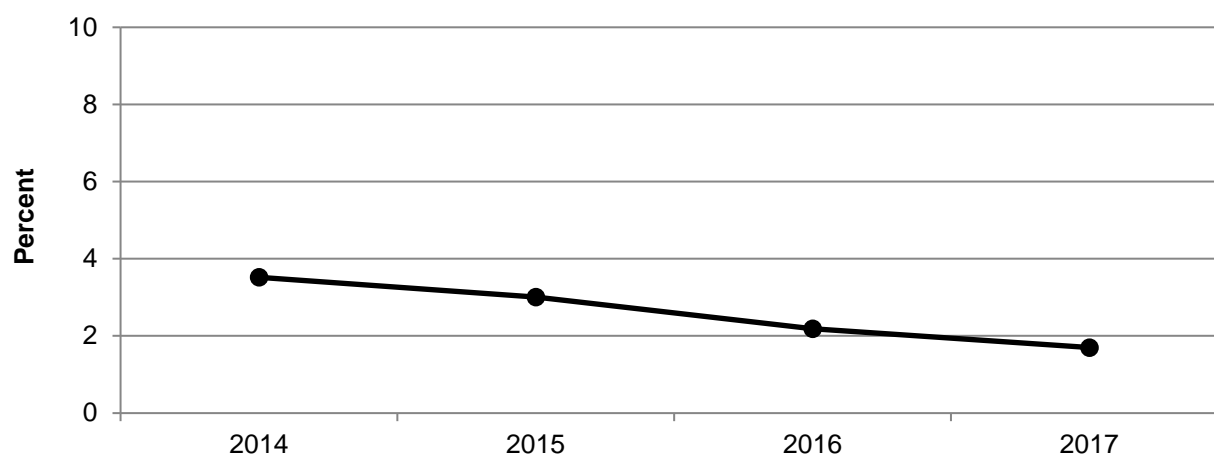
One measure was worsening:

- Adults who reported a home health provider asking to see all the prescription and over-the-counter medicines they were taking, when they first started getting home health care.

Improving Trend: Adverse Drug Events With Heparin and Factor Xa

Adverse drug events (ADEs) include medication errors and adverse drug reactions, representing a major source of harm among hospitalized patients. Anticoagulant drugs, including warfarin, unfractionated heparin, and low-molecular-weight heparin, are among the most commonly implicated medications that cause ADEs in hospitalized patients. Low-molecular-weight heparin (LMWH) is used to prevent venous thromboembolic disease on acute or elective admission to the hospital and to treat deep vein thrombosis and pulmonary embolism.³¹

Figure 6. Adult inpatients with an anticoagulant-related adverse drug event to low-molecular-weight heparin (LMWH) and factor Xa, United States, 2014-2017



Source: Agency for Healthcare Research and Quality and Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System, 2014-2017.

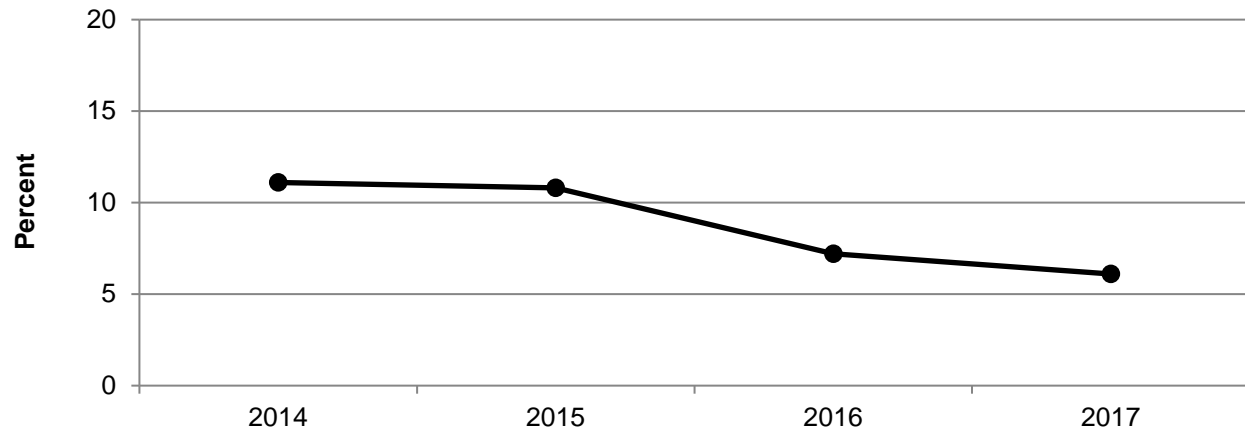
Note: For this measure, lower rates are better.

- From 2014 to 2017, overall, the percentage of adult inpatients with an anticoagulant-related adverse drug event to LMWH and factor Xa decreased from 3.5% to 1.7% (Figure 6).

Improving Trend: Inpatient Adverse Drug Events With Anticoagulants

Blood clots in arteries and veins can cause a blockage of blood flow and lead to strokes and heart attacks. Stroke survivors have an increased risk of another stroke, and individuals with obesity are at higher risk of blood clots. Anticoagulants, such as warfarin, reduce this risk but pose an increased risk of bleeding.³²

Figure 7. Adverse drug event with IV heparin in adult hospital patients who received an anticoagulant, 2014-2017



Source: Agency for Healthcare Research and Quality and Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System, 2014-2017.

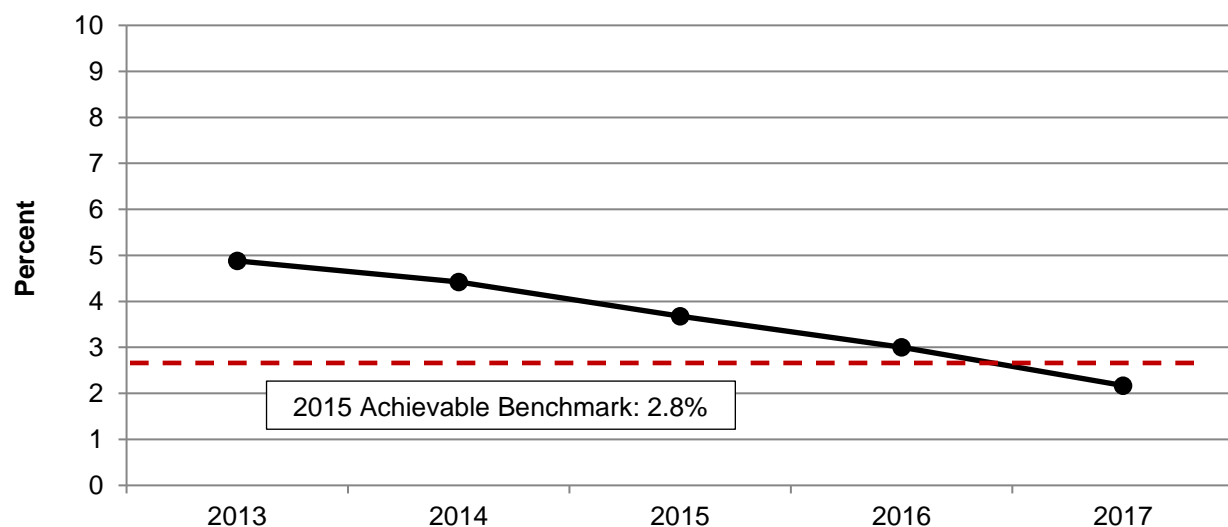
Note: For this measure, lower rates are better.

- From 2014 to 2017, overall, the percentage of inpatient adults who received an anticoagulant and experienced an adverse drug event associated with IV heparin decreased from 11.1% to 6.1% (Figure 7).

Improving Trend: Urinary Tract Infections Among Nursing Home Residents

Urinary tract infections are the second most frequent type of infection among nursing home residents. These residents typically have other comorbidities and may not receive timely diagnoses, “leading to increased rates of adverse drug effects and more recurrent infections with drug-resistant bacteria.”³³

Figure 8. Long-stay nursing home residents with a urinary tract infection, 2013-2017



Source: Centers for Medicare & Medicaid Services, Minimum Data Set, 2013-2017.

Note: For this measure, lower rates are better.

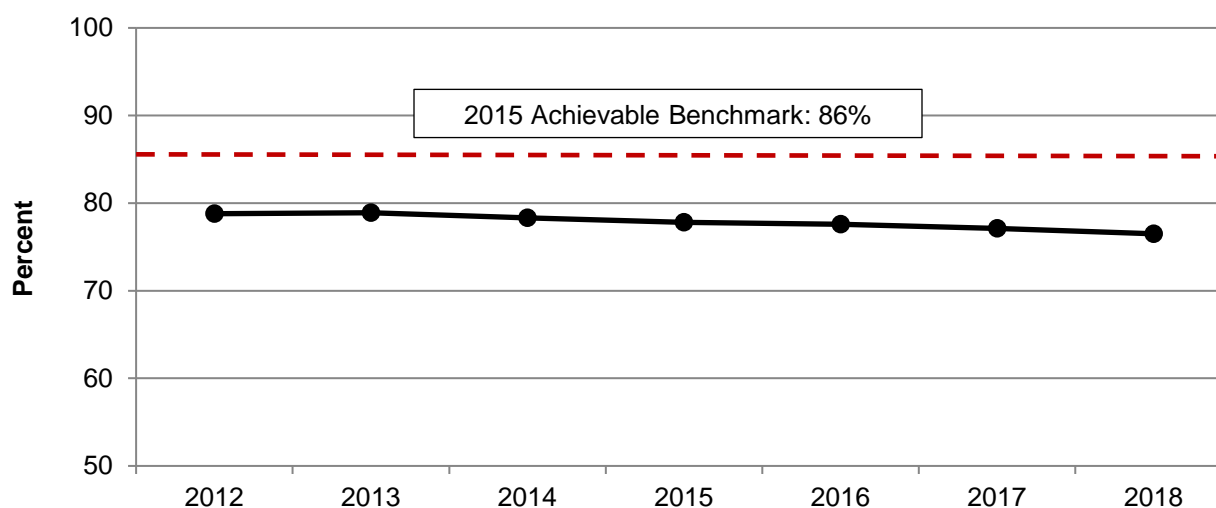
- From 2013 to 2017, overall, the percentage of long-stay nursing home residents with a urinary tract infection decreased from 4.9% to 2.2% (Figure 8).
- The 2015 achievable benchmark was 2.8%. The national rate in 2017 was better than the benchmark percentage.
- The top 5 states that reached the achievable benchmark are California, Connecticut, Hawaii, New Jersey, and New Mexico.

Worsening Trend: Home Health Provider Checking Medication

Home health providers' asking to see all medications is a preliminary step in ensuring that patients take only medications appropriate to their condition and understand why, when, and how much of each medication to take. This step may be especially important in protecting against medication errors and adverse events after transitions from facility-based care to home care.

This measure focuses on patients' recollection of their experience with the home health agency. It is important to note that the skill sets and required background training of home health care workers varies substantially across States. While home health care workers in some States may be trained to assist providers in medication reconciliation, workers in other States may not. Medication reconciliation is a key part of ambulatory care.

Figure 9. Adults who reported a home health provider asking to see all the prescription and over-the-counter medicines they were taking when they first started getting home health care, 2012-2018



Source: Centers for Medicare & Medicaid Services, Home Health Consumer Assessment of Healthcare Providers and Systems, 2012-2018.

- From 2012 to 2018, overall, the percentage of adults who reported a home health provider asking to see all the prescription and over-the-counter medicines they were taking when they first started getting home health care decreased from 78.8% to

76.5% (Figure 9).

- The 2015 achievable benchmark was 86%. There is no evidence of progress toward the benchmark.
- The top 10% of states and territories that reached the achievable benchmark are Alabama, Arkansas, Guam, Louisiana, Mississippi, Northern Mariana Islands, Puerto Rico, Texas, Virgin Islands, and West Virginia (more than 5 states reached the benchmark due to ties).

One home health measure showed widening disparities over time: Oral medication management among home health care patients (see Disparities section, Racial and Ethnic Disparities).

Resources

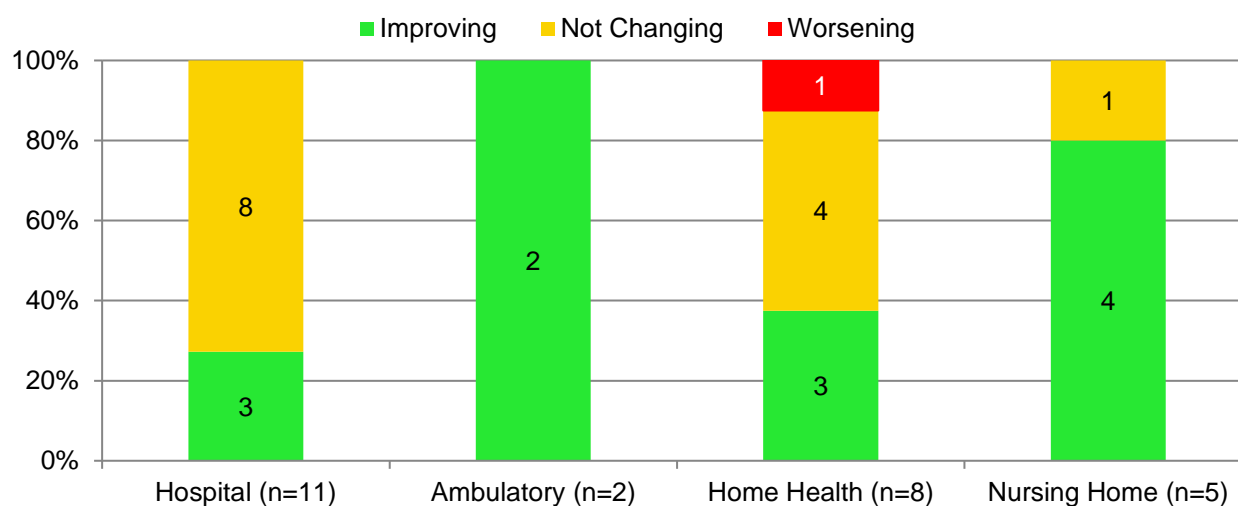
Efforts to promote patient safety are underway within HHS. For example:

- The National Steering Committee for Patient Safety, which published the [National Action Plan to Advance Patient Safety](#), is co-chaired by AHRQ and the Institute for Healthcare Improvement. The National Steering Committee for Patient Safety, with members from the healthcare, policy, regulatory, and advocacy communities, is charged with creating a national action plan to guide patient safety efforts across the country in a cohesive and coordinated fashion.
- AHRQ sponsors the [Comprehensive Unit-based Safety Program \(CUSP\)](#). This patient safety method combines improvement in safety culture, teamwork, and communication with a set or checklist of evidence-based practices known to be effective in preventing the target healthcare-associated infection or other harms. It builds the capacity to address safety issues by combining clinical best practices and the science of safety. The core CUSP principles can be applied to reduce and eliminate healthcare associated infections and perinatal safety events. AHRQ has sponsored [10 related programs](#) to date.
- AHRQ, with the Department of Defense, sponsored the development of Team Strategies and Tools to Enhance Performance and Patient Safety ([TeamSTEPPS](#)). TeamSTEPPS® is an evidence-based set of teamwork tools aimed at optimizing patient outcomes by improving communication and teamwork skills among healthcare professionals. Today, TeamSTEPPS® training is available online and can be used to train inpatient, nursing home, and medical office providers.
- AHRQ has created the On-Time [Pressure Ulcer Prevention Toolkit](#) to help nursing homes with electronic medical records reduce the occurrence of in-house pressure ulcers.

- Communication and Optimal Resolution (CANDOR) is a process healthcare institutions and practitioners can use to respond in a timely, thorough, and just way when unexpected events cause patient harm. AHRQ has pilot tested and produced the [CANDOR Toolkit](#) for hospitals and healthcare systems to implement as a way to respond to harm events and initiate improvements in safety outcomes.

Examining Patient Safety Quality Measures by Setting of Care

Figure 10. Number and percentage of all patient safety measures improving, not changing, or worsening from 2002 to 2018, by setting of care



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percentage change and to assess statistical significance. Progress on individual measures is determined as follows:

- **Improving** = The average annual percentage change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing** = The average annual percentage change is less than 1% in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening** = The average annual percentage change is 1% or greater in the undesirable direction, and $p < 0.10$.

Core measures listed below are noted as improving (green), not changing (yellow), or worsening (red) over time. For more information on how this analysis is conducted, consult the NHQDR [Introduction and Methods](#). For more details about the measures shown here, visit the NHQDR website (<https://nhqrnet.ahrq.gov/inhqrdr/>).

Table 5. Hospital Measures

Among the core patient safety measures, 3 measures were improving and 8 were not changing in the inpatient setting. The improving measures include medication safety and procedural events.

Sub-Area	Measure Title (Data Source)
Medication Safety	Hospital patients with an anticoagulant-related adverse drug event to low-molecular-weight heparin (LMWH) and factor Xa (MPSMS)
Medication Safety	Adverse drug event with IV heparin in adult hospital patients who received an anticoagulant (MPSMS)
Procedural Event	Mechanical adverse events in adult patients receiving central venous catheter placement (MPSMS)
Healthcare-Associated Infections	Adult surgery patients with postoperative pneumonia events (MPSMS)
Medication Safety	Hospital patients with an anticoagulant-related adverse drug event to warfarin (MPSMS)
Medication Safety	Hospital patients who received a hypoglycemic agent who had an adverse drug event with a hypoglycemic agent (MPSMS)
Healthcare-Associated Infections	Adult surgery patients with catheter-associated urinary tract infection (MPSMS)
Surgical Safety	Inpatient adverse events in adults receiving hip joint replacement due to degenerative conditions (MPSMS)
Surgical Safety	Inpatient adverse events in adults receiving hip joint replacement due to fracture (MPSMS)
Surgical Safety	Inpatient adverse events in adults receiving knee replacement (MPSMS)
Venous Thromboembolism	Adult surgery patients with postoperative venous thromboembolic events (MPSMS)

Table 6. Ambulatory Measures

Both of the 2 ambulatory care process measures were improving over time. Both measures also pertain to prescription medication prescribing.

Sub-Area	Measure Title (Data Source)
Medication Safety	Adults age 65 and over who received in the calendar year at least 1 of 11 prescription medications that should be avoided in older adults (MEPS)
Medication Safety	Adults age 65 and over who received in the calendar year at least 1 of 33 potentially inappropriate prescription medications for older adults (MEPS)

Table 7. Home Health Care Measures

Among 8 home health care measures, 3 measures were improving over time, one of which examines a healthcare outcome by looking at oral medication management. All other measures in this setting of care are process measures. One measure examining home health care provider assessment of patient medications was worsening over time.

Sub-Area	Measure Title (Data Source)
Medication Safety	Home health care patients whose management of oral medications improved (OASIS)
Surgical Safety	Home health care patients whose surgical wound was improved (OASIS)
Falls	Adults who reported a home health provider talking with them about how to set up their home so they could move around safely when they first started getting home health care (HHCAHPS)
Medication Safety	Adults who reported a home health provider talking with them about all the prescription and over-the-counter medicines they were taking when they first started getting home health care (HHCAHPS)
Medication Safety	Adult home health patients age 18 and over who reported that home health providers talked with them about the side effects of medicines in the last 2 months of care (HHCAHPS)
Medication Safety	Adults who reported that home health providers talked with them about the purpose for taking their new or changed prescription medicines in the last 2 months of care (HHCAHPS)
Medication Safety	Adults who reported that home health providers talked with them about when to take medicines in the last 2 months of care (HHCAHPS)
Medication Safety	Adults who reported a home health provider asking to see all the prescription and over-the-counter medicines they were taking when they first started getting home health care (HHCAHPS)

Table 8. Nursing Home Care Measures

Among 5 nursing home care measures, 4 were improving over time. The one measure that was not changing over time examines long-stay nursing home patients who experience injuries after falls.

Sub-Area	Measure Title (Data Source)
Procedural Event	Long-stay nursing home residents with a urinary tract infection (MDS)
Pressure Ulcers	Short-stay nursing home patients with new or worsening pressure ulcers (MDS)
Healthcare-Associated Infections	Low-risk, long-stay nursing home residents with a catheter inserted and left in the bladder (MDS)
Pressure Ulcers	High-risk, long-stay nursing home patients with pressure ulcer (MDS)
Falls	Long-stay nursing home patients experiencing one or more falls with major injury (MDS)

Trends in Care Coordination

Healthcare delivery in the United States can be fragmented. Clinical services are frequently organized around small groups of providers who function autonomously and specialize in specific symptoms or organ systems. Therefore, many patients receive attention only for individual health conditions rather than receiving coordinated care. For example, the typical Medicare beneficiary sees two primary care providers and five specialists each year.³⁴ Communication of important information among providers and between providers and patients may entail delays or inaccuracies or may fail to occur.

Care coordination is a conscious effort to ensure that all key information needed to make care decisions is available to patients and providers. It is defined as the deliberate organization of patient care activities between two or more participants involved in a patient's care to facilitate appropriate delivery of healthcare services.³⁵ Care coordination is multidimensional and essential to preventing adverse events, ensuring efficiency, and making care patient centered.³⁶

Patients in greatest need of care coordination include those with:

- Multiple chronic medical conditions,
- Concurrent care from several health professionals,
- Many medications,
- Extensive diagnostic workups, or
- Transitions from one care setting to another.

Effective care coordination requires well-defined multidisciplinary teamwork based on the principle that all who interact with a patient must work together to ensure the delivery of safe, high-quality care.

The goal of care coordination is to enable healthcare providers, patients, and caregivers to all work together to understand and make sure that “patient's needs and preferences are known and communicated at the right time to the right people, and that this information is used to guide the delivery of safe, appropriate, and effective care.”³⁷

While measurement of care coordination is at an early stage of development, key goals include coordinating transitions of care, reducing hospital readmissions, communicating medication information, and reducing preventable emergency department visits.

Importance of Care Coordination

Morbidity and Mortality

Care coordination interventions have been shown to:

- Reduce mortality among patients with heart failure;
- Reduce mortality and dependency among patients with stroke;
- Reduce symptoms among patients with depression and at the end of life; and
- Improve glycemic control among patients with diabetes.³⁵

Cost

Care coordination interventions have been shown to:

- Reduce hospitalizations among patients with heart failure;
- Reduce readmissions among patients with mental health conditions; and
- Be cost-effective when applied to treatment of depression.³⁵

Findings on Care Coordination

The care coordination priority area includes measures of:

- Medication Information.
- Preventable Emergency Department Visits.
- Preventable Hospitalizations among Home Health Patients.
- Supportive and Palliative Care.
- Transitions of Care.

Other areas represented in the supplemental dataset include:

- Preventable Hospitalizations.
- Potentially Harmful Services without Benefit.
- Potentially Avoidable Admissions.

Data for these measures can be found at <https://nhqrnet.ahrq.gov/inhqrdr/data/query>.

Progress in Care Coordination has been slow, with little improvement and three measures getting worse.

Only three measures showed improvement overall:

- Adult hospital patients who did not receive good communication about discharge information.
- People with a usual source of care who usually asks about prescription medications and treatments from other doctors.
- Adults who reported that home health providers always seem informed and up to date about all the cares or treatments they got at home in the last 2 months of care.

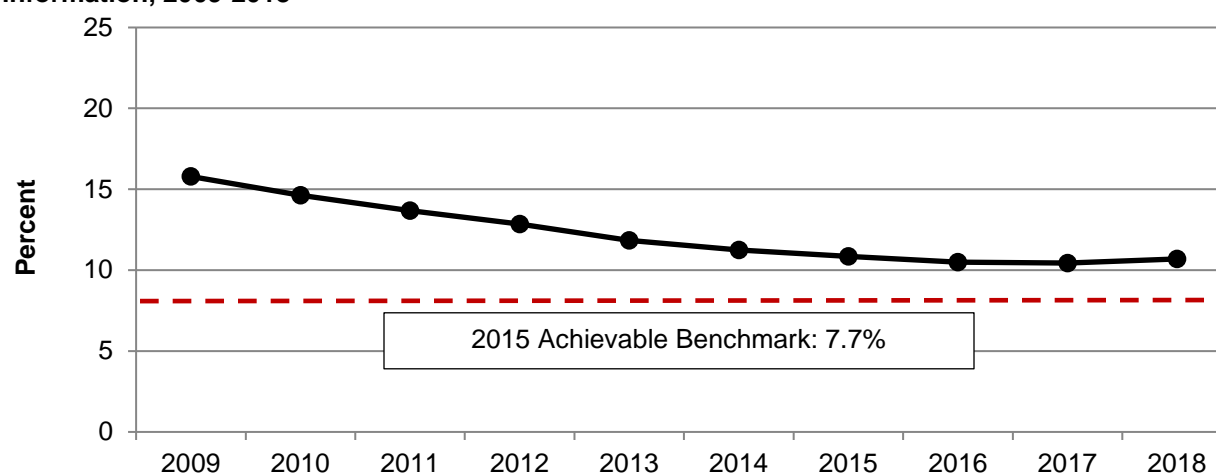
Three measures were worsening:

- Home health care patients who had an emergency department visit without a hospitalization.
- Home health care patients who had an emergency department visit and were then hospitalized.
- Emergency department visits for asthma per 10,000 population, ages 2-19.

Improving Trend: Communication About Discharge Information

Effective care coordination begins with ensuring that accurate clinical information is available to support medical decisions by patients and providers. A common transition of care is discharge from the hospital. Giving patients and caregivers self-management support after discharge has been shown to reduce readmissions to the hospital and lower costs.³⁸

Figure 11. Adult hospital patients who did not receive good communication about discharge information, 2009-2018



Source: Centers for Medicare & Medicaid Services, Hospital Consumer Assessment of Healthcare Providers and Systems, 2009-2018.

Note: For this measure, lower rates are better.

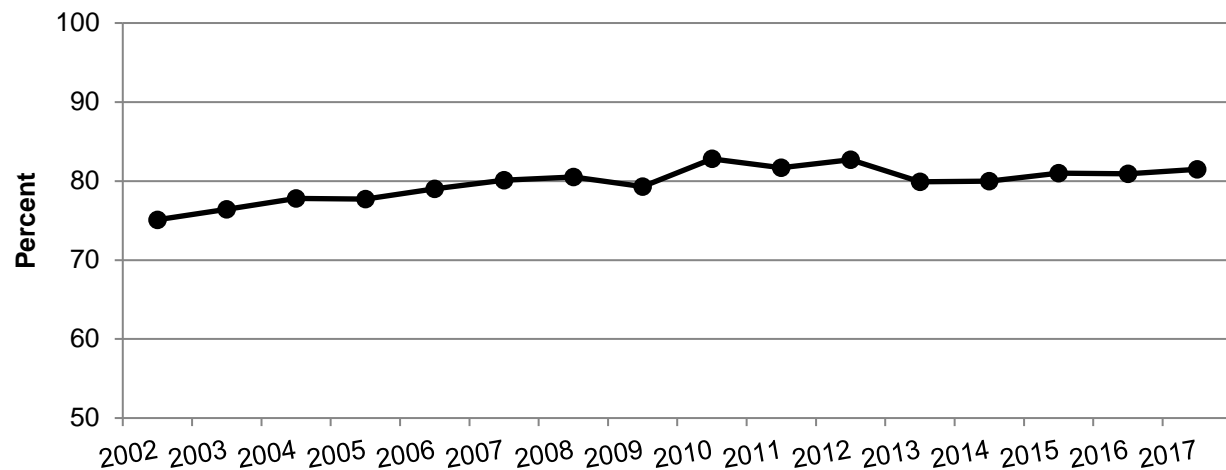
- From 2009 to 2018, overall, the percentage of hospital patients who did not receive good communication about discharge information decreased from 15.8% to 10.7% (Figure 11).
- The 2015 achievable benchmark was 7.7%. At the current rate of decrease, overall, the benchmark could be achieved in 4 years.
- The top 5 states that reached the achievable benchmark are Colorado, Nebraska, New Hampshire, South Dakota, and Utah.

Improving Trend: Communication About Treatment From Other Doctors

Different providers may prescribe medications for the same patient. Patients are responsible for keeping track of all their medications, but medication information can be confusing, especially for patients on multiple medications. When care is not well coordinated and some providers do not know about all of a patient's medications, patients are at greater risk for adverse events related to drug interactions, overdosing, or underdosing.

In addition, providers need to periodically review all of a patient's medications to ensure that they are taking what is needed and only what is needed. Medication reconciliation has been shown to reduce both medication errors and adverse drug events.³⁹

Figure 12. People with a usual source of care who usually asks about prescription medications and treatments from other doctors, 2002-2017



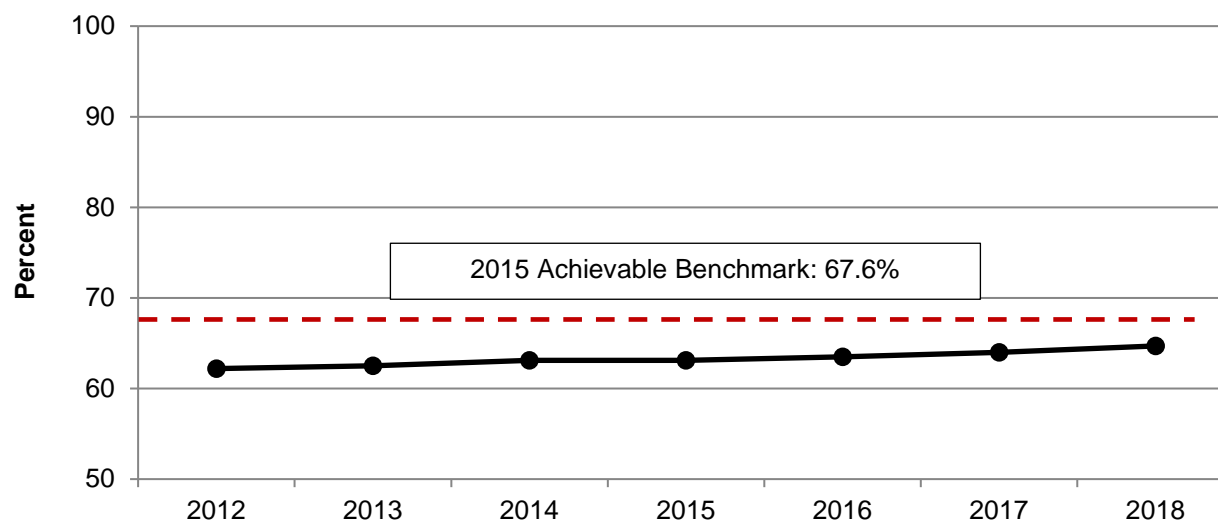
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

- From 2002 to 2017, overall, the percentage of people with a usual source of care who usually asks about prescription medications and treatments from other doctors increased from 75.1% to 81.5% (Figure 12).

Improving Trend: Home Health Care Provider Communication

Home health care providers play a critical role in the management of home health care patients, especially those receiving supportive and palliative care. Many of these patients are managing multiple chronic conditions, severe morbidities, and terminal illnesses. Effective home health care coordination and treatment management can prevent patients from experiencing recurring hospital admissions or having to resort to long-term care facilities.

Figure 13. Adults who reported that home health providers always seemed informed and up to date about all the care or treatments they got at home in the last 2 months of care, 2012-2018



Source: Centers for Medicare & Medicaid Services, Hospital Consumer Assessment of Healthcare Providers and Systems, 2012-2018.

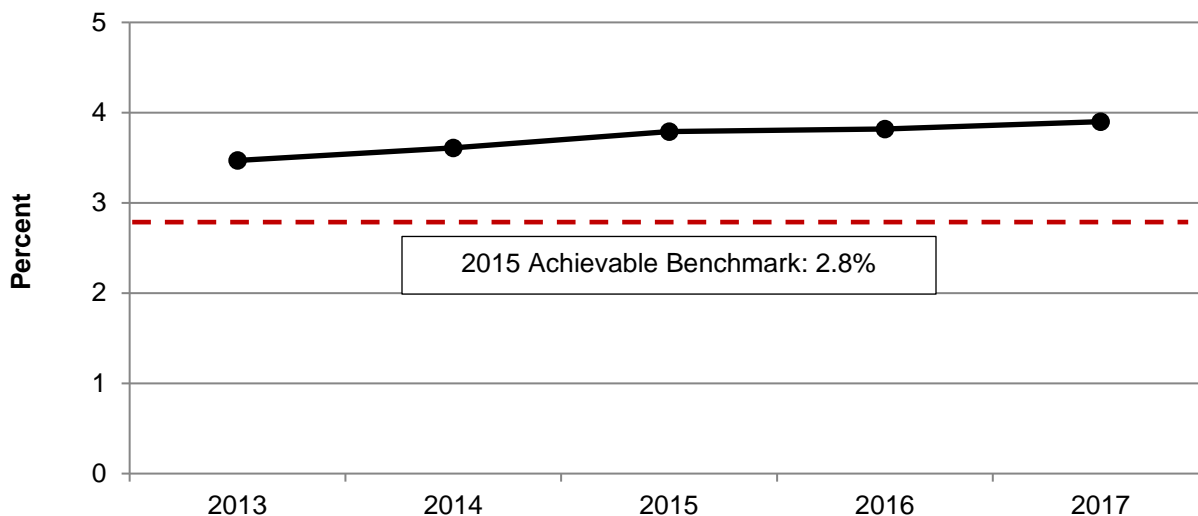
- From 2012 to 2018, overall, the percentage of adults who reported that home health providers always seemed informed about their care and treatment received at home during the last 2 months of care improved from 62.2% to 64.7% (Figure 13).
- The 2015 achievable benchmark was 67.6%. At the current rate of decrease, overall, the benchmark could be achieved in 7 years.
- The states and territories that reached the achievable benchmark are Alabama, Georgia, Kentucky, Louisiana, South Carolina, Tennessee, and Virgin Islands (more than 5 states reached the benchmark due to ties).

Worsening Trend: Emergency Department Visits of Home Health Patients

Home health care patients can usually manage their lives with a home health care provider's support and coordination. When home health care cannot meet a patient's needs, he or she may be referred to the emergency department.

An emergency department visit for an urgent need/assessment without a hospitalization is a positive outcome; however, without care coordination, patients may experience similar or related emergencies and find themselves in the emergency department again. Such recurrences can lead to increased costs to the patient and family and poor health outcomes for the patient.

Figure 14. Home health care patients who had an emergency department visit without a hospitalization, 2013-2017



Source: Centers for Medicare & Medicaid Services, Outcome and Assessment Information Set, 2013-2017.

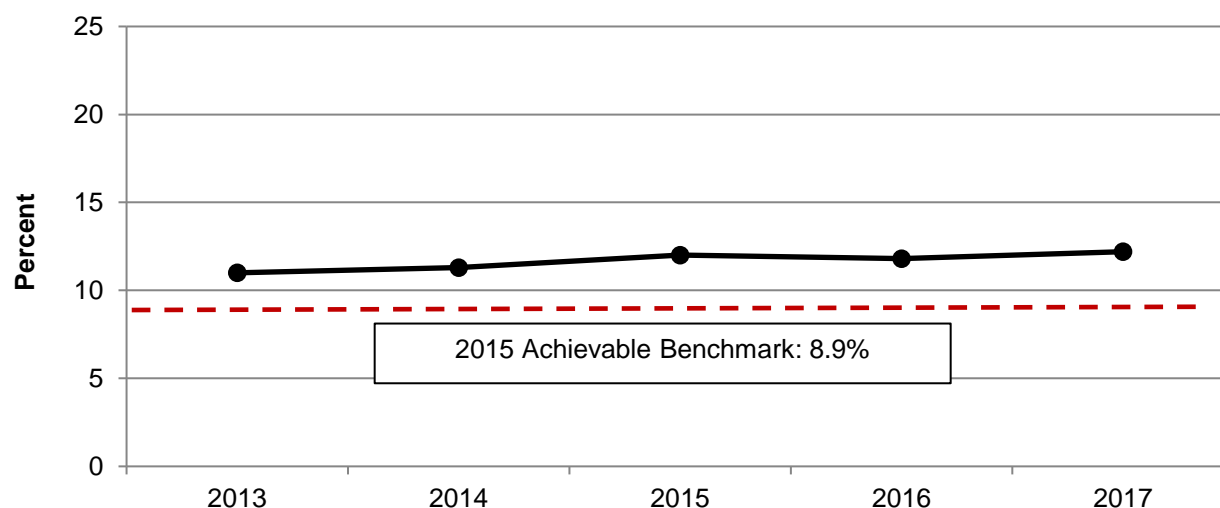
Note: For this measure, lower rates are better.

- From 2013 to 2017, overall, the percentage of home health care patients who had an emergency department visit without a hospitalization increased from 3.5% to 3.9% (Figure 14).
- The 2015 achievable benchmark was 2.8%. There is no evidence of progress toward the benchmark.
- The states and territories that reached the achievable benchmark are Alabama, District of Columbia, Florida, New Jersey, Puerto Rico, and Texas (more than 5 states or territories reached the benchmark due to ties).

Worsening Trend: Hospitalization of Home Health Patients

Acute care hospitalization is the hospital admission rate for Medicare beneficiaries receiving skilled home health benefits, and its reduction is seen as a way to improve quality and reduce healthcare costs. Nearly 20% of all Medicare beneficiaries discharged from hospitals are rehospitalized within 30 days and 34% are rehospitalized within 90 days.⁴⁰

Figure 15. Home health care patients who had an emergency department visit and were then hospitalized, 2013-2017



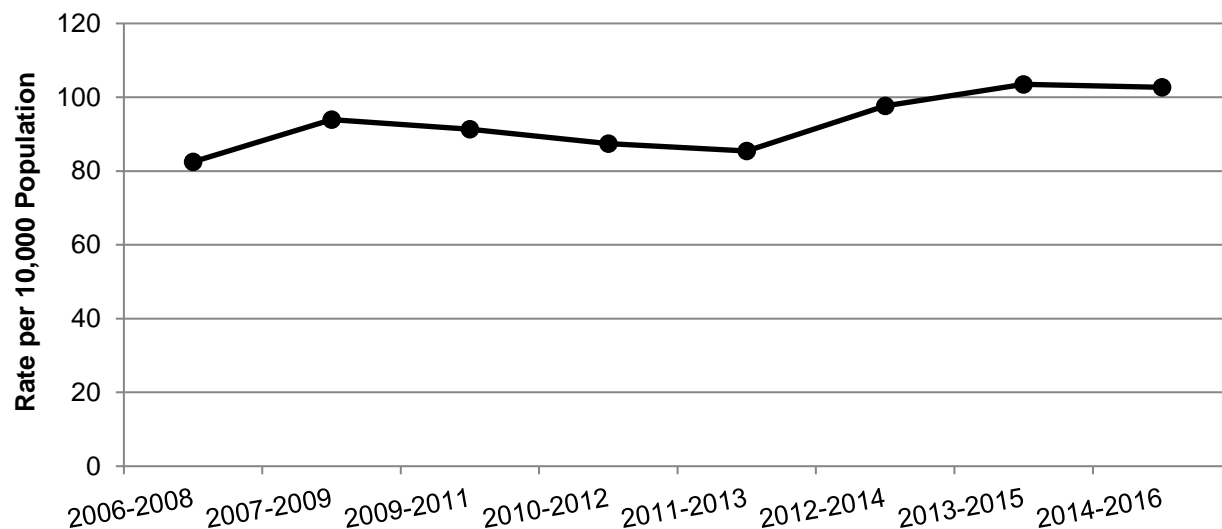
Source: Centers for Medicare & Medicaid Services, Outcome and Assessment Information Set, 2013-2017.

Note: For this measure, lower rates are better.

- From 2013 to 2017, overall, the percentage of home health care patients who had an emergency department visit and were then hospitalized increased from 11% to 12.2% (Figure 15).
- The 2015 achievable benchmark was 8.9%. There is no evidence of progress toward the benchmark.
- The top 10% of states and territories that reached the achievable benchmark are California, Colorado, District of Columbia, Montana, Puerto Rico, and Utah (more than 5 states or territories reached the benchmark due to ties).

Worsening Trend: Emergency Department Visits for Asthma Among Children

In 2018, 19.2 million adults and 5.5 million children in the United States had asthma.⁴¹ Access to care is hampered by socioeconomic disparities, shortages of primary care physicians in minority communities, and language and literacy barriers.⁴²

Figure 16. Emergency department visits for asthma per 10,000 population, ages 2-19, 2006-2016

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Hospital Ambulatory Medical Care Survey, 2006-2016.

Note: For this measure, lower rates are better.

- From 2006 to 2016, overall, the rate of emergency department visits for asthma among children ages 2–19 years increased from 82.5 to 102.7 per 10,000 population (Figure 16).

Resources

Efforts to promote care coordination are underway within HHS. AHRQ has produced several resources and reports to support improved care coordination in healthcare delivery, including:

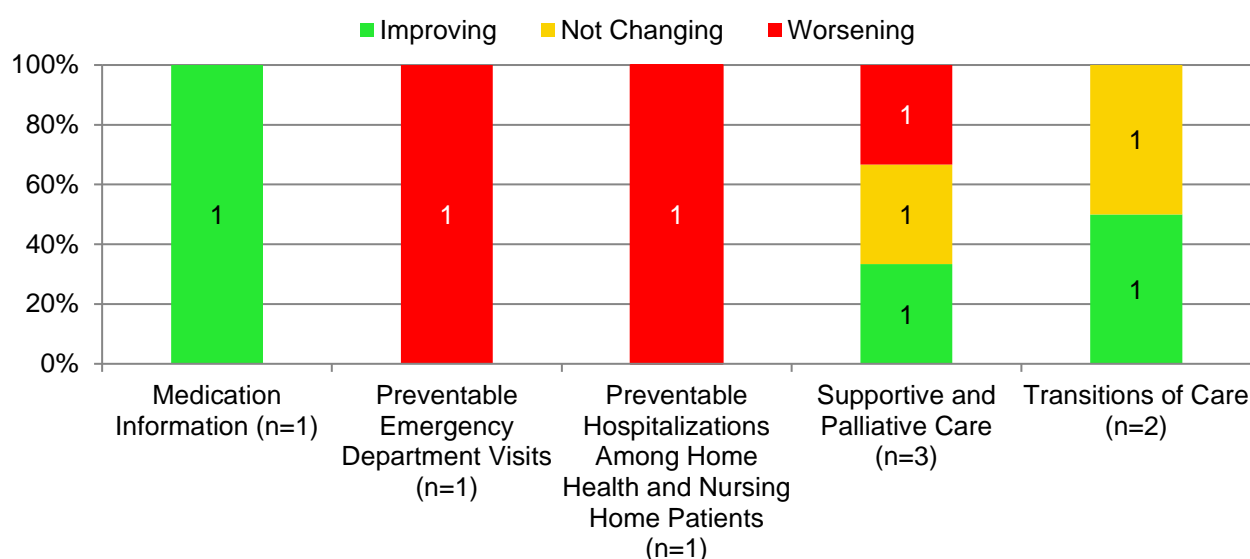
- The [Care Coordination Measures Atlas Update](#) (published in 2014) expands on the atlas first published by AHRQ in 2011. The updated compendium of care coordination measures offers new measures with a focus on those that reflect coordination efforts within the primary care setting. It also includes a section on emerging trends in care coordination measurement.
- [Care Coordination Accountability Measures for Primary Care Practice](#) presents measures selected systematically from the Care Coordination Measures Atlas that are well suited for use by health plans and insurers to assess the quality of coordination in primary care practices. Primary care practices can also use the measures to assess their own performance.
- The [Care Coordination Quality Measure for Primary Care](#) (CCQM-PC) is a survey of adult patients' experiences with care coordination in primary care settings. It was developed to comprehensively assess patient perceptions of the quality of their care coordination experiences. The CCQM-PC is designed to be used in

primary care research and evaluation, with potential applications to primary care quality improvement. Guidance regarding the fielding of the survey is provided in addition to the full survey, which is in the public domain and may be used without additional permission.

- The [Clinical-Community Relationships Measures Atlas](#) was published in 2013 to identify ways to further define, measure, and evaluate programs based on clinical-community relationships for the delivery of clinical preventive services. This atlas provides a measurement framework and lists existing measures of clinical-community relationships and is intended to support research and evaluation in the field.

Examining Care Coordination Quality Measures by Topic Areas

Figure 17. Number and percentage of all care coordination measures improving, not changing, or worsening from 2002 to 2018, by sub-area



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percentage change and to assess statistical significance. Progress on individual measures is determined as follows:

- **Improving** = The average annual percentage change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing** = The average annual percentage change is less than 1% in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening** = The average annual percentage change is 1% or greater in the undesirable direction, and $p < 0.10$.

Core measures listed below are noted as improving (green), not changing (yellow), or worsening (red) over time. For more information on how this analysis was conducted, go to NHQDR [Introduction and Methods](#). For more details about the measures shown here, visit the NHQDR website (<https://nhqrnet.ahrq.gov/inhqdr/>).

Table 9. Medication Information Measures

Among all care coordination core measures, one medication information measure improved over time.

Sub-Area	Measure Title (Data Source)
Prescription Medications and Treatment	People with a usual source of care who usually asks about prescription medications and treatments from other doctors (MEPS)

Table 10. Preventable Emergency Department Visit Measures

Among all care coordination core measures, one measure pertaining to emergency department visits for asthma worsened over time.

Sub-Area	Measure Title (Data Source)
Asthma	Emergency department visits for asthma per 10,000 population, ages 2-19 (NHAMCS)

Table 11. Preventable Hospitalizations Among Home Health and Nursing Home Patient Measures

Among all care coordination core measures, one measure pertaining to preventable emergency department visits worsened over time.

Sub-Area	Measure Title (Data Source)
Emergency Department Visits	Home health care patients who had an emergency department visit and were then hospitalized (OASIS)

Table 12. Supportive and Palliative Care Measures

Three measures under supportive and palliative care examine the experiences of home health patients. Patient reporting of home health provider awareness of their past treatment plan showed improvement whereas number of patients who had an emergency department visit without a hospitalization worsened over time.

Sub-Area	Measure Title (Data Source)
Patient-Provider Communication	Adults who reported that home health providers always seemed informed and up to date about all the care or treatments they got at home in the last 2 months of care (HHCAHPS)
Hospital Admissions	Home health care patients who had to be admitted to the hospital (OASIS)
Emergency Department Visits	Home health care patients who had an emergency department visit without a hospitalization (OASIS)

Table 13. Transitions of Care Measures

Among all care coordination core measures, one measure pertaining to communication about discharge information improved over time and another examining patient experience of providers who considered their preferences did not change over time.

Sub-Area	Measure Title (Data Source)
Patient Discharge	Adult hospital patients who did not receive good communication about discharge information (HCAHPS)
Patient Discharge	Adult hospital patients who strongly disagree or disagree that staff took their preferences and those of their family and caregiver into account when deciding what the patient's discharge healthcare would be (HCAHPS)

Trends in Affordable Care

The Affordable Care Act of 2010 established the Triple Aim to support better care for individuals, better health for populations, and lower costs for care. The law also created a platform to test new healthcare payment and delivery models. Tracking this quality domain helps healthcare professionals, researchers, and policymakers better understand the status of affordable [care](#).

Reducing the cost of healthcare will support two related goals under this quality domain. The first includes ensuring affordable and accessible high-quality healthcare for people, families, employers, and governments. The second is supporting and enabling communities to ensure accessible, high-quality care while reducing waste and fraud.

Importance of Affordable Care

Morbidity and Mortality

Affordability of care remains a central barrier to access to care for many individuals and families. Several financial and nonfinancial barriers contribute to the inaccessibility of care. Financial barriers include high premiums, lack of insurance, and underinsurance. Nonfinancial barriers include transportation challenges, negative interactions with care teams, delayed access to a healthcare provider, and inability to access care due to competing demands (e.g., childcare, work schedules)⁴³ Past research continues to show that lack of insurance and inaccessible care are linked to patient mortality.^{44,45}

Cost

Care coordination interventions have been shown to:

- Reduce hospitalizations among patients with heart failure;
- Reduce readmissions among patients with mental health conditions; and
- Be cost-effective when applied to treatment of depression.³⁵

Findings on Affordable Care

The affordable care priority area includes measures of:

- Usual Source of Care.
- Financial Burden of Healthcare.

Data for these measures can be found at <https://nhqrnet.ahrq.gov/inhqrdr/data/query>.

**Among the five Affordable Care measures, two improved
and three did not change over time.**

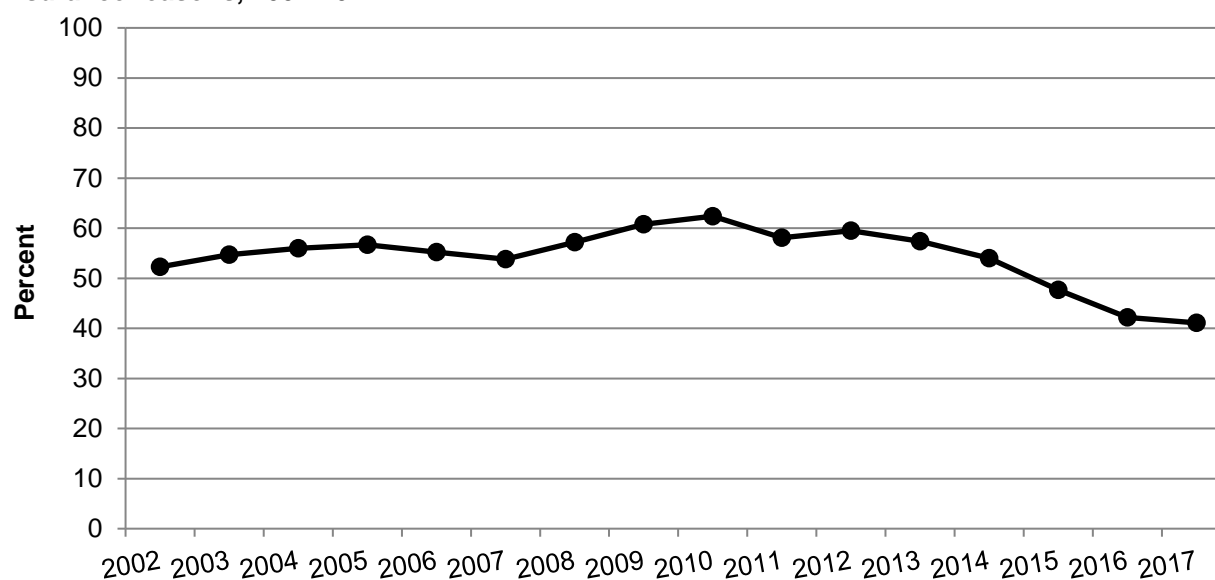
Half of the measures examining usual source of care showed improvement:

- People unable to get or delayed in getting needed medical care due to financial or insurance reasons.
- People unable to get or delayed in getting needed prescription medicines due to financial or insurance reasons.

Improving Trend: Barriers to Medical Care

The high cost of care continues to be an affordability challenges for patients. In recent years, the United States has observed lower rates of inaccessibility due to improved insurance access. Underinsurance and cost barriers continue to pose challenges with accessibility.

Figure 18. People unable to get or delayed in getting needed medical care due to financial or insurance reasons, 2002-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

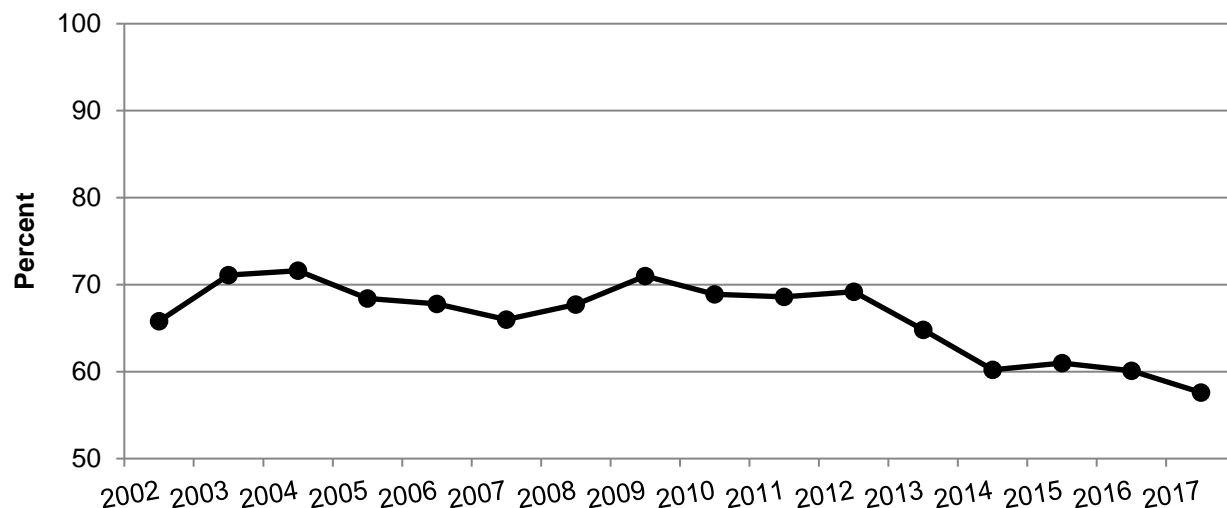
Note: For this measure, lower rates are better.

- From 2002 to 2017, overall, the percentage of people who were unable to get or delayed in getting needed medical care due to financial or insurance reasons decreased from 52.3% to 41.1% (Figure 18).

Improving Trend: Barriers to Getting Prescription Medicines

Prescription medications costs continue to pose challenges with affordability and accessibility for patients, especially since prescription drug costs for some diseases continue to rise.⁴⁶ Many adults who are managing multiple chronic conditions and those who require specialty prescriptions and therapies may experience higher and unaffordable costs of treatment.

Figure 19. People unable to get or delayed in getting needed prescription medicines due to financial or insurance reasons, 2002-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

Note: For this measure, lower rates are better.

- From 2002 to 2017, overall, the percentage of people who were unable to get or delayed in getting needed prescription medicines due to financial or insurance reasons decreased from 65.8% to 57.6% (Figure 19).

Resources

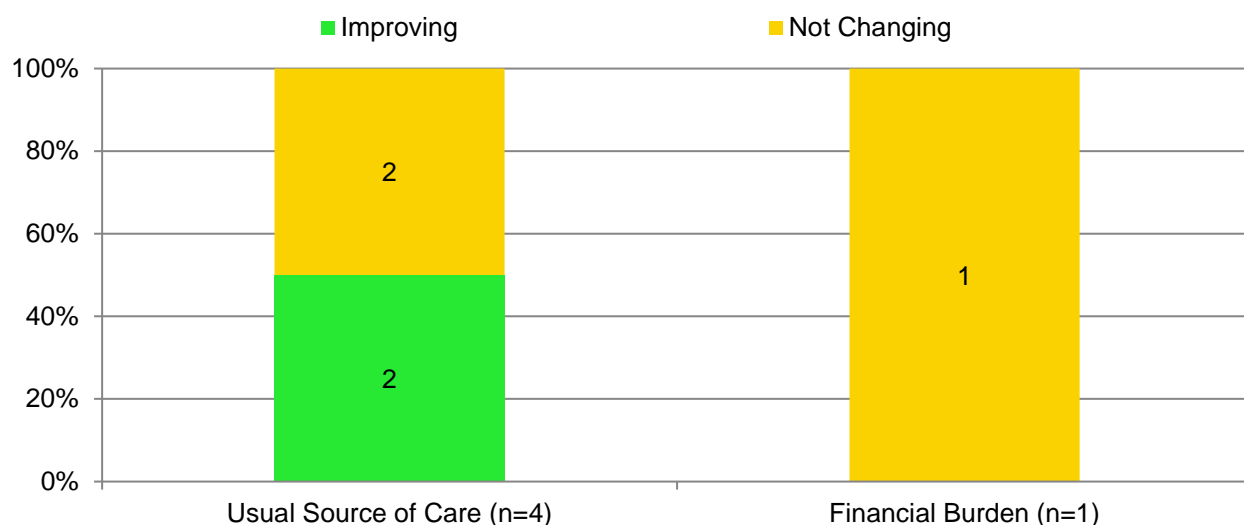
Efforts to promote affordable care are underway within the Department of Health and Human Services (HHS). For example:

- The Department is working to transform our system from one that pays for procedures and sickness (volume-based care) to one that pays for outcomes and health (value-based care, or VBC). The Centers for Medicare & Medicaid Services (CMS) operates [multiple VBC programs](#), which span different settings of care (e.g., inpatient, home health) and conditions (e.g., end stage renal disease and hospital-acquired conditions). In January 2017, CMS implemented the [Quality Payment Program for clinicians](#), which consists of two tracks: the Merit-based Incentive Payment Systems (MIPS); and participation in Advanced Alternative Payment Models (APMs). Both tracks commit clinicians to practicing VBC.
- Health Resources and Services Administration (HRSA)-sponsored [Federally Qualified Health Centers](#) function as part of the nation's safety net. These providers receive funds from the [HRSA Health Center Program](#) to provide primary care services in underserved areas.

- CMS offers the [Consumer Assistance Program](#), which originated as a state-based federal grant program. State CAPs offer direct assistance by phone, direct mail, email, or walk-in locations to help consumers learn how to obtain or use their insurance effectively.
- CMS's Office of Minority Health produces [Coverage to Care \(C2C\)](#), which offers healthcare coverage information in multiple languages for providers and patients.

Examining Affordable Care Quality Measures by Sub-Areas

Figure 20. Number and percentage of all affordable care measures improving, not changing, or worsening from 2002 to 2017, by sub-areas



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percentage change and to assess statistical significance. Progress on individual measures is determined as follows:

- **Improving** = The average annual percentage change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing** = The average annual percentage change is less than 1% in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening** = The average annual percentage change is 1% or greater in the undesirable direction, and $p < 0.10$.

Core measures listed below are noted as improving (green), not changing (yellow), or worsening (red) over time. For more information on how this analysis was conducted, consult the NHQDR [Introduction and Methods](#). For more details about the measures shown here, visit the NHQDR website (<https://nhqrnet.ahrq.gov/inhqdr/>).

Table 14. Usual Source of Care Measures

Among a total of 4 measures, 2 were improving over time and 2 were not changing over time. These include measures regarding affordability of medical and dental care.

Sub-Area	Measure Title (Data Source)
Medical Care	People unable to get or delayed in getting needed medical care due to financial or insurance reasons (MEPS)
Prescription Medication	People unable to get or delayed in getting needed prescription medicines due to financial or insurance reasons (MEPS)
Dental Care	People unable to get or delayed in getting needed dental care due to financial or insurance reasons (MEPS)
Primary Care	People without a usual source of care who indicated a financial or insurance reason for not having a source of care (MEPS)

Table 15. Financial Burden of Healthcare Measures

The core set of measures includes only one measure that specifically examines the financial burden of healthcare. This measure was not changing over time.

Sub-Area	Measure Title (Data Source)
Medical Care	People under age 65 whose family's health insurance premium and out-of-pocket medical expenditures were more than 10% of total family income (MEPS)

Trends in Effective Treatment

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, more than half of all Americans are managing one chronic disease and do not receive the full benefits of high-quality care.^{47,48}

The effective treatment quality domain focuses on promoting the most effective prevention and treatment practices for the leading causes of mortality, with a particular emphasis on cardiovascular disease. The NHQDR focuses on leading causes of mortality because these conditions have more robust data available. Musculoskeletal disease is not a leading cause of death, but it is included in the report because it is a leading cause of functional limitation in the United States.

Importance of Effective Treatment

Morbidity and Mortality

Effective treatment interventions have been shown to reduce mortality and morbidity among patients with chronic diseases. The number of deaths for the following conditions show some of the leading causes of death in the United States in 2018:

- Heart disease: 655,381
- Cancer: 599,274
- Chronic lower respiratory diseases: 159,486
- Stroke (cerebrovascular diseases): 147,810
- Alzheimer's disease: 122,019
- Diabetes: 84,946
- Influenza and pneumonia: 59,120
- Nephritis, nephrotic syndrome, and nephrosis: 51,386
- Intentional self-harm (suicide): 48,344⁴⁹

The prevention of these conditions and reductions in mortality can be supported with effective primary and preventive care.

Findings on Effective Treatment

The effective treatment priority area includes measures of the following:

- Cancer
 - Breast Cancer
 - Colorectal Cancer
 - Other Cancers
- Cardiovascular Disease
 - Prevention of Heart Disease
 - Treatment of Heart Attack
 - Treatment of Heart Failure
 - Surgery for Heart and Vascular Disease
 - Stroke
- Chronic Kidney Disease
 - Care of End Stage Renal Disease

- Diabetes
 - Management of Diabetes
 - Control of Diabetes
 - Hospitalizations for Diabetes
- HIV/AIDS
 - Management of HIV/AIDS
- Mental Health and Substance Use Disorder
 - Treatment of Depression
 - Treatment of Substance Use Disorder
- Musculoskeletal Disease
- Respiratory Diseases
 - Treatment of Respiratory Infections
 - Management of Asthma

Measures cover preventive care, treatment of illness, chronic disease management, and outcomes of care. Data for these measures can be found at <https://nhqrnet.ahrq.gov/inhqrdr/data/query>.

More than 40% of Effective Treatment measures improved, 50% did not change, and about 8% got worse.

The three measures of effective treatment that showed the greatest improvement were measures related to the treatment of illness:

- Adult hemodialysis patients with adequate dialysis - Kt/V 1.2 or higher.
- Doctor's office and emergency department visits where antibiotics were prescribed for a diagnosis of common cold per 10,000 population.
- Patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined.

Three effective treatment measures worsened over time, including two measures pertaining to opioid use and one that looks at suicide mortality:

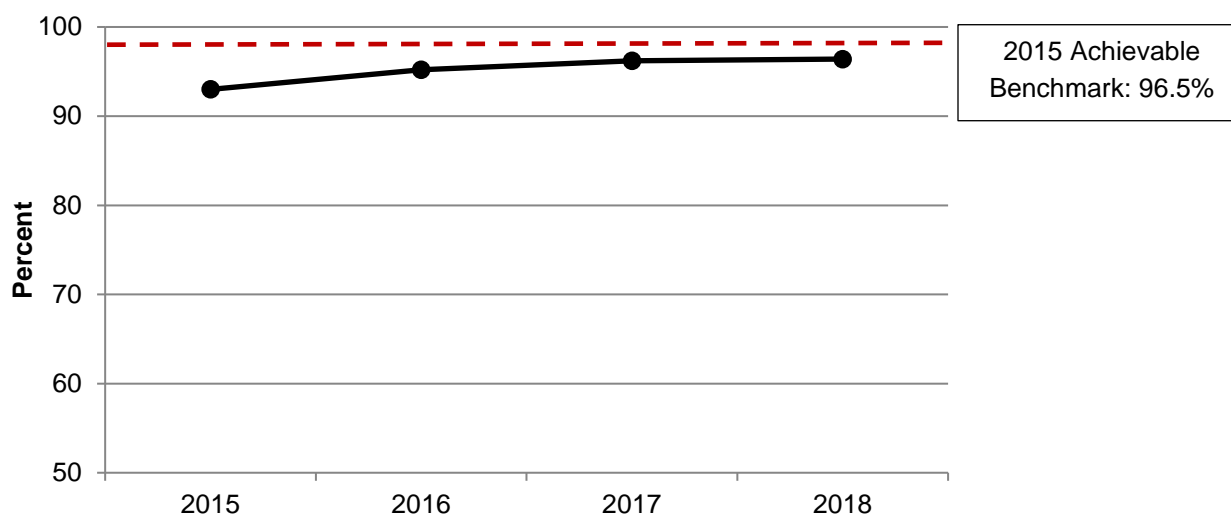
- Emergency department visits involving opioid-related diagnoses per 100,000 population.

- Hospital inpatient stays involving opioid-related diagnoses per 100,000 population.
- Suicide deaths among people age 12 and over per 100,000 population.

Improving Trend: Dialysis Treatment for Patients on Hemodialysis

Dialysis or even a kidney transplant can improve the longevity of patients with kidney failure. Without adequate dialysis, patients on hemodialysis are more likely to incur frequent hospitalizations and emergency department visits. In 2016, nearly 125,000 people in the United States started treatment for end stage renal disease (ESRD), and 2 in every 1,000 people were on dialysis or were living with a kidney transplant. Each day, more than 240 people receiving dialysis will die.⁵⁰

Figure 21. Adult hemodialysis patients with adequate dialysis - Kt/V 1.2 or higher, 2015-2018



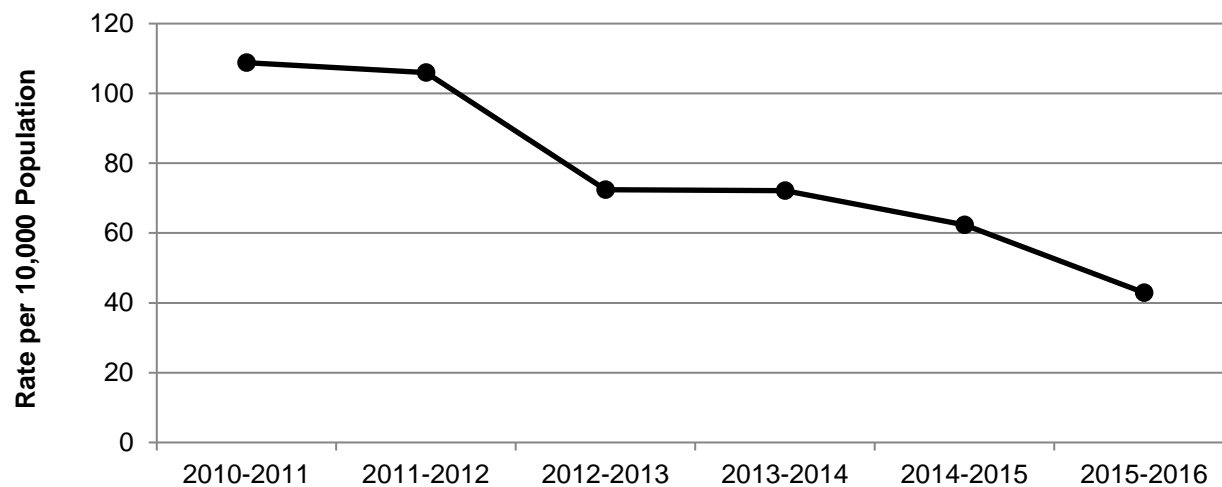
Source: University of Michigan Kidney Epidemiology and Cost Center, Dialysis Facility Reports, 2015-2018.

- From 2015 to 2018, overall, the percentage of adult hemodialysis patients with adequate dialysis (kt/V 1.2 or higher) improved from 93% to 96.4% (Figure 21).
- The 2015 achievable benchmark was 96.5%. At the current rate of increase, overall, the benchmark could be achieved in 1 year.
- The top 10% of states that reached the achievable benchmark are Alaska, Hawaii, Maine, Rhode Island, Utah, and Vermont (more than 5 states reached the benchmark due to ties).

Improving Trend: Antibiotics for Common Cold

Most people around the world will have one or more common cold episodes each year. However, common colds are caused by viruses, which do not respond to antibiotics, and antibiotics can cause side effects, especially diarrhea. Overuse of antibiotics leads to bacteria becoming resistant to antibiotics.⁵¹

Figure 22. Doctor's office and emergency department visits where antibiotics were prescribed for a diagnosis of common cold per 10,000 population, 2010-2011 to 2015-2016



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Ambulatory Medical Care Survey and National Hospital Ambulatory Medical Care Survey, 2010-2011 to 2015-2016.

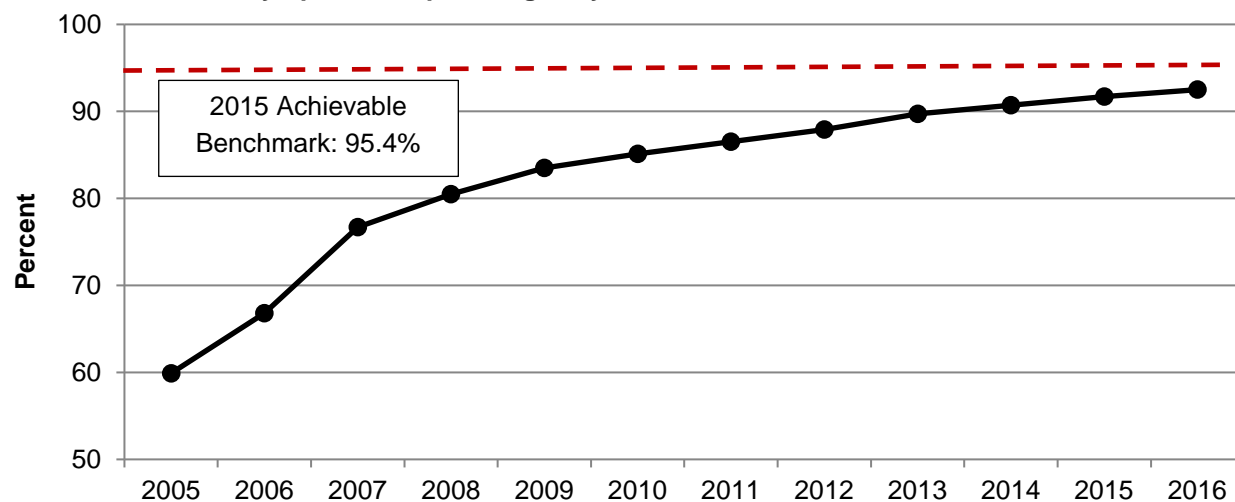
Note: For this measure, lower rates are better.

- From 2010-2011 to 2015-2016, overall, the rate of doctor's office and emergency department visits where antibiotics were prescribed for a diagnosis of common cold per 10,000 population decreased from 108.8 to 42.9 per 10,000 population (Figure 22).

Improving Trend: Colon Cancer Treatment

Surgical treatment is a typical treatment for early stage colon cancers.⁵² Oncology research has shown that the examination and removal of lymph nodes during surgical treatment of colon cancer is linked with better patient outcomes and survival.^{53,54}

Figure 23. Patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined, 2005-2016



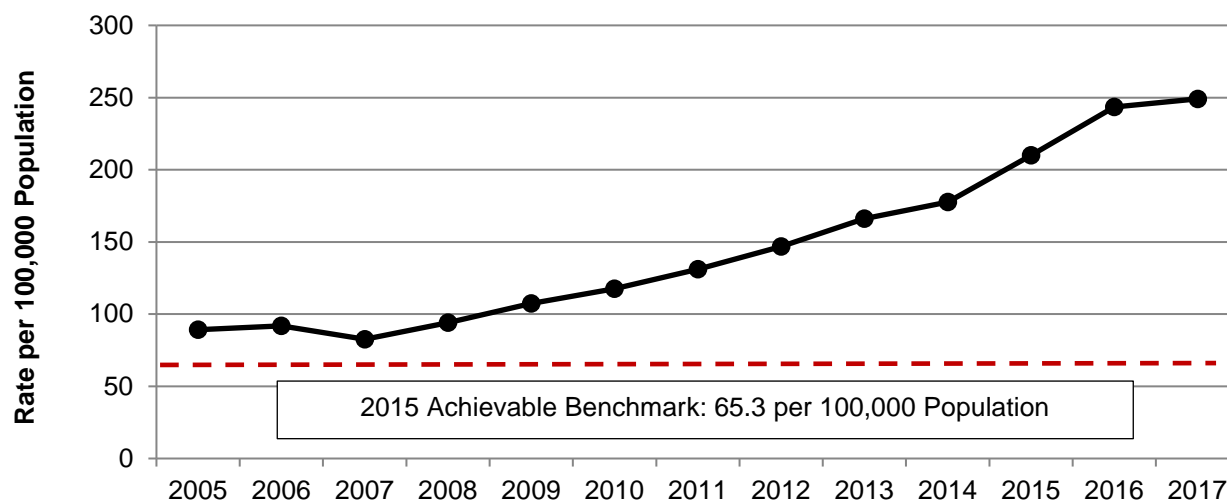
Source: Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base, 2005-2016.

- From 2005 to 2016, overall, the percentage of patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined increased from 59.9% to 92.5% (Figure 23).
- The 2015 achievable benchmark was 95.4%. At the current rate of increase, overall, the benchmark could be achieved in 1 year.
- The top 10% of states that reached the achievable benchmark are District of Columbia, Hawaii, Iowa, Maine, Massachusetts, Rhode Island, Vermont, and Wyoming (more than 5 states reached the benchmark due to ties).

Worsening Trend: Emergency Department Visits Involving Opioids

The U.S. opioid overdose epidemic continues to evolve. In 2016, 66.4% of the 63,632 drug overdose deaths involved an opioid. In 2017, among 70,237 drug overdose deaths, 47,600 (67.8%) involved opioids, with increases across age groups, racial and ethnic groups, county urbanization levels, and multiple states. From 2013 to 2017, synthetic opioids contributed to increases in drug overdose death rates in several states. From 2016 to 2017, synthetic opioid-involved overdose death rates increased 45.2%.⁵⁵

Figure 24. Emergency department visits involving opioid-related diagnoses per 100,000 population, 2005-2017



Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample and Nationwide Emergency Department Sample, 2005-2017.

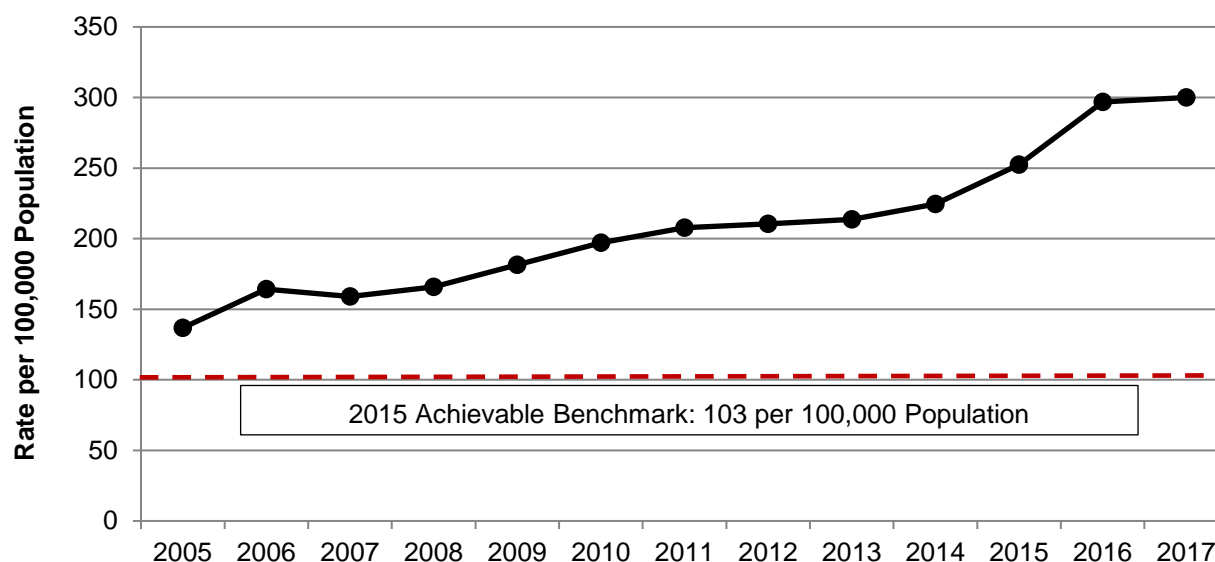
Note: For this measure, lower rates are better.

- From 2005 to 2017, overall, the rate of emergency department visits related to opioid use per 100,000 population increased from 89.1 to 249.1 per 100,000 population (Figure 24).
- The 2015 achievable benchmark was 65.3 per 100,000 population. There is no evidence of progress toward the benchmark.
- The top 4 states that reached the achievable benchmark are Iowa, Kansas, Nebraska, and South Dakota (only 30 states had data, but there were ties, yielding 4 top states).

Worsening Trend: Hospital Stays Involving Opioids

Increased availability and overuse of opioid medications (both prescription and nonprescription drugs) have contributed to adverse outcomes for patients, including increased risk of opioid use disorder, misuse of medication, and overdoses.⁵⁶ The National Survey on Drug Use and Health shows that in 2017, nearly 11.4 million people age 12 and over misused opioids in the past year.⁵⁷ This treatment measure examines inpatient stays associated with an opioid-related diagnoses.

Figure 25. Hospital inpatient stays involving opioid-related diagnoses per 100,000 population, 2005-2017



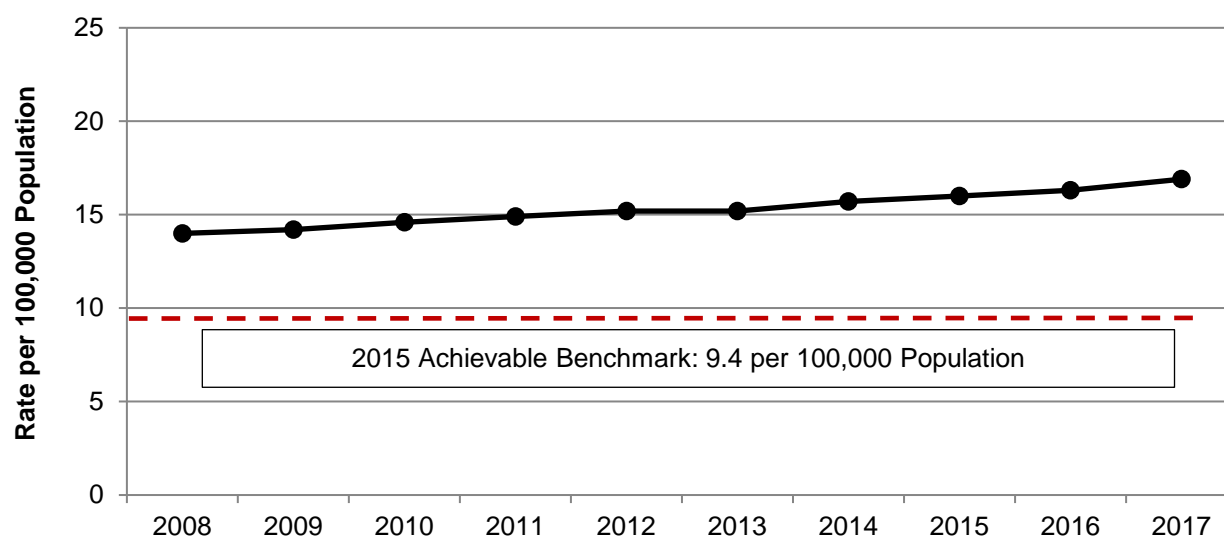
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample and Nationwide Emergency Department Sample, 2005-2017.

Note: For this measure, lower rates are better.

- From 2005 to 2017, overall, the rate of hospital inpatient stays related to opioid use increased from 136.8 to 300.0 per 100,000 population (Figure 25).
- The 2015 achievable benchmark was 103 per 100,000 population. There is no evidence of progress toward the benchmark.
- The top 5 states that reached the achievable benchmark are Georgia, Iowa, Nebraska, Texas, and Wyoming.

Worsening Trend: Suicide Mortality

Many patients who have completed suicide have encountered or sought healthcare treatment for comorbidities such as depression and anxiety within a year of their death. Still, some patients contemplating suicide go undetected by healthcare providers across multiple settings of care. Researchers have demonstrated that suicide ideation and completion is highest among adults age 65 and over, some of whom may receive care in long-term care facilities such as nursing homes.^{58,59}

Figure 26. Suicide deaths among people age 12 and over, per 100,000 population, 2008-2017

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System-Mortality, 2000-2017.

- From 2008 to 2017, overall, the rate of suicide deaths among people age 12 and over increased from 14.0 to 16.9 per 100,000 population (Figure 26). In 2017, this rate represented more than 47,109 deaths.
- The 2015 achievable benchmark was 9.4 per 100,000 population. There is no evidence of progress toward the benchmark.
- The top 5 states that reached the achievable benchmark are District of Columbia, Maryland, Massachusetts, New Jersey, and New York.

Resources

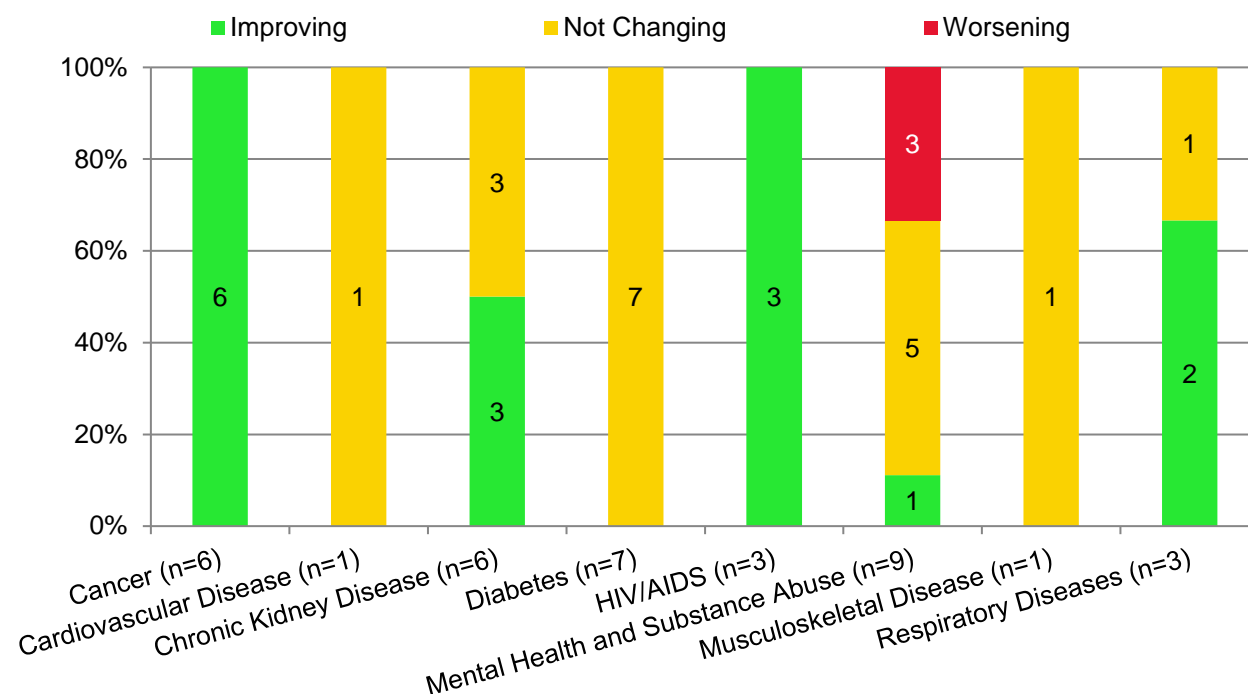
Efforts to promote effective treatment are underway within HHS:

- At the Agency for Healthcare Research and Quality, the agency has published an evidence reviews, a rapid review, several statistical briefs on opioid use. In May 2020, the U.S. Preventive Services Task Force published a recommendation statement on [Illicit Drug Use in Children, Adolescents, and Young Adults: Primary Care-Based Interventions](#).
- AHRQ has also sponsored the development of tools and grant programs, including:
 - [Six Building Blocks: A Team-Based Approach to Improving Opioid Management in Primary Care](#). An AHRQ grantee developed a structured systems-based approach for primary care providers and their staff members to improve management of patients on chronic opioid therapy.

- [The Academy: Integrating Behavioral Health and Primary Care](#). AHRQ has previously sponsored the Academy works to expand the integration of behavioral healthcare and primary care. It also supports those who are implementing medication-assisted treatment (MAT) in primary care settings.
- [Civil Rights and the Opioid Crisis](#), a public education campaign implemented by the HHS Office for Civil Rights (OCR) to improve access to evidence-based opioid use disorder treatment and recovery services, such as MAT. This campaign helps covered entities know their obligations under federal nondiscrimination laws, including laws prohibiting discrimination on the basis of disability or limited English proficiency. The campaign includes a video by OCR Director Roger Severino, fact sheets, digital postcards, and a newsletter.
- The National Institutes of Health published [How To Help Someone Thinking of Suicide](#), a one-page handout available in 10 languages that teaches people how to help someone thinking of suicide. It identifies signs, symptoms, and behaviors of someone who may be thinking of suicide. It also provides a list of actions people can take to assist a person in crisis. Finally, the handout provides the phone number and web link for the Suicide Prevention Lifeline.
- The Centers for Disease Control and Prevention have published [Preventing Suicide: A Technical Package of Policy, Programs, and Practices](#), a select group of strategies based on the best available evidence to help communities and states sharpen their focus on prevention activities with the greatest potential to prevent suicide. These strategies include strengthening economic supports; strengthening access and delivery of suicide care; creating protective environments; promoting connectedness; teaching coping and problem-solving skills; identifying and supporting people at risk; and lessening harms and preventing future risk.
- The Substance Abuse and Mental Health Services Administration (SAMHSA) has several suicide prevention resources, including tools focused on [American Indian and Alaska Native communities](#), [a toolkit for high schools](#), and [videos](#).
- In fiscal year 2020, SAMHSA implemented a grant program called Implement Zero Suicide in Health Systems. The Zero Suicide model is a comprehensive, multisetting approach to suicide prevention in health systems. This program is designed to raise awareness of suicide, establish referral processes, and improve care and outcomes for individuals age 25 years and over who are at risk for suicide. Grant recipients, such as the [Suicide Prevention Resource Center](#), work to implement the Zero Suicide model throughout their health system.

Examining Effective Treatment Measures by Topic Areas

Figure 27. Number and percentage of all effective treatment measures improving, not changing, or worsening from 2000 to 2018, by disease category



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percentage change and to assess statistical significance. Progress on individual measures is determined as follows:

- **Improving** = The average annual percentage change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing** = The average annual percentage change is less than 1% in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening** = The average annual percentage change is 1% or greater in the undesirable direction, and $p < 0.10$.

Core measures listed below are noted as improving (green), not changing (yellow) or worsening (red) over time. For more information on how this analysis was conducted, consult the NHQDR [Introduction and Methods](#). For more details about the measures shown here, please visit the NHQDR website (<https://nhqrnet.ahrq.gov/inhqdr/>).

Table 16. Cancer Measures

Among a total of 6 cancer measures, all measures improved over time. These include measures regarding colorectal, breast, and lung cancer.

Sub-Area	Measure Title (Data Source)
Colorectal Cancer	Patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined (NCDB)
Breast Cancer	Women under age 70 treated for breast cancer with breast-conserving surgery who received radiation therapy to the breast within 1 year of diagnosis (NCDB)
Breast Cancer	Women with clinical Stage I-IIb breast cancer who received axillary node dissection or sentinel lymph node biopsy (SLNB) at the time of surgery (lumpectomy or mastectomy) (NCDB)
Colorectal Cancer	Colorectal cancer deaths per 100,000 population per year (NVSS-M)
Lung Cancer	Lung cancer deaths per 100,000 population per year (NVSS-M)
Breast Cancer	Breast cancer deaths per 100,000 female population per year (NVSS-M)

Table 17. Cardiovascular Disease Measures

The core set of measures includes one measure examining hypertension. It is not changing over time.

Sub-Area	Measure Title (Data Source)
CVD - Prevention of Heart Disease	Adults with hypertension with blood pressure less than 140/90 mm/Hg (NHANES)

Table 18. Chronic Kidney Disease Measures

All 6 chronic kidney measures pertain to the care of end stage renal disease (ESRD). Three measures improved, and 3 did not change over time.

Sub-Area	Measure Title (Data Source)
Chronic Care of ESRD	Adult hemodialysis patients with adequate dialysis - Kt/V 1.2 or higher (UMKECC)
Chronic Care of ESRD	Adult end stage renal disease patients who saw a nephrologist at least 12 months prior to initiation of renal replacement therapy (USRDS)
Chronic Care of ESRD	Adult hemodialysis patients who use arteriovenous fistulas as the primary mode of vascular access (USRDS)

Sub-Area	Measure Title (Data Source)
Chronic Care of ESRD	Dialysis patients who were registered on a waiting list for transplantation (USRDS)
Chronic Care of ESRD	Patients with treated chronic kidney failure who received a transplant within 3 years of date of renal failure (USRDS)
Chronic Care of ESRD	Hemodialysis patients whose hemoglobin level was less than 10 g/dL (UMKECC)

Table 19. Diabetes Measures

Seven measures relate to diabetes care and none were changing over time.

Sub-Area	Measure Title (Data Source)
Diabetes – Management	Adults age 40 and over with diabetes whose condition was diagnosed (NHANES)
Diabetes – Control	Adults age 40 and over with diagnosed diabetes with blood pressure less than 130/80 mm Hg (NHANES)
Diabetes – Hospitalizations	Adjusted incident rates of end stage renal disease due to diabetes per million population (USRDS)
Diabetes – Management	Adults age 40 and over with diagnosed diabetes who received a flu vaccination in the calendar year (MEPS)
Diabetes – Management	Adults age 40 and over with diagnosed diabetes who received a dilated eye examination in the calendar year (MEPS)
Diabetes – Management	Adults age 40 and over with diagnosed diabetes who received at least two hemoglobin A1c measurements in the calendar year (MEPS)
Diabetes – Management	Adults age 40 and over with diagnosed diabetes who had their feet checked for sores or irritation in the calendar year (MEPS)

Table 20. HIV/AIDS Measures

The core set of measures includes 3 measures that examine HIV management, among which one examines HIV infection mortality. All 3 measures were improving over time.

Sub-Area	Measure Title (Data Source)
HIV/AIDS – Management	HIV infection deaths per 100,000 population (NVSS-M)
HIV/AIDS – Management	New HIV cases per 100,000 population age 13 and over (HIV-AIDSSS)
HIV/AIDS – Management	People age 13 and over living with HIV who know their serostatus (HIV-AIDSSS)

Table 21. Mental Health and Substance Use Disorder Measures

The core set of measures includes only one measure improving over time, which examines depression treatment among nursing home residents. Five measures were not changing and 3 were worsening. The worsening measures include opioid-related diagnoses and suicide mortality among people age 12 and over.

Sub-Area	Measure Title (Data Source)
Depression Treatment	Long-stay nursing home residents with depression symptoms (MDS)
Depression Treatment	Children ages 12-17 with a major depressive episode in the last 12 months who received treatment for depression in the last 12 months (NSDUH)
Substance Use Disorder Treatment	People age 12 and over who needed treatment for an alcohol problem who received such treatment at a specialty facility in the last 12 months (NSDUH)
Substance Use Disorder Treatment	People age 12 and over treated for substance abuse who completed treatment course (TEDS)
Depression Treatment	Adults with a major depressive episode in the last 12 months who received treatment for depression in the last 12 months (NSDUH)
Substance Use Disorder Treatment	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 (NSDUH)
Substance Use Disorder Treatment	Emergency department visits involving opioid-related diagnoses per 100,000 population (HCUP, NEDS)
Substance Use Disorder Treatment	Hospital inpatient stays involving opioid-related diagnoses per 100,000 population (HCUP)
Depression Treatment	Suicide deaths among people age 12 and over per 100,000 population (NVSS-M)

Table 22. Musculoskeletal Disease Measures

The core set of measures includes only one measure that examines musculoskeletal disease. This measure was not changing over time.

Sub-Area	Measure Title (Data Source)
Musculoskeletal	Adults with chronic joint symptoms who have ever seen a doctor or other health professional for joint symptoms (NHIS)

Table 23. Respiratory Disease Measures

The core set of measures includes 3 measures pertaining to respiratory disease. Two measures pertaining to respiratory treatment were improving over time. The core set also includes a care coordination measure pertaining to emergency department visits for asthma among children ages 2-19. Under the effective treatment quality domain, one measure pertaining to asthma management was not changing over time.

Sub-Area	Measure Title (Data Source)
Treatment of Respiratory Infections	Doctor's office and emergency department visits where antibiotics were prescribed for a diagnosis of common cold per 10,000 population (NAMCS/NHAMCS)
Treatment of Respiratory Infections	Patients with tuberculosis who completed a curative course of treatment within 1 year of initiation of treatment (NTBSS)
Management of Asthma	People with current asthma who are now taking preventive medicine daily or almost daily (either oral or inhaler) (MEPS)

Trends in Healthy Living

Many illnesses associated with chronic conditions are related to unhealthy behaviors, environmental hazards, and poor social supports. These illnesses can be prevented by increasing access to effective clinical preventive services and promoting community interventions that advance public and population health. Working with communities is critical to ensure that immunizations and early detection and prevention services reach everyone who needs them and to build healthy neighborhoods and support networks.

Promoting healthy lifestyles that prevent disease and disability is better for people and more efficient than treating conditions after organ damage has occurred.

Importance of Healthy Living

Morbidity and Mortality

Healthy living is supported through preventive care strategies that cross all age groups and the care continuum. Among the most impactful preventive strategies include immunization and vaccination for children and prenatal care.

Advances in medical science protect children against more diseases than ever before. Some diseases that once injured or killed thousands of children have been eradicated completely and others are close to eradication, primarily due to safe and effective vaccines. Polio is one example of the great impact vaccines have had in the United States. Polio was once America's most feared disease, causing death and paralysis across the country, but today, thanks to vaccination, there are no reports of polio in the United States.

Effective and continuous prenatal care can also improve the birth and health outcomes for mothers and children. Currently, the NHQDR tracks one preventive health measure related to maternal health (i.e., women who completed a pregnancy in the last 12 months who received early and adequate prenatal care).

Research has shown that most cases of maternal mortality and severe maternal morbidity are preventable, and prevention strategies can directly reduce morbidity and mortality.^{60,61,62} Recognition is growing of the need to develop, monitor, and improve performance on quality measures in obstetrics care, particularly around disparities.⁶³ Addressing disparities in maternal health and birth outcomes is a national priority, covered in [*The Surgeon General's Call to Action To Improve Maternal Health*](#).⁶⁴

Cost

There is a strong body of research that shows the cost effectiveness of immunization; however, there are still opportunities for providers, patients and systems to optimize immunization participation. It is less expensive to prevent a disease using immunization than to treat it. In a 2005 study on the economic impact of routine childhood immunization in the United States, researchers estimated that for every dollar spent, the vaccination program saved more than \$5 in direct costs and approximately \$11 in additional costs to society.⁶⁵

Findings on Healthy Living

The healthy living priority area includes measures of:

- Maternal and Child Health.
- Lifestyle Modification.
- Functional Status Preservation and Rehabilitation.
- Supportive and Palliative Care.
- Clinical Preventive Services.

Data for these measures can be found at <https://nhqrnet.ahrq.gov/inhqdr/data/query>.

Out of 70 Healthy Living measures, 44 focus on Clinical Preventive Services (e.g., immunizations, screenings and counseling).

Almost 60% of Healthy Living measures improved and three worsened over time.

The top healthy living measures that showed improvement over time included two vaccination measures:

- Home health patients who had influenza vaccination during flu season.
- Long-stay nursing home residents with physical restraints.
- Adolescents ages 16-17 who received 1 or more doses of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) since the age of 10 years.

Three healthy living measures worsened over time, including two that examined care for nursing home residents and one on cervical cancer screening for women:

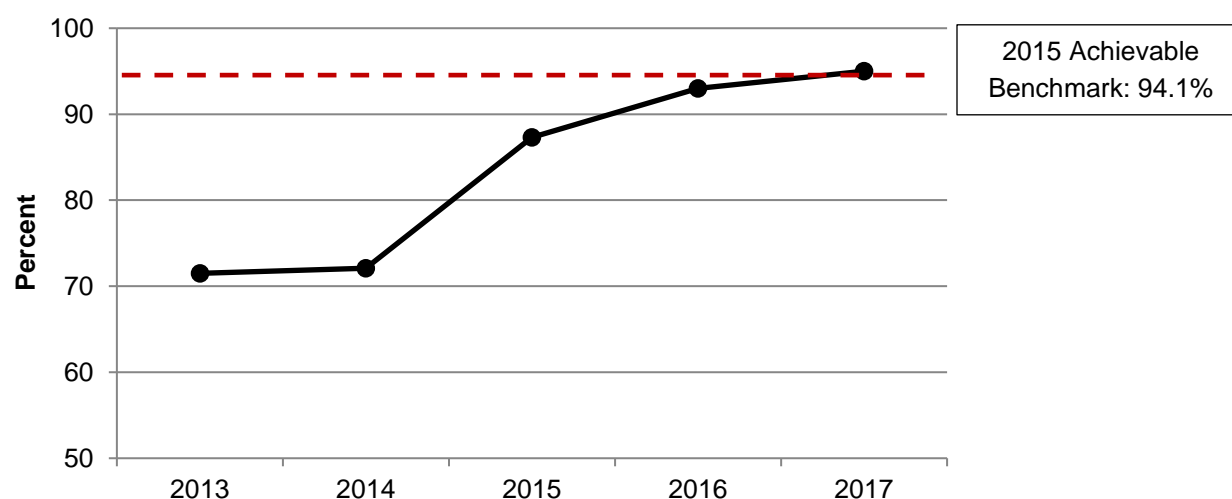
- Long-stay nursing home residents who were assessed for pneumococcal vaccination.
- Low-risk, long-stay nursing home residents with loss of control of bowels or bladder.
- Women ages 21-65 who received a Pap smear in the last 3 years.

These measures are also discussed in the disparities section to show narrowing and widening disparities gaps (see Disparities section, Race, Income).

Improving Trend: Influenza Vaccinations in Home Health Patients

Influenza vaccination is a proven preventative strategy for reducing the incidence of influenza. All people ages 6 months or older are recommended to receive the vaccination and vulnerable populations including home health patients are especially encouraged to do so.⁶⁶

Figure 28. Home health patients who had influenza vaccination during flu season, 2013-2017



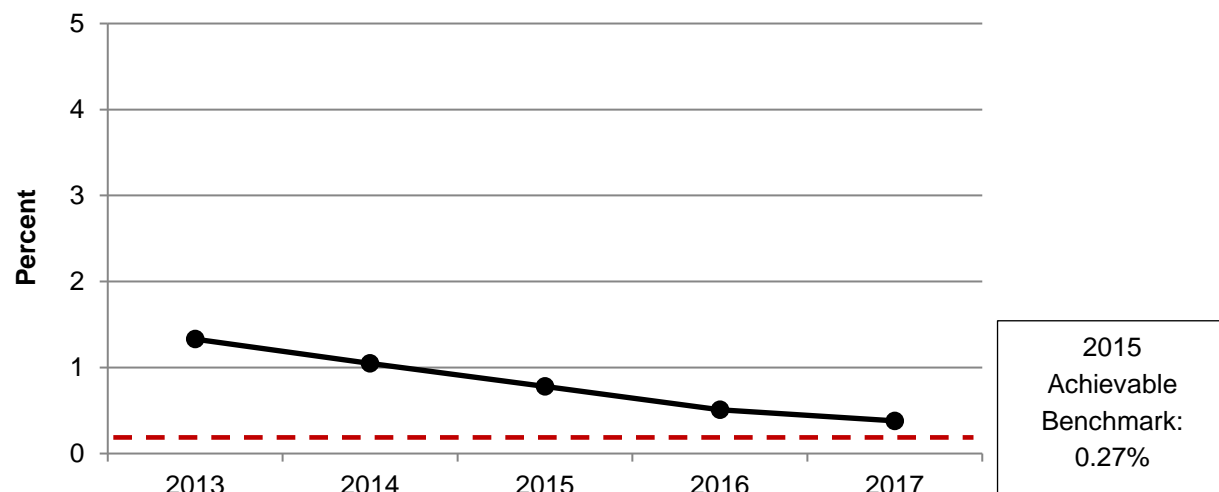
Source: Centers for Medicare & Medicaid Services, Outcome and Assessment Information Set, 2013-2017.

- From 2013 to 2017, overall, the percentage of home health patients who had influenza vaccinations during the flu season increased from 71.5% to 95.0% (Figure 28).
- The 2015 achievable benchmark was 94.1%. The outcome in 2017 was better than the benchmark.
- The top 10% of states that reached the achievable benchmark are Montana, Nebraska, North Dakota, South Dakota, Vermont, and Wisconsin (more than 5 states reached the benchmark due to ties).

Improving Trend: Physical Restraint Use in Nursing Home Residents

Long-stay residents typically enter a nursing facility because they can no longer care for themselves at home. They tend to remain in the facility for several months or years. Most residents want to care for themselves, and the ability to perform daily activities is important to their quality of life. While some functional decline among residents cannot be avoided, high-quality nursing home care should minimize the rate of decline and the number of patients experiencing decline.

Figure 29. Long-stay nursing home residents with physical restraints, 2013-2017



Source: Centers for Medicare & Medicaid Services, Minimum Data Set, 2013-2017.

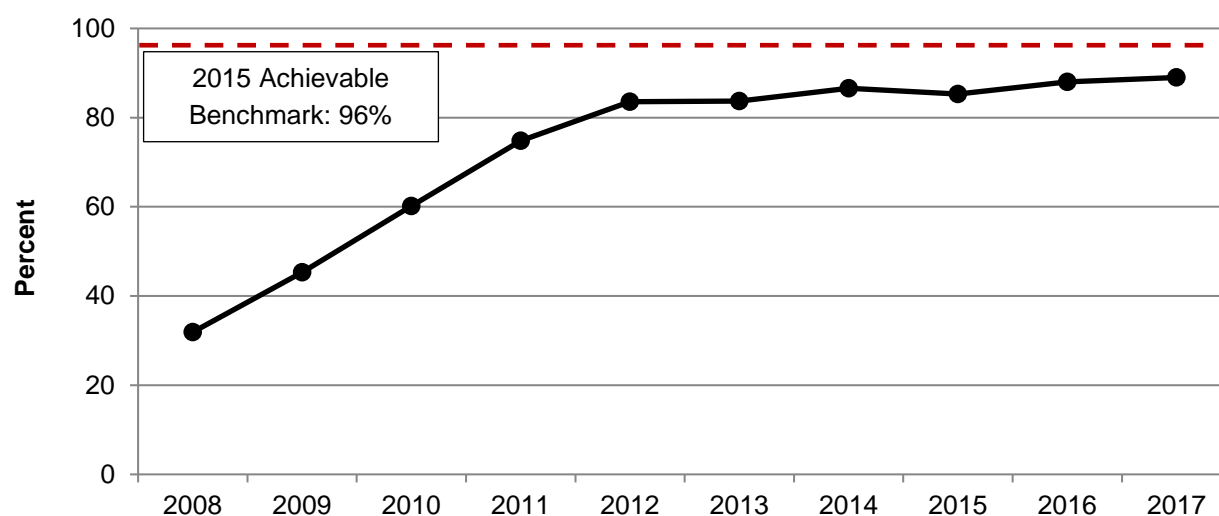
Note: For this measure, lower rates are better.

- From 2013 to 2017, overall, the percentage of long-stay nursing home patients with physical restraints decreased from 1.33% to 0.38% (Figure 29).
- The 2015 achievable benchmark was 0.27%. At the current rate of decrease, the benchmark could be met in about 1 year.
- The top 10% of states (based on 35 states with data) that reached the achievable benchmark are Arizona, Kansas, Minnesota, Nebraska, and New Hampshire (more than 4 states reached the benchmark due to ties).

Improving Trend: Adolescent Tdap Vaccination

CDC's Advisory Committee on Immunization Practices recommends routine vaccination for tetanus, diphtheria, and pertussis. Infants and young children are recommended to receive a 5-dose series of diphtheria and tetanus toxoids and acellular pertussis (DTaP) vaccines, with one adolescent booster dose of Tdap vaccine. One study noted that the cost per quality-adjusted life-year saved from immunization would be approximately \$163,361 (booster at 16 years) and \$204,556 (booster at 21 years).⁶⁷

Figure 30. Adolescents ages 16-17 who received 1 or more doses of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) since the age of 10 years, 2008-2017



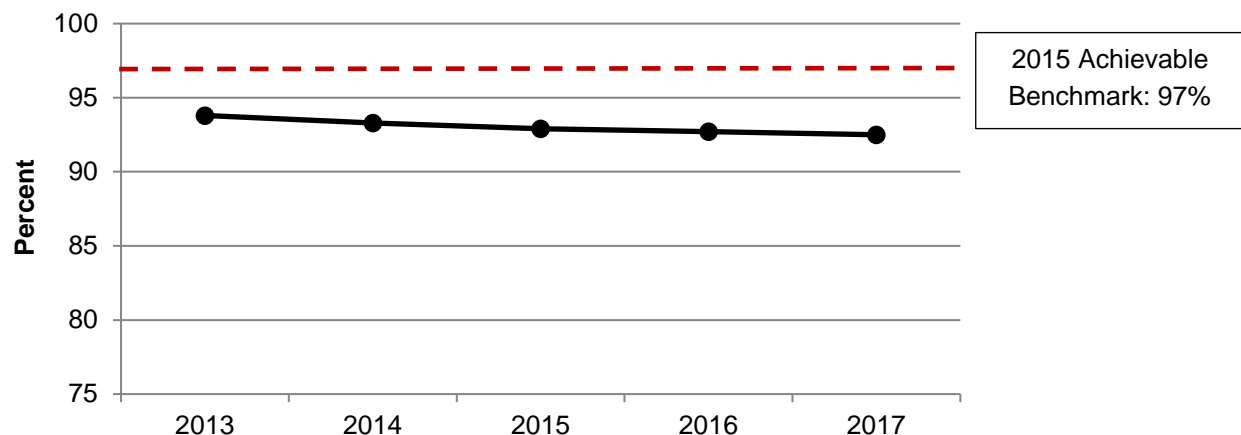
Source: Centers for Disease Control and Prevention, National Center for Immunization and Respiratory Diseases and National Center for Health Statistics, National Immunization Survey – Teen, 2008-2017.

- From 2008 to 2017, overall, the percentage of adolescents ages 16-17 years who received 1 or more doses of Tdap vaccine increased from 31.9% to 89.0% (Figure 30).
- The 2015 achievable benchmark was 96%. At the current rate of increase, overall, the benchmark could be achieved in 1 year.
- The top 5 states that reached the achievable benchmark are Alabama, Georgia, Missouri, Rhode Island, and Vermont.

Worsening Trend: Pneumococcal Vaccinations in Nursing Home Residents

The Advisory Committee on Immunization Practices (ACIP) recommends that all adults over 65 years of age and those with risk factors including chronic disease diagnosis should receive pneumococcal vaccinations.⁶⁸

Figure 31. Long-stay nursing home residents who were assessed for pneumococcal vaccination, 2013-2017



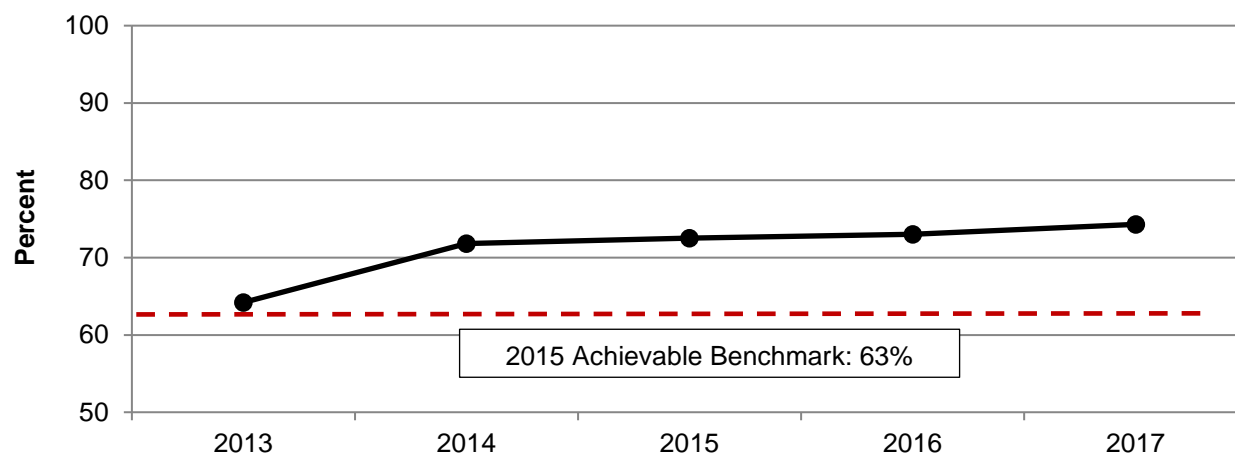
Source: Centers for Medicare & Medicaid Services, Skilled Nursing Facility Quality Reporting Program, Residence Assessment Files, MDS 3.0, 2013-2017.

- From 2013 to 2017, overall, the percentage of long-stay nursing home residents who were assessed for pneumococcal vaccination decreased from 93.8% to 92.5% (Figure 31).
- The 2015 achievable benchmark was 97%. There is no evidence of progress toward the benchmark.
- The top 10% of states that reached the achievable benchmark are Delaware, Mississippi, New Hampshire, North Dakota, Utah, and Wisconsin (more than 5 states reached the benchmark due to ties).

Worsening Trend: Incontinence in Nursing Home Residents

Urinary and fecal incontinence affect 50% or more of nursing home residents. This condition is exacerbated by residents facing increased prevalence of dementia and inability to care for themselves independently.⁶⁹ Research has shown that incontinence can be cured or successfully managed. However, some caregivers lack sufficient knowledge to intervene appropriately.⁷⁰

Figure 32. Low-risk, long-stay nursing home residents with loss of control of bowels or bladder, 2013-2017

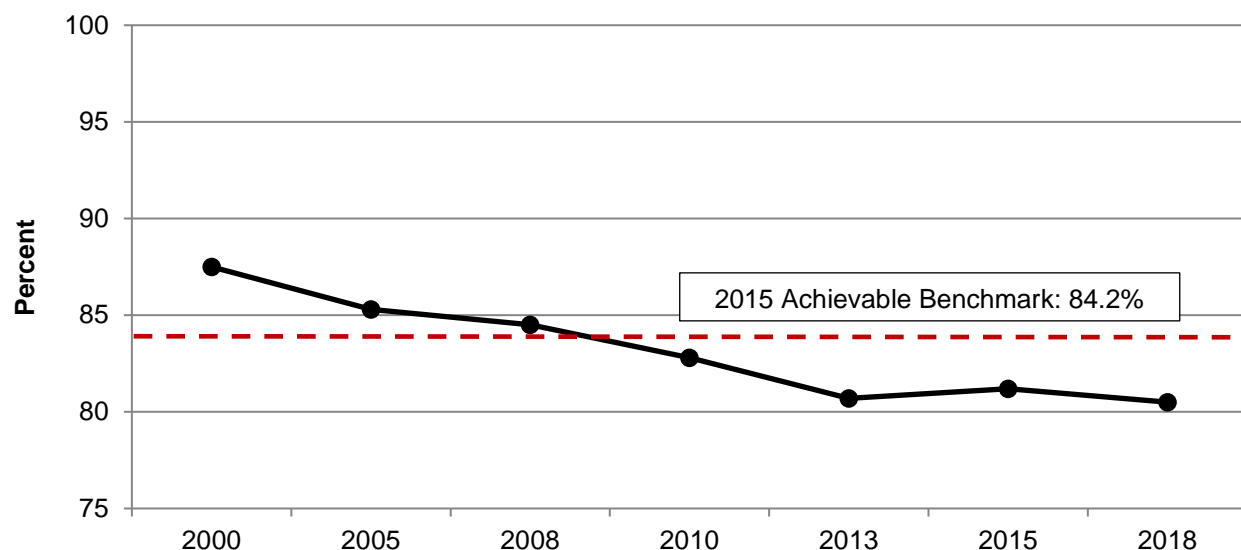


Source: Centers for Medicare & Medicaid Services, Skilled Nursing Facility Quality Reporting Program, Residence Assessment Files, MDS 3.0, 2013-2017.

- From 2013 to 2017, overall, the percentage of low-risk, long-stay nursing home residents with loss of control of bowels or bladders increased from 64.2% to 74.3% (Figure 32).
- The 2015 achievable benchmark was 63%. There is no evidence of progress toward the benchmark.
- The top 10% of states (based on 34 states) that reached the achievable benchmark are Missouri, Nebraska, and New Jersey.

Worsening Trend: Receipt of Pap Smear

The U.S. Preventive Services Task Force recommends cervical cancer screening as part of routine health maintenance for women ages 21 through 65. Cervical cancer incidence and mortality rates have declined since the introduction of the Pap smear in the mid-20th century, and rates continue to decline to this day; however, the overall rate of women receiving preventive care is declining.⁷¹

Figure 33. Women ages 21-65 who received a Pap smear in the last 3 years, 2000-2018

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2000-2018.

Note: The NHIS cancer supplement is not administered annually. U.S. Preventive Services Task Force guidelines for cervical cancer screening changed in 2012 and 2018 to include additional screening options (e.g., HPV testing). Thus, these data may not reflect the full extent of cervical cancer screening. It is also possible that decreases in receipt of Pap smears were related to receipt of other forms of testing. The 2018 U.S. Preventive Services Task Force guidelines recommend screening for cervical cancer with a Pap smear every 3 years in women ages 21-29 years. For women ages 30-65 years, the recommendations are screening every 3 years with a Pap smear alone, every 5 years with HPV testing alone, or every 5 years with HPV testing in combination with a Pap smear.

- From 2000 to 2018, overall, the percentage of women ages 21-65 who received a Pap smear in the last 3 years decreased from 87.5% to 80.5%% (Figure 33).
- The 2015 achievable benchmark was 84.2%. There is no evidence of progress toward the benchmark.
- The top 10% of states (based on 43 states) that reached the achievable benchmark are District of Columbia, Illinois, Massachusetts, and North Carolina.

Resources

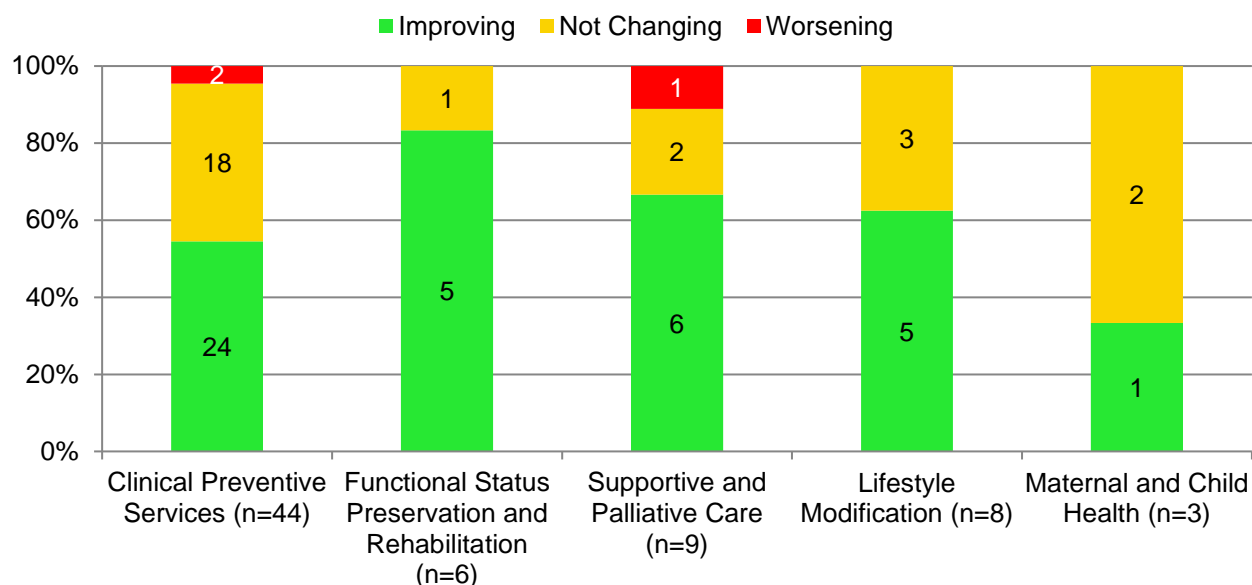
Efforts to promote healthy living are underway within HHS. For example:

- AHRQ sponsors the [U.S. Preventive Services Task Force](#), a group of independent volunteer clinicians who review evidence-based clinical guidelines and offer clinical recommendations to the provider community. Their recommendations include preventive healthcare strategies, such as [cervical cancer screening](#).
- The CAHPS Ambulatory Care Improvement Guide includes Strategy 6R, [Reminder Systems for Immunizations and Preventive Services](#) directed to patients and to clinicians.

Summarizing Healthy Living Measures by Topic Areas

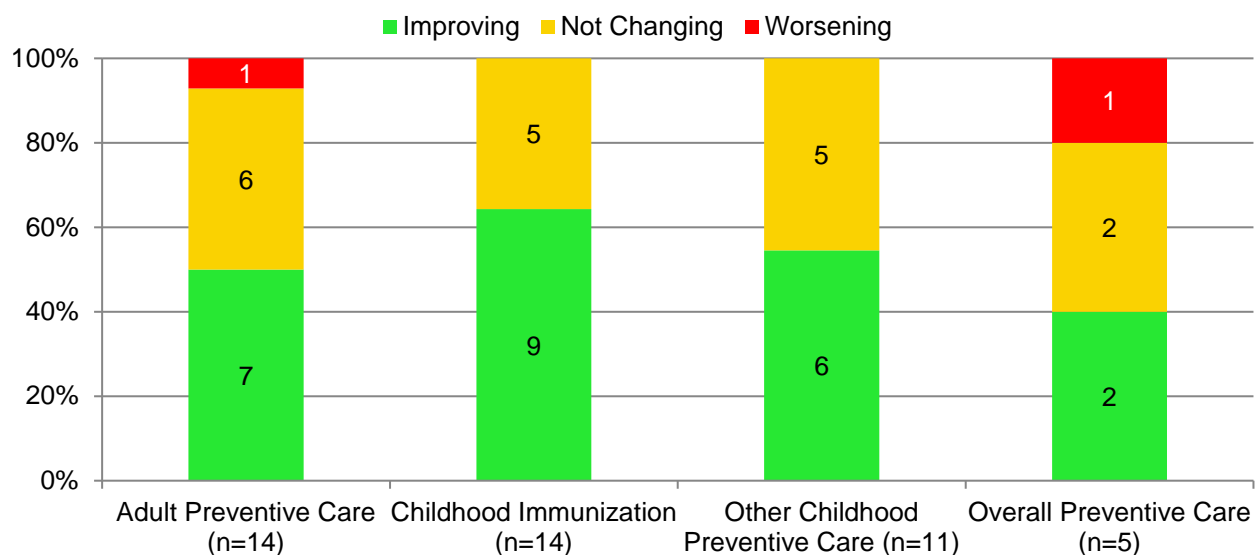
The core healthy living measure trends in the 2019 NHQDR are summarized in Figure 34 by topic area. The topic areas are clinical preventive services, functional status preservation and rehabilitation, supportive and palliative care, lifestyle modification, and maternal and child health.

Figure 34. Number and percentage of all healthy living measures improving, not changing, or worsening from 2000 to 2018, by topic areas



The Clinical Preventive Services measures (n=44) in the Healthy Living section are further broken out by sub-areas due to the volume of measures in Figure 34. These sub-areas include adult preventive care, childhood immunization, other childhood preventive care, and overall preventive care.

Figure 35. Number and percentage of all clinical preventive services measures improving, not changing, or worsening from 2000 to 2018, by sub-areas



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percentage change and to assess statistical significance. Progress on individual measures is determined as follows:

- **Improving** = The average annual percentage change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing** = The average annual percentage change is less than 1% in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening** = The average annual percentage change is 1% or greater in the undesirable direction, and $p < 0.10$.

Core measures listed below are noted as improving (green), not changing (yellow), or worsening (red) over time. For more information on how this analysis was conducted, consult the NHQDR [Introduction and Methods](#). For more details about the measures shown here, visit the NHQDR website (<https://nhqrnet.ahrq.gov/inhqdr/>).

The measures represented in Figures 34 and 35 are represented in tables 24-31 below. For more information about the average annual percentage change and the statistical significance for these measures, visit {insert link here}.

Table 24. Clinical Preventive Measures: Adult Preventive Care

The core set of measures includes 7 measures that were improving. Improving measures included 1 measure examining adult cholesterol, 2 cancer screening measures, and 4 measures pertaining to influenza or pneumonia vaccination. Six measures were not changing over time and one measure examining cervical cancer screening worsened over time.

Sub-Area	Measure Title (Data Source)
Adult Cholesterol	Adults who received a blood cholesterol measurement in the last 5 years (NHIS)
Colorectal Cancer Diagnosis	Colorectal cancer diagnosed at advanced stage (tumors diagnosed at regional or distant stage) per 100,000 population age 50 and over (NPCR-USCS)
Adult Influenza Vaccination	Adults age 65 and over who received an influenza vaccination in the last flu season (NHIS)
Adult Pneumonia Vaccination	Adults age 65 and over who ever received pneumococcal vaccination (NHIS)
Adult Influenza Vaccination	Adults ages 18 and over who received influenza vaccination in the last flu season (NHIS)
Cervical Cancer Diagnosis	Cervical cancer diagnosed at advanced stage (all invasive tumors) per 100,000 women age 20 and over (NPSC-USCS)
Adult Influenza Vaccination	Adults ages 18-64 at high risk (e.g., COPD) who received an influenza vaccination in the last flu season (NHIS)
Adult Blood Pressure	Adults who received a blood pressure measurement in the last 2 years and can state whether their blood pressure was normal or high (NHIS)
Adult Pneumonia Vaccination	Adults ages 18-64 at high risk (e.g., COPD) who ever received pneumococcal vaccination (NHIS)
Breast Cancer Diagnosis	Breast cancer diagnosed at advanced stage (regional, distant stage, or local stage with tumor greater than 2 cm) per 100,000 women age 40 and over (NPCR-USCS)
Adult Dental Visit	Adults with a dental visit in the calendar year (MEPS)
Adult Preventive Dental Service	Adults who received a preventive dental service in the calendar year (MEPS)
Breast Cancer Screening	Women ages 50-74 who received a mammogram in the last 2 years (NHIS)
Cervical Cancer Screening	Women ages 21-65 who received a Pap smear in the last 3 years (NHIS)

Table 25. Clinical Preventive Measures: Childhood Immunization

The core set of childhood immunization measures includes 9 measures that were improving and 5 measures that were not changing over time. These measures pertain to vaccines for tetanus-diphtheria-acellular pertussis (Tdap), meningitis, human papillomavirus (HPV), varicella, influenza, polio, diphtheria-tetanus-pertussis (DTP), hepatitis B, and measles-mumps-rubella (MMR).

Sub-Area	Measure Title (Data Source)
Adolescent – Tdap	Adolescents ages 16-17 who received 1 or more doses of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis since the age of 10 years (NIS-TEEN)
Adolescent – Tdap	Adolescents ages 13-15 who received 1 or more doses of tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis since the age of 10 years (NIS-TEEN)
Adolescent – Meningitis	Adolescents ages 16-17 who received 1 or more doses of meningococcal conjugate vaccine (NIS-TEEN)
Adolescent – HPV	Adolescent males ages 13-15 who received 3 or more doses of human papillomavirus vaccine (NIS-TEEN)
Adolescent – HPV	Adolescent females ages 16-17 who received 3 or more doses of human papillomavirus vaccine (NIS-TEEN)
Pediatric – Varicella	Children ages 19-35 months who received 1 or more doses of varicella vaccine (NIS)
Adolescent – HPV	Adolescent females ages 13-15 who received 3 or more doses of human papillomavirus vaccine (NIS-TEEN)
Pediatric – Influenza	Children ages 6 months to 17 years who received influenza vaccination in the last flu season (NHIS)
Pediatric – Polio	Children ages 19-35 months who received 3 or more doses of polio vaccine (NIS)
Adolescent – HPV	Adolescent males ages 16-17 who received 3 or more doses of human papillomavirus vaccine (NIS-TEEN)
Pediatric – DTP	Children ages 19-35 months who received 4 or more doses of diphtheria-tetanus-pertussis vaccine (NIS)
Pediatric – Hepatitis B	Children ages 19-35 months who received 3 or more doses of hepatitis B vaccine (NIS)
Pediatric – MMR	Children ages 19-35 months who received 1 or more doses of measles-mumps-rubella vaccine (NIS)
Adolescent – Meningitis	Adolescents ages 13-15 who received 1 or more doses of meningococcal conjugate vaccine (NIS-TEEN)

Table 26. Clinical Preventive Measures: Other Childhood Preventive Care

Six improving measures pertain to multiple sub-areas, including height/weight measurement, wellness visits, vision screening, and counseling about travel safety. Five measures were not changing over time, including dental care, counseling about secondhand smoke, and counseling for travel safety.

Sub-Area	Measure Title (Data Source)
Pediatric Height and Weight	Children who had their height and weight measured by a health provider within the past 2 years (MEPS)
Pediatric Wellness Visit	Children ages 0-17 with a wellness checkup in the past 12 months (NHIS)
Pediatric Vision Screening	Children ages 3-5 who ever had their vision checked by a health provider (MEPS)
Counseling – Travel Safety	Children 41-80 lb for whom a health provider gave advice within the past 2 years about using a booster seat when riding in the car (MEPS)
Counseling – Travel Safety	Children 0-40 lb for whom a health provider gave advice within the past 2 years about using a child safety seat while riding in the car (MEPS)
Counseling – Travel Safety	Children over 80 lb for whom a health provider gave advice within the past 2 years about using lap or shoulder belts when riding in a car (MEPS)
Pediatric Dental Caries	Children ages 5-17 with untreated dental caries (NHANES)
Counseling – Secondhand Smoke	Children for whom a health provider gave advice within the past 2 years about how smoking in the house can be bad for a child (MEPS)
Counseling – Travel Safety	Children ages 2-17 for whom a health provider gave advice within the past 2 years about using a helmet when riding a bicycle or motorcycle (MEPS)
Pediatric Dental Visit	Children ages 2-17 who had a dental visit in the calendar year (MEPS)
Pediatric Preventive Dental Service	Children ages 2-17 who received a preventive dental service in the calendar year (MEPS)

Table 27. Clinical Preventive Measures: Overall Preventive Care

The core set of measures includes 2 measures improving over time that look at influenza vaccination in home health care and nursing home care. Two nursing home measures did not change over time and one measure examining pneumococcal vaccination in long-stay nursing home residents worsened.

Sub-Area	Measure Title (Data Source)
Home Health	Home health patients who had influenza vaccination during flu season (OASIS)
Nursing Home	Long-stay nursing home patients who were assessed and appropriately given the seasonal influenza vaccine (MDS)
Nursing Home	Short-stay nursing home patients who had flu vaccination appropriately given (MDS)
Nursing Home	Short-stay nursing home residents who were assessed for pneumococcal vaccination (MDS)
Nursing Home	Long-stay nursing home residents who were assessed for pneumococcal vaccination (MDS)

Table 28. Functional Status Preservation and Rehabilitation Measures

The core set of measures includes four home health measures that were improving over time. One nursing home measure also improved and one measure was not changing over time.

Sub-Area	Measure Title (Data Source)
Home Health	Home health care patients whose ability to get in and out of bed improved (OASIS)
Home Health	Home health care patients whose ability to walk or move around improved (OASIS)
Home Health	Home health care patients whose bathing improved (OASIS)
Home Health	Home health care patients who had improvement in toileting (OASIS)
Nursing Home	Long-stay nursing home residents whose need for help with daily activities increased (MDS)
Nursing Home	Long-stay nursing home residents whose ability to move independently worsened (MDS)

Table 29. Supportive and Palliative Care Measures

Six measures pertaining to nursing home care and home health care improved over time. Two measures, one examining weight loss in nursing home residents and one related to home health care, did not change over time. One nursing home measure examining bowel and bladder control among residents worsened over time.

Sub-Area	Measure Title (Data Source)
Nursing Home	Long-stay nursing home residents with physical restraints (MDS)
Home Health	Home health care patients whose shortness of breath decreased (OASIS)
Nursing Home	Short-stay nursing home residents with moderate to severe pain (MDS)
Home Health	Home health care patients whose pain when moving around decreased (OASIS)
Nursing Home	Long-stay nursing home residents with moderate to severe pain (MDS)
Home Health	Home health patients who had improvement in upper body dressing (OASIS)
Nursing Home	Long-stay nursing home residents with too much weight loss (MDS)
Home Health	Home health care patients who stayed at home after an episode of home health care (OASIS)
Nursing Home	Low-risk, long-stay nursing home residents with loss of control of bowels or bladder

Table 30. Lifestyle Modification Measures

Five core measures improved over time. These measures examine related topics, including diet, obesity, smoking in adults, and exercise or fitness. Three measures were not changing over time and include measures examining pediatric and adult obesity.

Sub-Area	Measure Title (Data Source)
Pediatric Diet and Obesity	Children ages 2-17 for whom a health provider gave advice within the past 2 years about healthy eating (MEPS)
Smoking in Adults	Adult current smokers who had a doctor's office or clinic visit in the last 12 months who received advice from their providers to quit smoking (MEPS)
Pediatric Exercise and Fitness	Children ages 2-17 for whom a health provider gave advice within the past 2 years about the amount and kind of exercise, sports, or physically active hobbies they should have (MEPS)

Sub-Area	Measure Title (Data Source)
Adult Diet and Obesity	Adults with obesity age 20 and over who had been told by a doctor or health professional that they were overweight (NHANES)
Adult Exercise and Fitness	Adults with obesity who ever received advice from a health professional to exercise more (MEPS)
Pediatric Weight	Children with obesity 2-19 years of age who had been told by a doctor or health professional that they were overweight (NHANES)
Adult Diet and Obesity	Adults with obesity who ever received advice from a health professional about eating fewer high-fat or high-cholesterol foods (MEPS)
Pediatric Diet and Obesity	Children ages 2-19 with obesity (NHANES)

Table 31. Maternal and Child Health Measures

The core set of measures includes only one measure that examines breastfeeding and this measure improved over time. Two measures examined infant mortality and low birth weight. These measures were not changing over time.

Sub-Area	Measure Title (Data Source)
Breastfeeding	Infants born in the calendar year who were breastfed exclusively through 3 months (NIS)
Infant Mortality	Infant mortality per 1,000 live births, birth weight 2,500 grams or more (NVSS-L)
Infant Birth Weight	Live-born infants with low birth weight (less than 2,500 g) (NVSS-L)

DISPARITIES IN HEALTHCARE

Healthcare delivery is not experienced equitably by all populations. A healthcare disparity is a difference between population groups in the way they access, experience, and receive healthcare. Factors that influence healthcare disparities include social, economic, environmental, and other disadvantages,^{1,2} some of which are explored in this report.





Unfortunately, Americans too often do not receive care they need, or they receive care that causes harm. Care can be delivered too late or without full consideration of a patient's preferences and values. Many times, our healthcare system distributes services inefficiently and unevenly across populations. Some Americans receive worse care than others. These disparities may occur for a variety of reasons, including differences in access to care, social determinants, provider biases, poor provider-patient communication, and poor health literacy.

Research Framework for Health Disparities

The National Institutes of Health's (NIH) National Institute on Minority Health and Health Disparities (NIMHD)-developed Research Framework (Exhibit 1) is based on an evolving conceptualization of factors relevant to the understanding and promotion of minority health and to the understanding and reduction of health disparities. The framework serves as a vehicle for encouraging NIH-supported research that addresses the complex and multifaceted nature of minority health and health disparities. This research needs to span different domains of influence (Biological, Behavioral, Physical/Built Environment, Sociocultural Environment, Healthcare System) and different levels of influence (Individual, Interpersonal, Community, Societal) within those domains.

The framework also provides a classification structure that facilitates analysis of the NIMHD of NIH minority health and health disparities research portfolios to assess progress, gaps, and opportunities. Examples of factors are provided within each cell of the framework (e.g., Family Microbiome within the Interpersonal-Biological cell). These factors are not intended to be exhaustive. Health disparity populations, as well as other features of this framework, may be adjusted over time.

Exhibit 1. NIMHD Research Framework

		Levels of Influence*			
		Individual	Interpersonal	Community	Societal
Domains of Influence (Over the Lifecourse)	Biological	Biological Vulnerability and Mechanisms	Caregiver–Child Interaction Family Microbiome	Community Illness Exposure Herd Immunity	Sanitation Immunization Pathogen Exposure
	Behavioral	Health Behaviors Coping Strategies	Family Functioning School/Work Functioning	Community Functioning	Policies and Laws
	Physical/Built Environment	Personal Environment	Household Environment School/Work Environment	Community Environment Community Resources	Societal Structure
	Sociocultural Environment	Sociodemographics Limited English Cultural Identity Response to Discrimination	Social Networks Family/Peer Norms Interpersonal Discrimination	Community Norms Local Structural Discrimination	Social Norms Societal Structural Discrimination
	Health Care System	Insurance Coverage Health Literacy Treatment Preferences	Patient–Clinician Relationship Medical Decision-Making	Availability of Services Safety Net Services	Quality of Care Health Care Policies
Health Outcomes		 Individual Health	 Family/ Organizational Health	 Community Health	 Population Health

* Health Disparity Populations: Race/ethnicity, low socioeconomic status, rural, sexual/gender minority. Other Fundamental Characteristics: Sex/gender, disability, geographic region.

Source: National Institute on Minority Health and Health Disparities, 2018.

Role of Research Framework in the NHQDR

The NHQDR reports on progress and opportunities for improving healthcare quality and reducing healthcare disparities. The NIMHD Minority Health and Health Disparities Research Framework highlights factors ranging from individual biology and behavior to social structure that affect disparities. In order to successfully reduce disparities, all these factors have to be addressed.

All Americans should have equitable access to high-quality care. Instead, racial and ethnic minorities and poor people often face more barriers to care and receive poorer quality of care when they can get it.³ In this report, we analyze disparities by breaking down measures by disparities groups and by settings of care.

An increasing number of healthcare organizations and payers are experimenting with strategies to identify needs and connect patients to resources that address identified needs with the goal of improving health outcomes, reducing avoidable utilization of costly health services, and improving health equity.⁴

Inequitable health outcomes result from inequities in the distribution of or access to resources that promote good health outcomes; differences refer to outcomes that are the result of biological risk or other factors that are not a matter of policy or discrimination in access. A difference may become a disparity when some subgroups and not others are given access to resources to manage their differential risk from biology or other factors and the groups without access have poorer outcomes. Thus, differences and disparities may have different determinants requiring different forms of intervention.⁵

The Disparities in Healthcare section of the 2019 NHQDR examines the best and worst performing quality measures among the measures used in the report. These quality measures are analyzed in this section of the report by race and ethnicity, income, insurance status, and residence location. While these categories are broad, each section begins with key definitions to orient readers and includes analyses showing quality measure performance in the latest data year and analyses showing whether disparities were widening or narrowing over time.

To learn more about the measures included in this section of the report, go to the NHQDR Data Query Tool to access the data directly (<https://nhqrnet.ahrq.gov/inhqdr/data/query>). The tool also allows readers to stratify NHQDR data by other variables such as education, sex, and age where available.

Racial and Ethnic Disparities

Researchers, patients, providers, and policymakers have worked to identify, understand, and eliminate the disparities experienced by different racial and ethnic groups across the healthcare system. In 1985, the Department of Health and Human Services published the Report of the Secretary's Task Force on Black and Minority Health (Heckler Report), which marked the first comprehensive study of racial and minority health by the U.S. government.⁶ Since then, the Department, along with other stakeholders, has continued this work, including throughout the NHQDR. The growing evidence base shows that patients of different racial and ethnic groups experience quality of care inequitably and disparately.^{7,8}

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 (AI/AN).** 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” 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/Pacific Islander (NHPI).** 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.

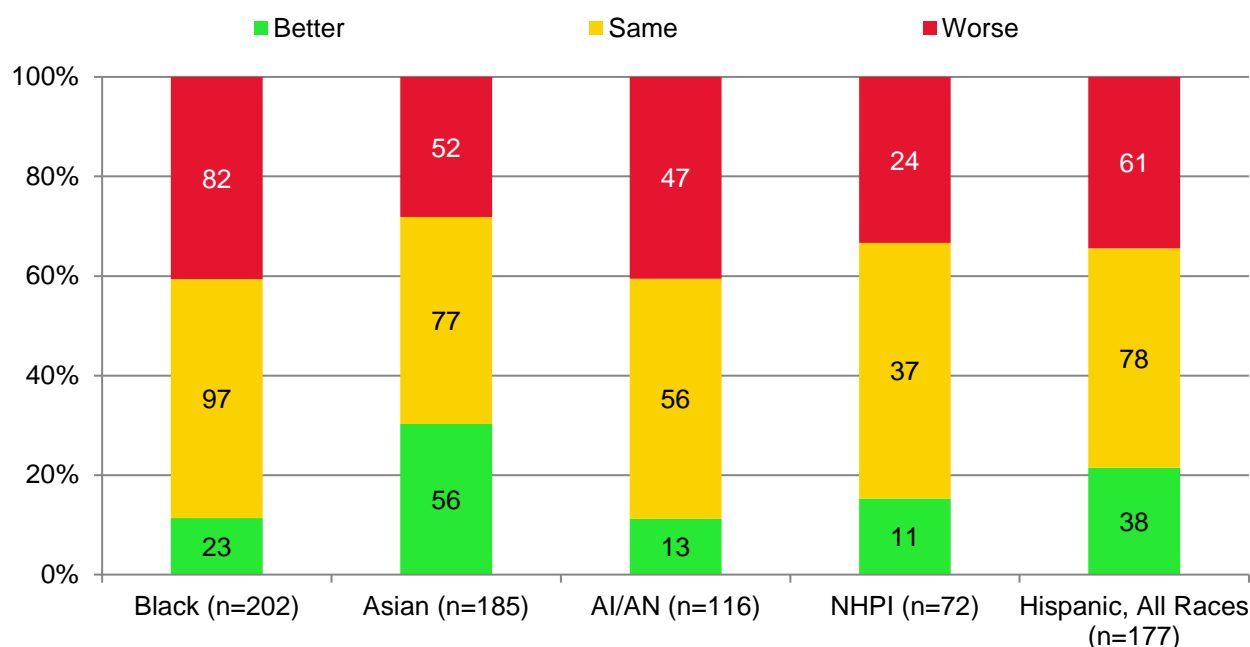
This section presents three types of findings related to disparities for each population:

1. Largest disparities for a single data year, focusing on the most recent data year.
2. Trends in quality of care (number of measures improving, not changing, and worsening) for the population group.
3. Comparison with the reference group, focusing on the change in the gap between the two groups (gap is narrowing, widening, and not changing).

For more details about the measures shown below, visit the NHQDR website at <https://nhqrnet.ahrq.gov/inhqdr/>.

Overview of Racial and Ethnic Disparities

Figure 1. 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) for the most recent data year, 2014, 2016, 2017, or 2018

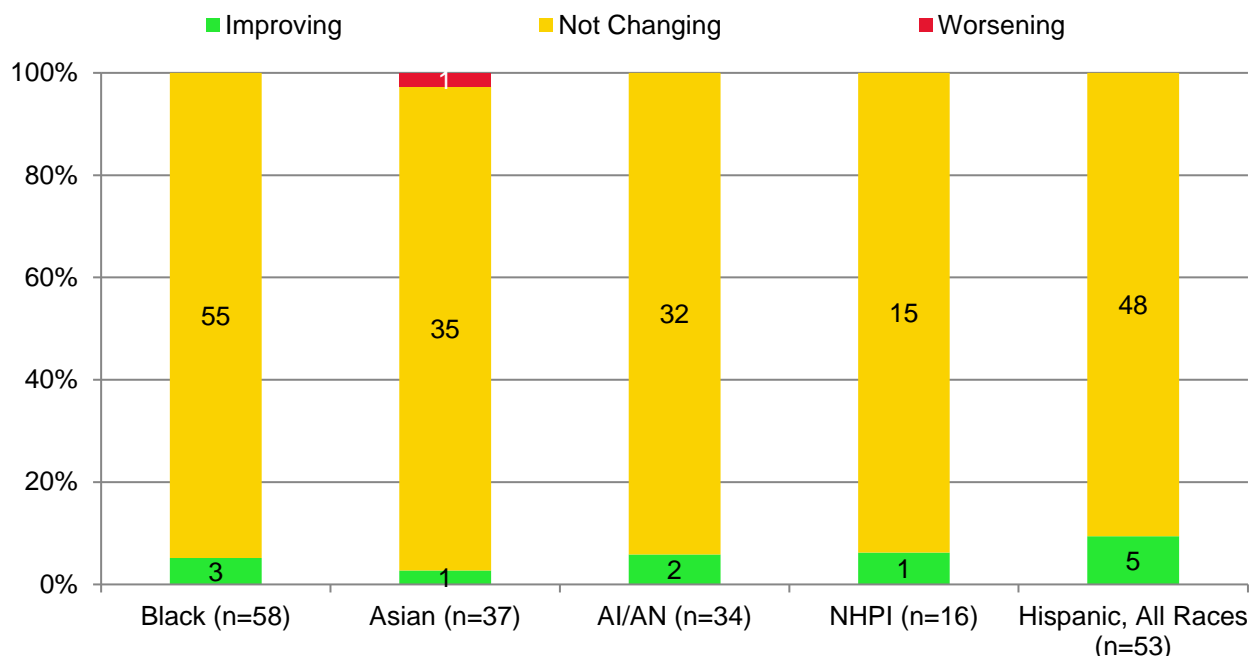


Key: n = number of measures; AI/AN = American Indian or Alaska Native; NHPI = Native Hawaiian/Pacific Islander.

Note: The difference between two groups is meaningful only if the absolute difference between the two groups is statistically significant with a p-value <0.05 on a two-tailed test **and** the relative difference between the two groups is at least 10%. The most recent data years are used for this analysis. Different data sources have different data years for most recent data year. For example, the most recent data year from the National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Agency for Healthcare Research and Quality Healthcare Cost and Utilization Project (AHRQ HCUP) is 2017.

- Figure 1 features quality measures that show whether Black, Asian, American Indian and Alaska Native (AI/AN), Native Hawaiian/Pacific Islander (NHPI), and Hispanic populations were performing better, same, or worse than White populations in the latest data year.
- Blacks and AI/ANs received worse care than Whites for about 40% of quality measures.
- Hispanics received worse care than non-Hispanic Whites for about 35% of quality measures.
- Asians and NHPIs received worse care than Whites for about 30% of quality measures but Asians also received better care for about 30% of quality measures.

Figure 2. Number and percentage of quality measures with disparity at baseline for which disparities related to race and ethnicity were improving, not changing, or worsening over time, 2000 through 2014, 2015, 2016, 2017, or 2018



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

Note: Different data sources have different data years. For example, the most recent data year available for trending from the National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Centers for Medicare & Medicaid Services, Hospital Consumer Assessment of Healthcare Providers and Systems (CMS HCAHPS) is 2018.

Quality measures with disparities at baseline were analyzed to see if disparities related to race and ethnicity were narrowing (improving), widening (worsening), or not changingⁱ:

- In this year's analyses, for all racial and ethnic groups, over 90% of measures showed no change in disparities (Figure 2).
- Five measures showed improvement in disparities between Hispanics and non-Hispanic Whites.
- Three measures showed improvement in disparities between Blacks and Whites, and two measures showed improvement for AI/ANs.
- One measure for Asians and NHPIs showed improvement in disparities.

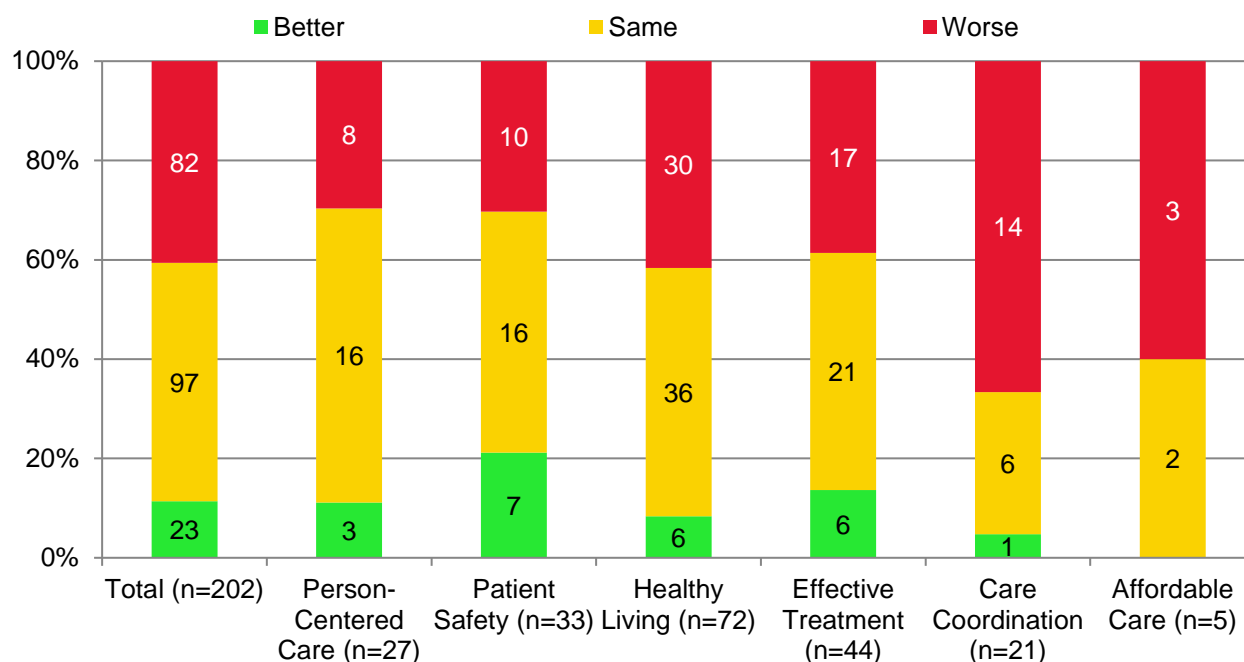
ⁱ Due to a change in the Healthcare Cost and Utilization Project (HCUP) data, the same measures reported in past reports are not represented in this report. HCUP converted all measures from International Classification of Diseases, Ninth Revision (ICD-9) to Tenth Revision (ICD-10) codes, thus changing the outcomes of these measures. Therefore, trend data are not available at this time.

- One measure for Asians showed a worsening of disparities, home health care patients whose management of oral medications improved. There were no worsening disparities over time observed for Blacks, AI/ANs, and NHPs in this year's analysis.
- Fewer quality measures are available for select subpopulations overall. The percentage of quality measures with disparities at baseline that improved over time was 9% for Hispanics, 6% for AI/ANs, and NHPs, 5% for Blacks, and 3% for Asians.

Disparities for Blacks

In 2017, non-Hispanic Black children ages 2-17 were more than five times as likely as non-Hispanic Whites to be admitted to the hospital for asthma.

Figure 3. Number and percentage of quality measures for which Blacks experienced better, same, or worse quality of care compared with reference group (White) for the most recent data year, 2014, 2015, 2016, 2017, or 2018



Key: n = number of measures.

Note: The difference between two groups is meaningful only if the absolute difference between the two groups is statistically significant with a p-value <0.05 on a two-tailed test **and** the relative difference between the two groups is at least 10%. The most recent data years are used for this analysis. Different data sources have different data years for most recent data year. For example, the most recent data year from the National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Agency for Healthcare Research and Quality Healthcare Cost and Utilization Project (AHRQ HCUP) is 2017.

- Data for the most recent year show that quality was better for Blacks than for Whites on only 11% of all quality measures and that quality was better for Whites than for Blacks on 41% of all quality measures (Figure 3).
- For Patient Safety, quality was better for Blacks than for Whites for 21% of Patient Safety measures and better for Whites than for Blacks on 30% of Patient Safety measures.

Largest Disparities

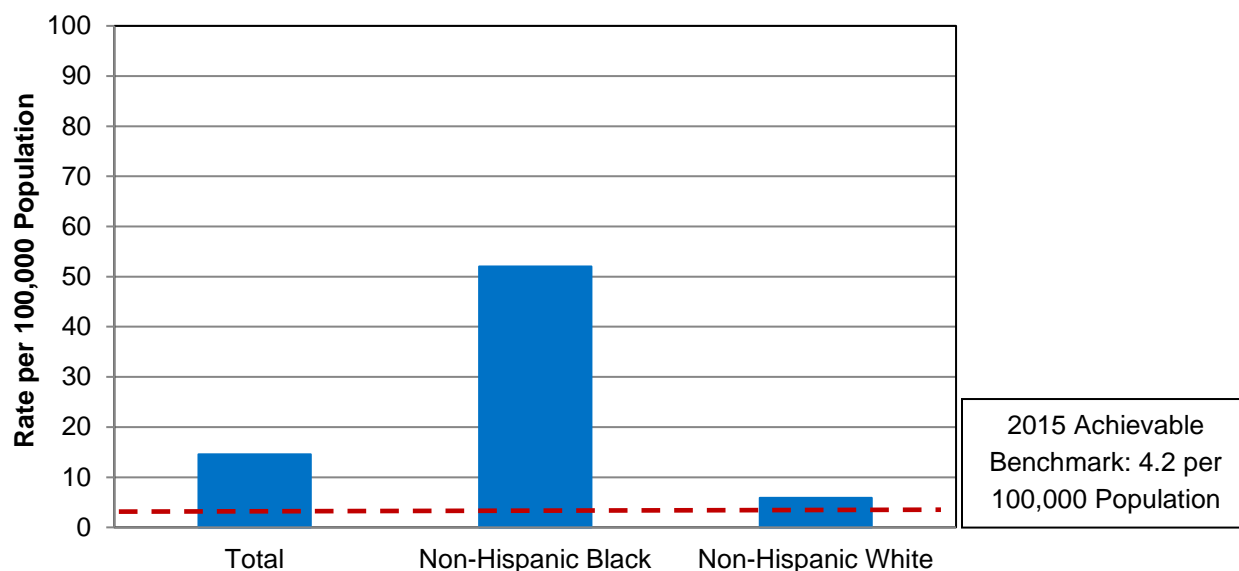
The measures with the largest disparities for Blacks include:

- New HIV cases per 100,000 population age 13 and over.
- HIV infection deaths per 100,000 population.
- Hospital admissions for asthma per 100,000 population, children ages 2-17.

New HIV Cases

According to CDC research, in 2017, Blacks accounted for 13% of the nation's population but represented 43% of all new HIV cases. Most of these cases affect Black male adolescents and adults.⁹ The Office of Minority Health reports that in 2016, for every one White male, an estimated 7.8 African American males received a new HIV diagnosis.¹⁰

Figure 4. New HIV cases per 100,000 population age 13 and over, 2016



Source: Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, HIV AIDS Surveillance System, 2016.

Note: For this measure, lower rates are better.

- In 2016, non-Hispanic Blacks reported 52.0 new HIV cases per 100,000 population for people age 13 and over compared with 5.9 per 100,000 cases for non-Hispanic Whites (Figure 4).

- The 2015 achievable benchmark was 4.2 per 100,000 population. At the current rate of improvement (trends data not shown), non-Hispanic Blacks could achieve the benchmark in 18 years and non-Hispanic Whites could achieve the benchmark in 9 years.
- The top 10% of states and territories that reached the benchmark are Idaho, Iowa, Maine, West Virginia, and Wisconsin.

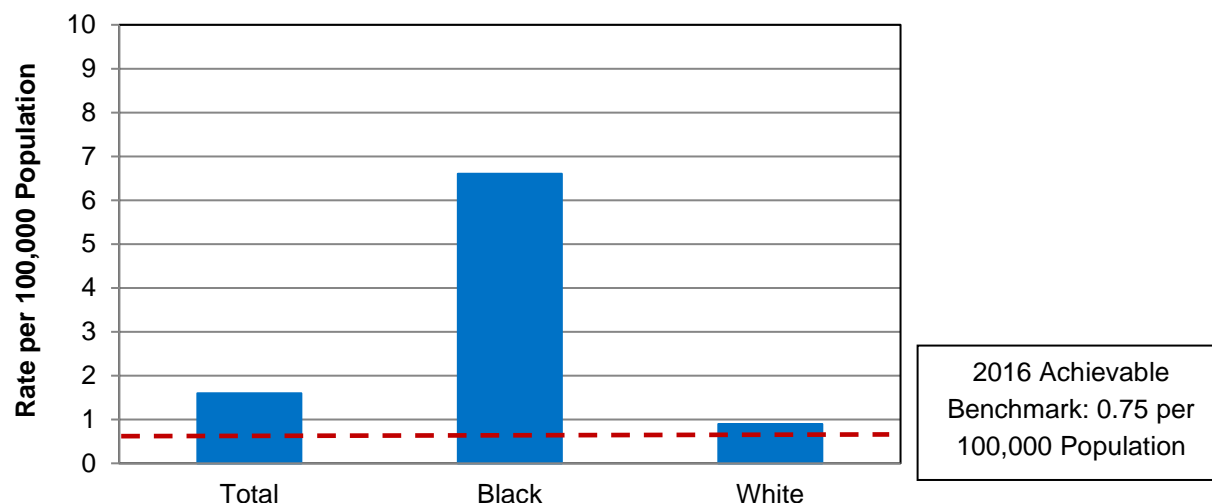
Resources

- In 2019, the administration announced a Presidential initiative to end the HIV epidemic in the United States. The Department of Health and Human Services has committed to “reducing new infections by 75 percent in the next five years and by 90 percent in the next ten years.”¹¹ The Department’s website www.hiv.gov also outlines key resources for patients, provides data, and details programs supporting a federal response to the epidemic.

HIV Infection Deaths

HIV mortality disproportionately affects some racial and ethnic groups more than others. According to CDC data, in 2017, HIV was the sixth leading cause of death for Black men ages 25-34 and fifth for Black women ages 35-44.¹²

Figure 5. HIV infection deaths per 100,000 population, 2017



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System-Mortality, 2017.

Note: For this measure, lower rates are better.

- In 2017, Blacks had 6.6 HIV infection deaths per 100,000 population compared with 0.9 per 100,000 cases for Whites (Figure 5). These cases represent mortality for which HIV was the primary cause of death.
- The 2016 achievable benchmark was 0.75 per 100,000 population. There is no evidence of progress toward the benchmark (trend data shown in Figure 10).

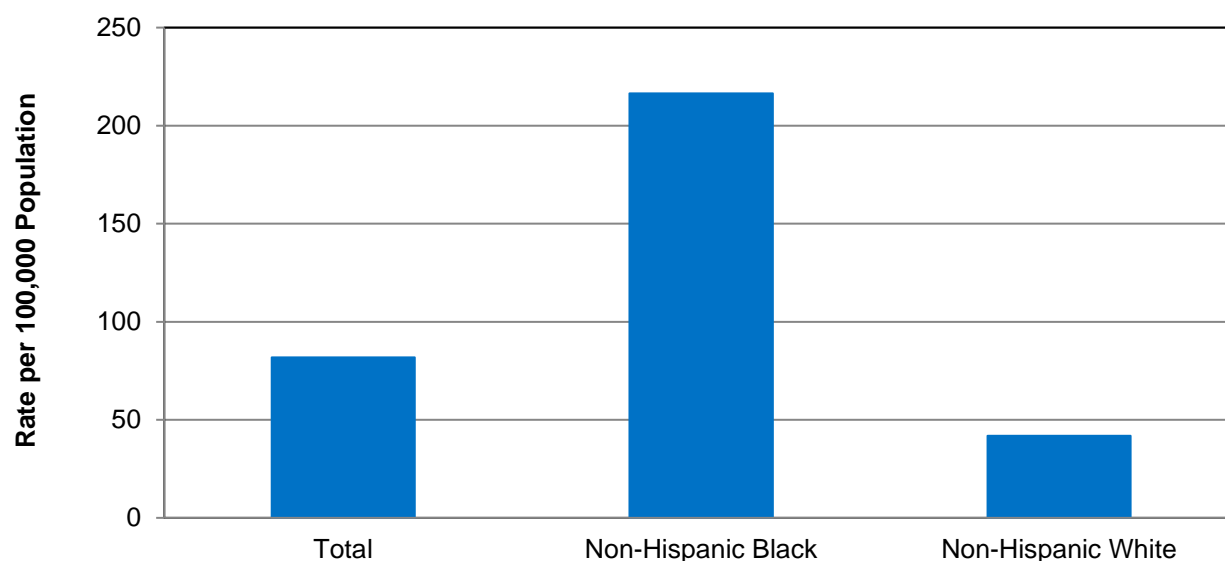
- The top 10% of states and territories that reached the benchmark are Kansas, Kentucky, Minnesota, Missouri, Ohio, and Washington (more than 5 states reached the benchmark due to ties).

Resources

- Federal efforts to reduce mortality include promotion of treatment therapies, such as antiretroviral therapy, pre-exposure prophylaxis, and postexposure prophylaxis.¹³ Several HHS agencies provide a federal response to the HIV epidemic, including the Health Resources and Services Administration (HRSA) HIV/AIDS Bureau, which administers the Ryan White HIV/AIDS Program (RWHAP). This is the largest federal program focused exclusively on providing HIV care and treatment to patients with inadequate or no insurance. Through RWHAP's partnerships, more than 512,000 people receive care annually.¹⁴
- Federal efforts to prevent HIV infections include the High-Impact Prevention (HIP) program. HIP is a public health approach to disease prevention in which cost-effective, proven, and scalable interventions are targeted to specific populations based on disease burden. It provides a strategy for using data to maximize the impact of available resources and interventions. The primary goals of HIP are to prevent the largest number of new infections, save life-years, and reduce disparities among populations. In this approach to disease prevention, resources are aligned with disease burden in geographic areas and within populations.¹⁵

Hospital Admissions for Asthma

Asthma is the most common chronic lung condition among children under 17 years in the United States. Asthma has no cure and without treatment, patients can die.¹⁶ CDC research shows that from 2001 to 2016, 8% fewer children experienced one or more asthma attacks. Nonetheless, in 2018, about 1 in 13 children ages 0-17 had asthma and among them, asthma disproportionately affected males, non-Hispanic Black children, and children from low-income households. Data from 2016 to 2018 show that asthma affected 14.2% of non-Hispanic Black children and 13.6% of Puerto Rican children, compared with 6.8% of non-Hispanic White children. These are longstanding trends, noting the disproportionate impact on Puerto Rican and Black children.¹⁷

Figure 6. Hospital admissions for asthma per 100,000 population, children ages 2-17, 2017

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, 2017.

Note: For this measure, lower rates are better.

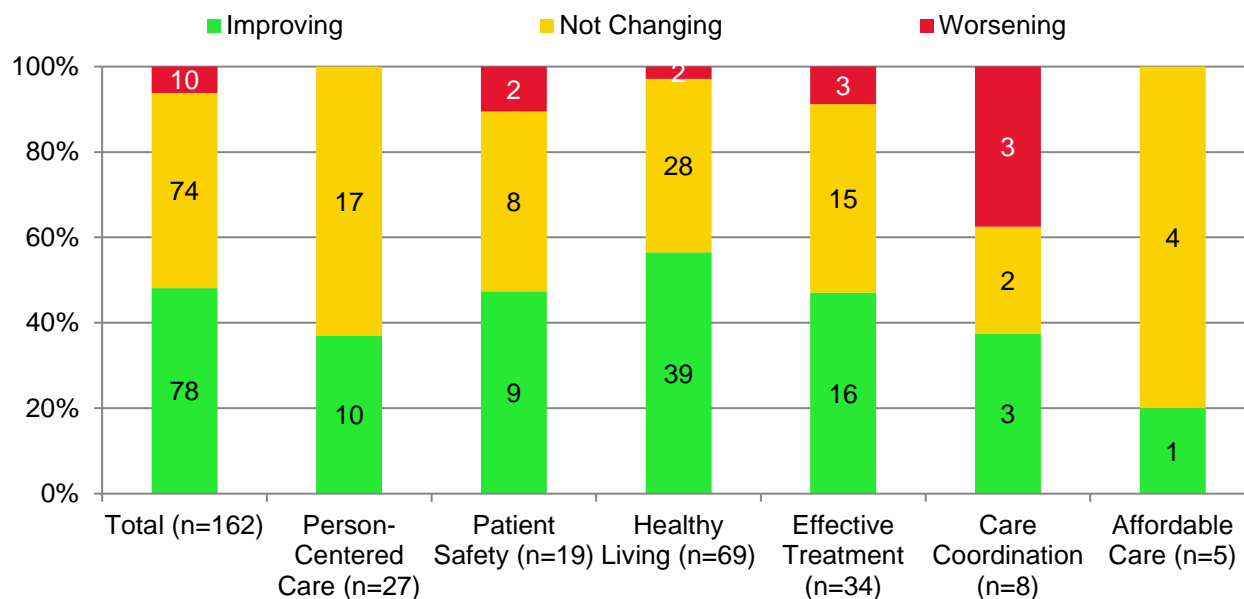
- In 2017, the rate of hospital admissions for asthma was 216.5 per 100,000 population for non-Hispanic Black children compared with 41.9 per 100,000 cases for non-Hispanic White children (Figure 6).

Resources

- CDC's current effort to reduce prevalence and improve control is the Controlling Childhood Asthma and Reducing Emergencies (CCARE) program (<https://www.cdc.gov/asthma/ccare.htm>).¹⁸ To help achieve CCARE's objectives, CDC's National Asthma Control Program developed EXHALE, a set of six evidence-based strategies that each contribute to better asthma control (<https://www.cdc.gov/asthma/exhale/index.htm>).
- In 1989, the National Heart, Lung, and Blood Institute of the National Institutes of Health established the [National Asthma Education and Prevention Program](https://www.nhlbi.nih.gov/advisory-and-peer-review-committees/national-asthma-education-and-prevention-program-coordinating) (NAEPP). NAEPP oversees the development of asthma guidelines, creates tools and materials to put guidelines into practice, coordinates federal asthma-related activities, and builds partnerships. The NAEPP has a federal advisory committee, the National Asthma Education and Prevention Program Coordinating Committee (<https://www.nhlbi.nih.gov/advisory-and-peer-review-committees/national-asthma-education-and-prevention-program-coordinating>).

Trends in Quality of Care for Blacks

Figure 7. Number and percentage of all quality measures that were improving, not changing, or worsening over time, total and by priority area, 2000 through 2014, 2015, 2016, 2017, or 2018



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percent change and to assess statistical significance. Progress on individual measures is determined as follows:

- **Improving:** The average annual percent change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing:** The average annual percent change is $\leq 1\%$ in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening:** The average annual percent change is 1% or greater in the undesirable direction, and $p < 0.10$.

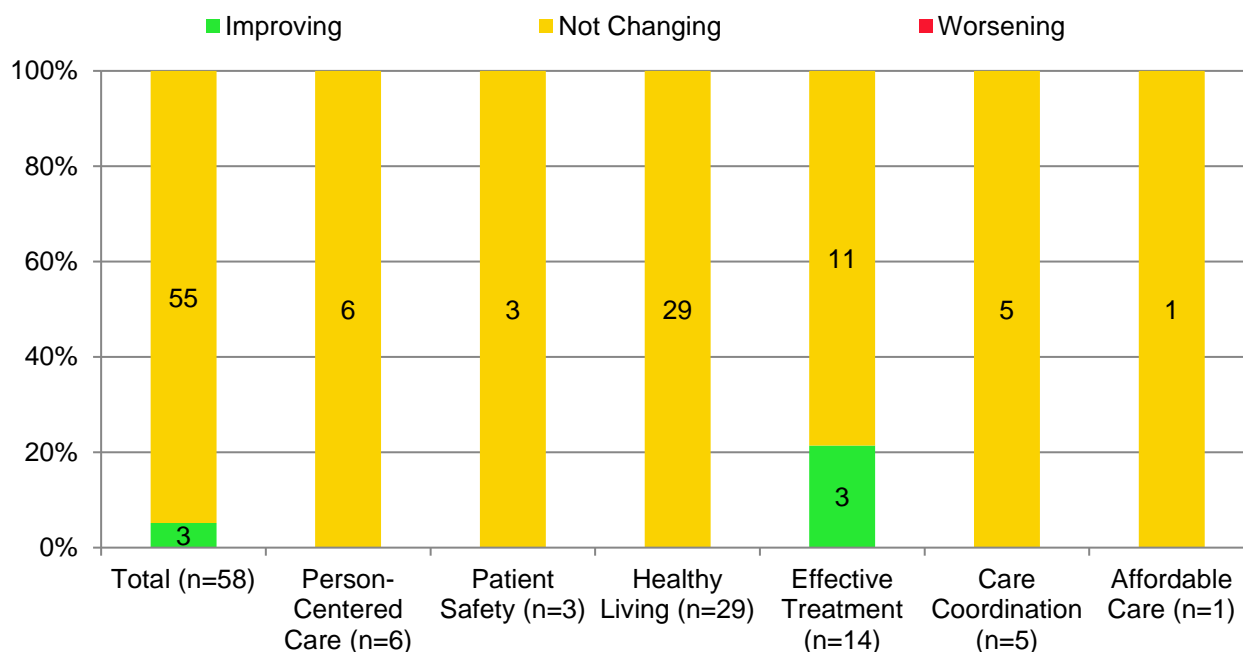
Different data sources have different data years. For example, the most recent data year available for trending from the National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Centers for Medicare & Medicaid Services, Hospital Consumer Assessment of Healthcare Providers and Systems (CMS HCAHPS) is 2018.

- Across the 162 measures of healthcare quality tracked in the report for Blacks, 48% showed improvement, 46% remained unchanged, and 6% were getting worse from 2000 to 2018 (Figure 7).ⁱⁱ
- Healthy Living (57% of measures), Effective Treatment (47% of measures), and Patient Safety (47% of measures) showed the most improvement.

ⁱⁱ Due to a change in the Healthcare Cost and Utilization Project (HCUP) data, the same measures reported in past reports are not represented in this report. HCUP converted all measures from International Classification of Diseases, Ninth Revision (ICD-9) to Tenth Revision (ICD-10) codes, thus changing the outcomes of these measures. Therefore, trend data are not available at this time.

Changes in Disparities for Blacks

Figure 8. Number and percentage of quality measures with disparity at baseline for which disparities related to race and ethnicity were improving, not changing, or worsening over time, total and by priority area, 2000 through 2014, 2015, 2016, 2017, or 2018



Key: n = number of measures.

Note: Different data sources have different data years. For example, the most recent data year available for trending from the National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Centers for Medicare & Medicaid Services, Hospital Consumer Assessment of Healthcare Providers and Systems (CMS HCAHPS) is 2018.

- From 2000 to 2018, only 5% measures with disparities in quality of care experienced by Blacks were narrowing (Figure 8). Of 58 quality measures for which a disparity existed at baseline, only 3 showed a narrowing disparity:
 - Adults with a major depressive episode in the last 12 months who received treatment for depression in the last 12 months.
 - New HIV cases per 100,000 population age 13 and over.
 - Adjusted incident rates of end stage renal disease (ESRD) due to diabetes per million population.
- Disparities were not changing for 95% of measures, and none were widening.

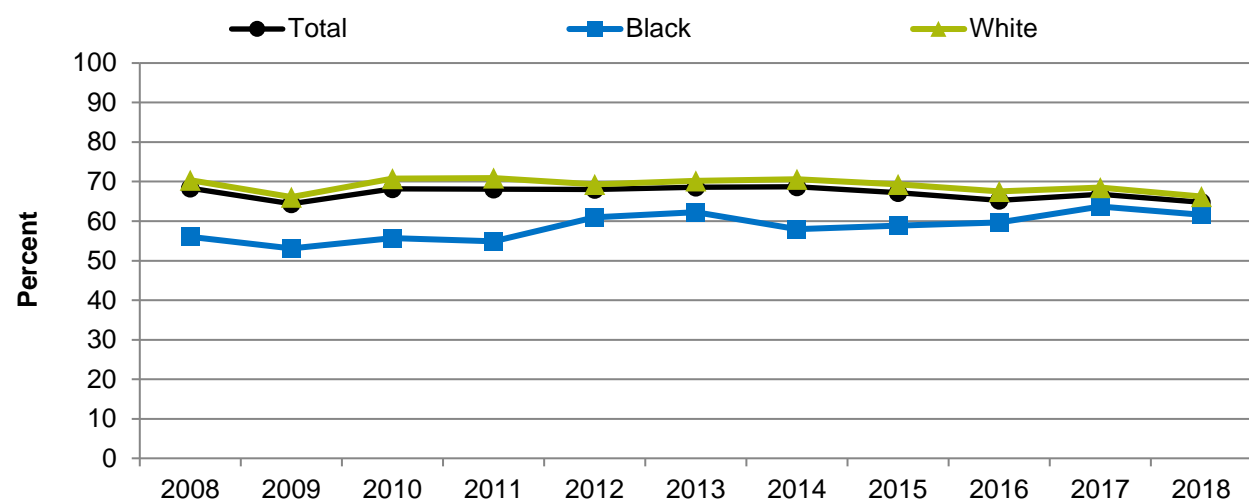
Treatment for Depression

Treatment for depression can reduce symptoms and associated illnesses and improve functioning and quality of life. Cost-benefit analyses showed that compared with usual care, strategies for treating depression in primary care settings, such as the collaborative care model, have produced positive net social benefits.¹⁹

Barriers to high-quality mental health care include:

- Cost of care,
- Lack of sufficient insurance or lack of insurance parity for mental health services,
- Discrimination, stigma, and other negative attitudes toward mental health problems,
- Lack of culturally and linguistically competent providers,
- Fragmented organization of services, and
- Mistrust of providers.

Figure 9. Adults with major depressive episode in the last 12 months who received treatment for depression in the last 12 months, 2008-2018

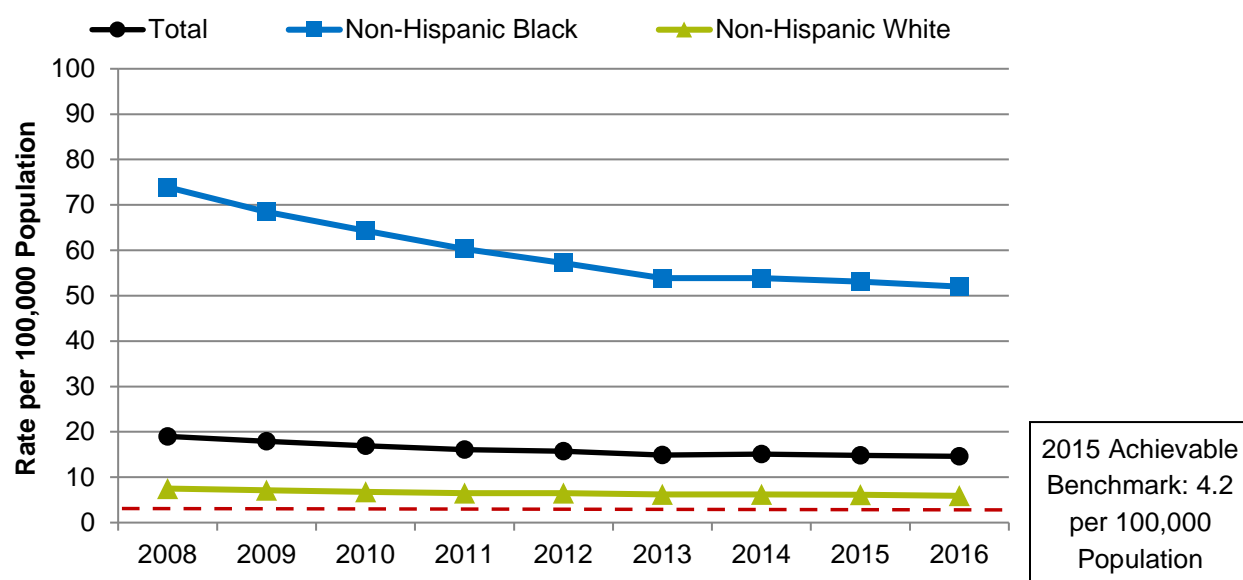


Source: Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, National Survey on Drug Use and Health, 2008-2018.

- Data from 2008 to 2018 show that the disparity between Blacks and Whites is narrowing. The percentage of Blacks who needed and received treatment for depression increased from 56.0% in 2008 to 61.6% in 2018. There were no statistically significant changes in the percentages for Whites (Figure 9).

New HIV Cases

Figure 10. New HIV cases per 100,000 population age 13 and over, 2008-2016



Source: Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, HIV-AIDS Surveillance System, 2008-2016.

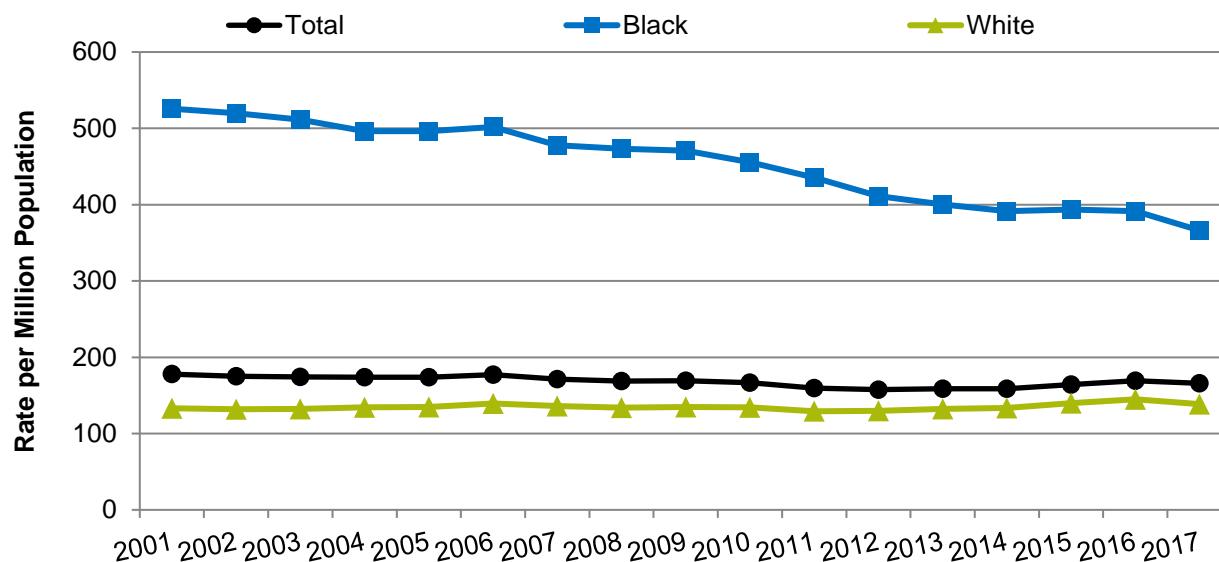
Note: For this measure, lower rates are better.

- Data from 2008 to 2016 show that the disparity between non-Hispanic Blacks and non-Hispanic Whites is narrowing, but non-Hispanic Blacks are still experiencing a much higher rate of new HIV cases (52.0 per 100,000 population in 2016) compared with non-Hispanic Whites (5.9 per 100,000 population in 2016; Figure 10).
- The 2015 achievable benchmark was 4.2 per 100,000 population. At the current rate of increase, overall, the benchmark could be achieved by non-Hispanic Blacks in 18 years and non-Hispanic Whites in 9 years.
- The top 10% of states and territories that reached the benchmark are Idaho, Iowa, Maine, West Virginia, and Wisconsin.

End Stage Renal Disease Due to Diabetes

According to the Office of Minority Health, African American adults are 60 percent more likely than non-Hispanic White adults to have been diagnosed with diabetes by a physician and 3.5 times more likely to be diagnosed with end stage renal disease (ESRD) compared with non-Hispanic Whites. During 2017, there were 124,500 newly reported cases of ESRD and diabetes was listed as the primary cause for nearly 50% (58,371).²⁰

Figure 11. Adjusted incident rates of end stage renal disease due to diabetes per million population, 2001-2017



Source: National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, U.S. Renal Data System, 2001-2017.

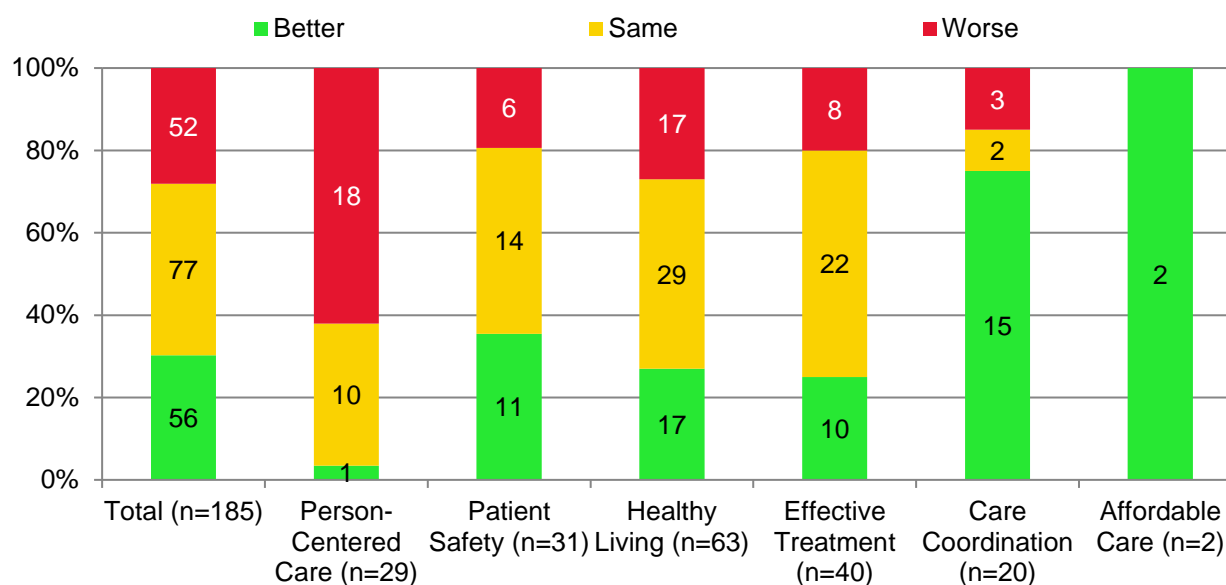
Note: For this measure, lower rates are better.

- Data from 2001 to 2017 show that the disparity between Blacks and Whites is narrowing, but Blacks are still experiencing a higher rate of ESRD due to diabetes (Figure 11).
- Disparities have been persistent, with Blacks having a higher incident rate of ESRD due to diabetes than Whites in all years.

Disparities for Asians

In 2017, Asians with limited English proficiency and a usual source of care (USC) were less likely than Whites to report that their USC had language assistance.

Figure 12. Number and percentage of quality measures for which Asians experienced better, same, or worse quality of care compared with reference group (White) for the most recent data year, 2014, 2016, 2017, or 2018



Key: n = number of measures.

Note: The difference between two groups is meaningful only if the absolute difference between the two groups is statistically significant with a p-value <0.05 on a two-tailed test **and** the relative difference between the two groups is at least 10%. The most recent data years are used for this analysis. Different data sources have different data years for most recent data year. For example, the most recent data year from the National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Agency for Healthcare Research and Quality Healthcare Cost and Utilization Project (AHRQ HCUP) is 2017.

- Data for the most recent year show that quality was better for Asians than for Whites on almost a third of all quality measures, the same for 42%, and worse for 28% (Figure 12).

Largest Disparities

The measures with the largest disparities across all quality domains for Asians include:

- Adults with limited English proficiency and a usual source of care (USC) whose USC had language assistance.
- Adults who reported that home health providers always treated them with courtesy and respect in the last 2 months of care.
- Adults who reported that home health providers always treated them as gently as possible in the last 2 months of care.

Providers With Language Assistance

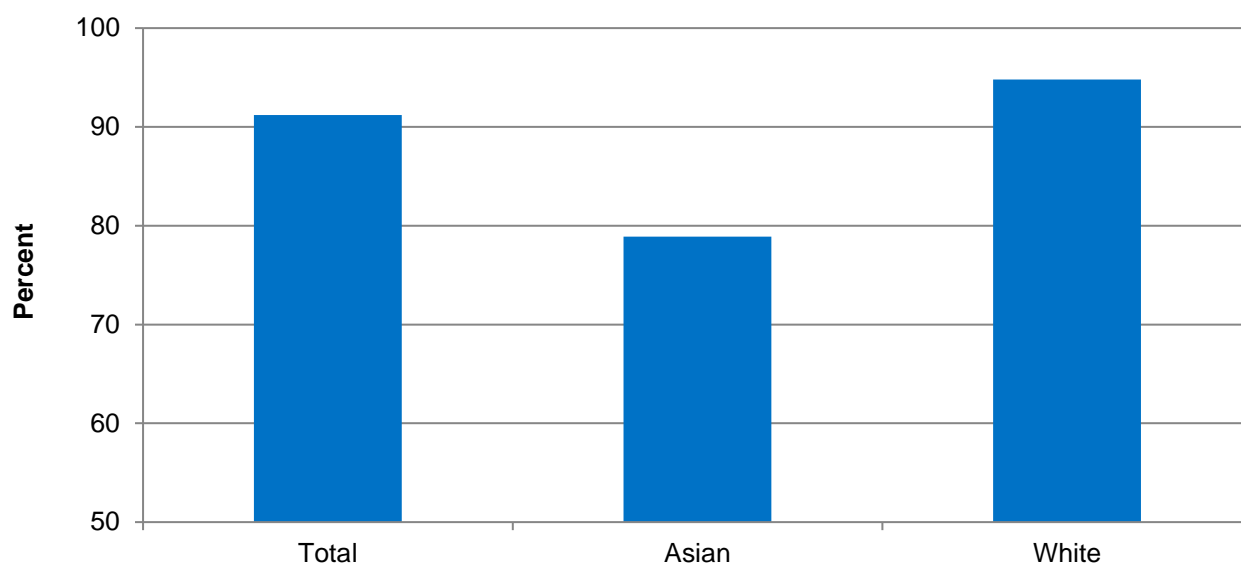
Current research shows that Asians continue to experience health disparities in several quality areas, including patient-centered care and satisfaction.²¹ Adults who have limited English proficiency may experience disparities in their care and gaps in communication with their healthcare team.²²

According to the Migration Policy Institute, in 2015, an estimated 25.9 million individuals living in the United States reported having limited English proficiency.²³

“More than one in four people aged 5 and over with LEP are born in the U.S.”²⁴

Language assistance such as access to translation services, health education materials written in a known language, and other resources are required by law, but not all patients have access to these services at their usual source of care.²⁵

Figure 13. Adults with limited English proficiency and a usual source of care (USC) whose USC had language assistance, 2017



Source: Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

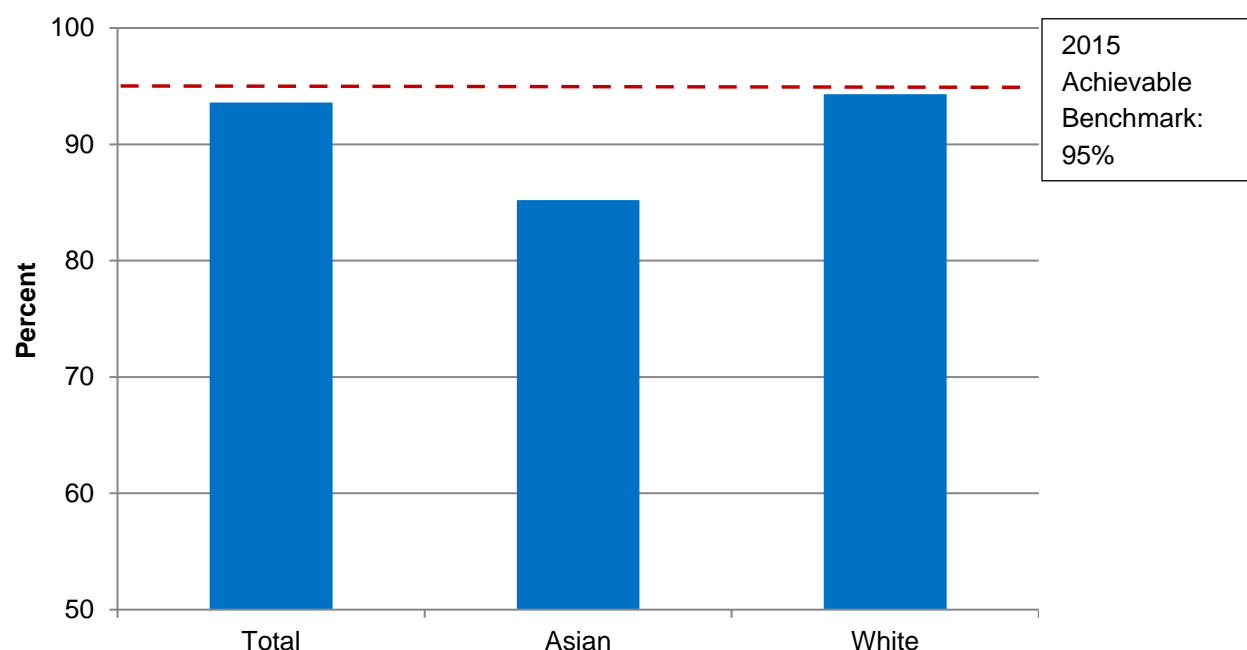
- In 2017, Asians with limited English proficiency and a usual source were less likely than Whites to have a USC with language assistance (78.9% compared with 94.8%; Figure 13).

The Limited English Proficiency website²⁵ offers a repository of resources collated by the Department of Justice to support improved communication with patients. AHRQ has also established a Limited English Proficiency module as part of its TeamSTEPPS® training that shows the importance of language assistance services in keeping patients safe and avoiding adverse events.²⁶

Treatment by Home Health Providers

Home health providers are committed to delivering high-quality and compassionate care and services to patients in a respectful manner that supports each patient's dignity. Home health performance is examined through several types of quality measures that look at areas such as efficiency, patient safety, and patient-centered care. Evaluation of patient experience of care is conducted with the Consumer Assessment of Healthcare Providers and Systems Home Health Care Survey.²⁷

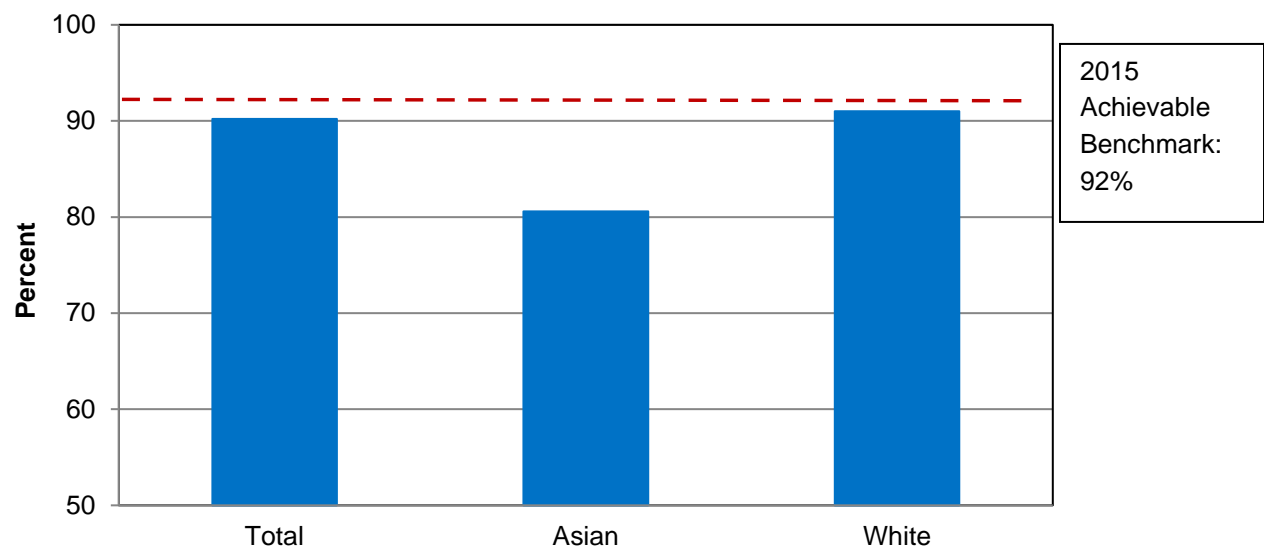
Figure 14. Adults who reported that home health providers always treated them with courtesy and respect in the last 2 months of care, 2018



Source: Agency for Healthcare Research and Quality, Home Health Consumer Assessment of Healthcare Providers and Systems, 2018.

- In 2018, the percentage of adults who reported that home health providers always treated them with courtesy and respect in the last 2 months was lower for Asians (85.2%) compared with Whites (94.3%; Figure 14).
- The 2015 achievable benchmark was 95%. There is no evidence of progress toward the benchmark (trend data not shown).
- The top 10% of states and territories that reached the benchmark are Alabama, Kentucky, Louisiana, Mississippi, South Carolina, and West Virginia (more than 5 states reached to the benchmark due to ties).

Figure 15. Adults who reported that home health providers always treated them as gently as possible in the last 2 months of care, 2018

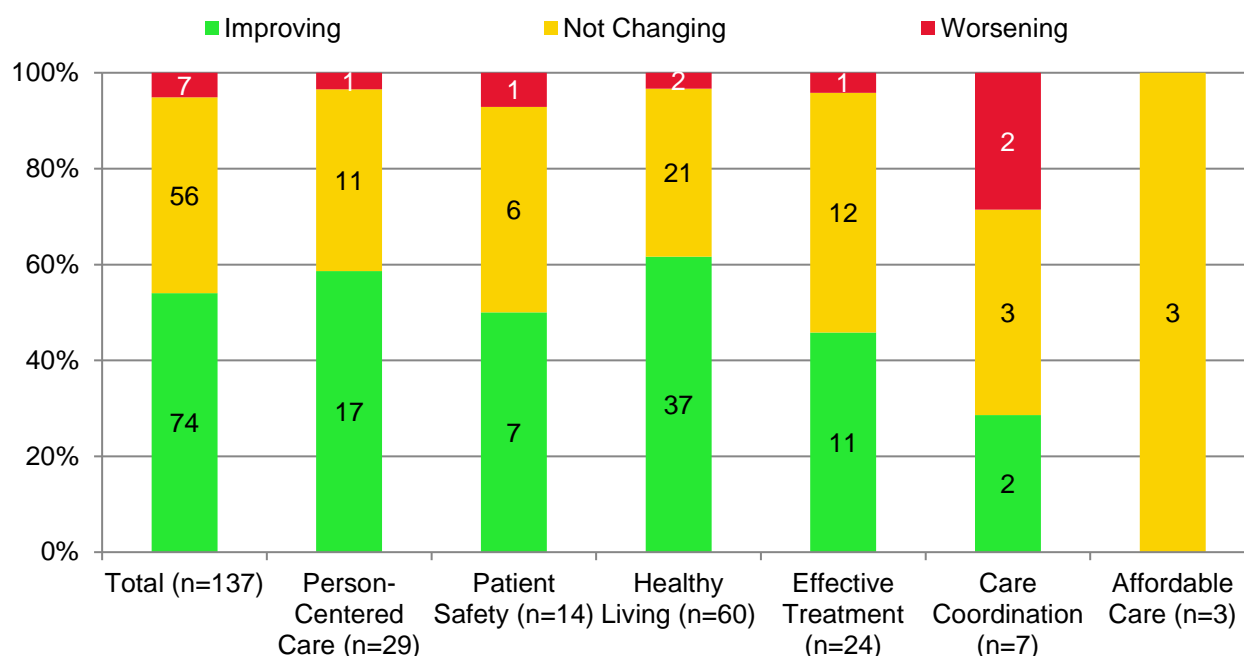


Source: Centers for Medicare & Medicaid Services, Home Health Consumer Assessment of Healthcare Providers and Systems, 2018.

- In 2018, 80.6% of Asian adults reported that home health providers always treated them as gently as possible compared with 91.0% of White adults (Figure 15).
- The 2015 achievable benchmark was 92%. There is no evidence of progress toward the benchmark (trend data not shown).
- The top 10% of states and territories that reached the benchmark are Alabama, Louisiana, Mississippi, Rhode Island, and West Virginia.

Trends in Quality of Care for Asians

Figure 16. Number and percentage of all quality measures that were improving, not changing, or worsening over time, total and by priority area, from 2000 through 2011, 2014, 2015, 2016, 2017, or 2018



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percent change and to assess statistical significance. Progress on individual measures is determined as follows:

- **Improving:** The average annual percent change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing:** The average annual percent change is $\leq 1\%$ in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening:** The average annual percent change is 1% or greater in the undesirable direction, and $p < 0.10$.

Different data sources have different data years. For example, the most recent data year available for trending from the National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Centers for Medicare & Medicaid Services, Hospital Consumer Assessment of Healthcare Providers and Systems (CMS HCAHPS) is 2018.

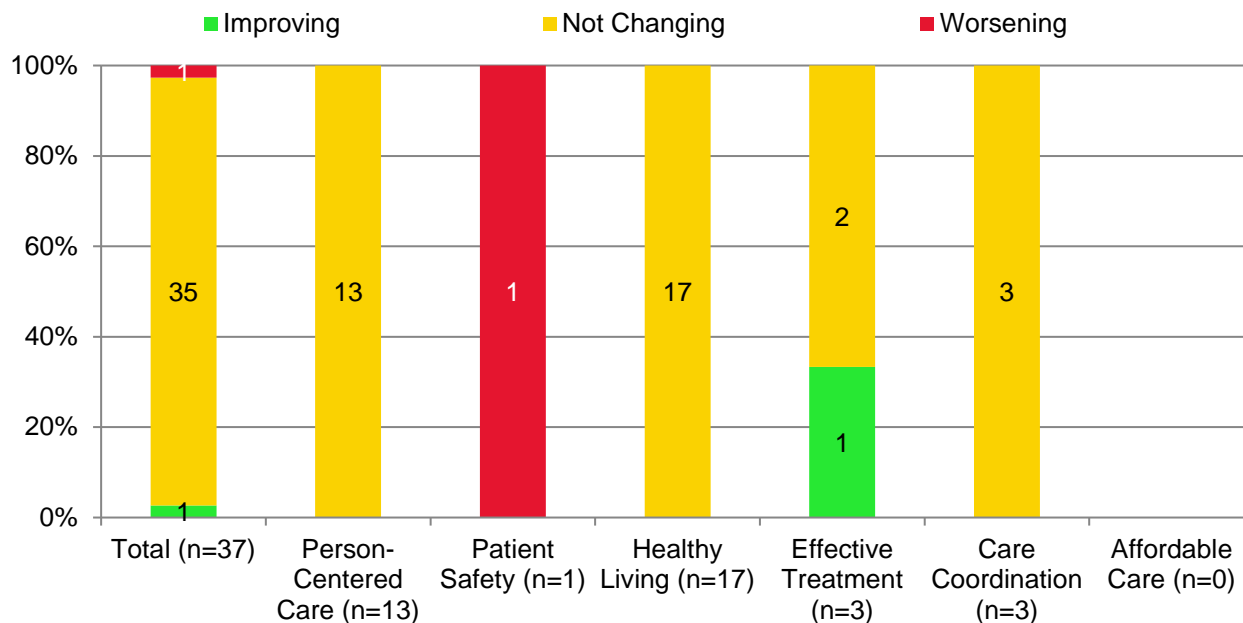
- Across the 137 measures of healthcare quality tracked in the report for Asians, 54% were improving, 41% were not changing, and 5% were getting worse from 2000 to 2018 (Figure 16).ⁱⁱⁱ

ⁱⁱⁱ Due to a change in the Healthcare Cost and Utilization Project (HCUP) data, the same measures reported in past reports are not represented in this report. HCUP converted all measures from International Classification of Diseases, Ninth Revision (ICD-9) to Tenth Revision (ICD-10) codes, thus changing the outcomes of these measures. Therefore, trend data are not available at this time.

- Affordable Care (no measures) and Care Coordination (29% of measures) showed the least improvement.
- Healthy Living (62%) and Person-Centered Care (59%) showed the most improvement.

Changes in Disparities for Asians

Figure 17. Number and percentage of quality measures with disparity at baseline for which disparities related to race and ethnicity were improving, not changing, or worsening over time, total and by priority area, 2000 through 2014, 2015, 2016, 2017, or 2018



Key: n = number of measures.

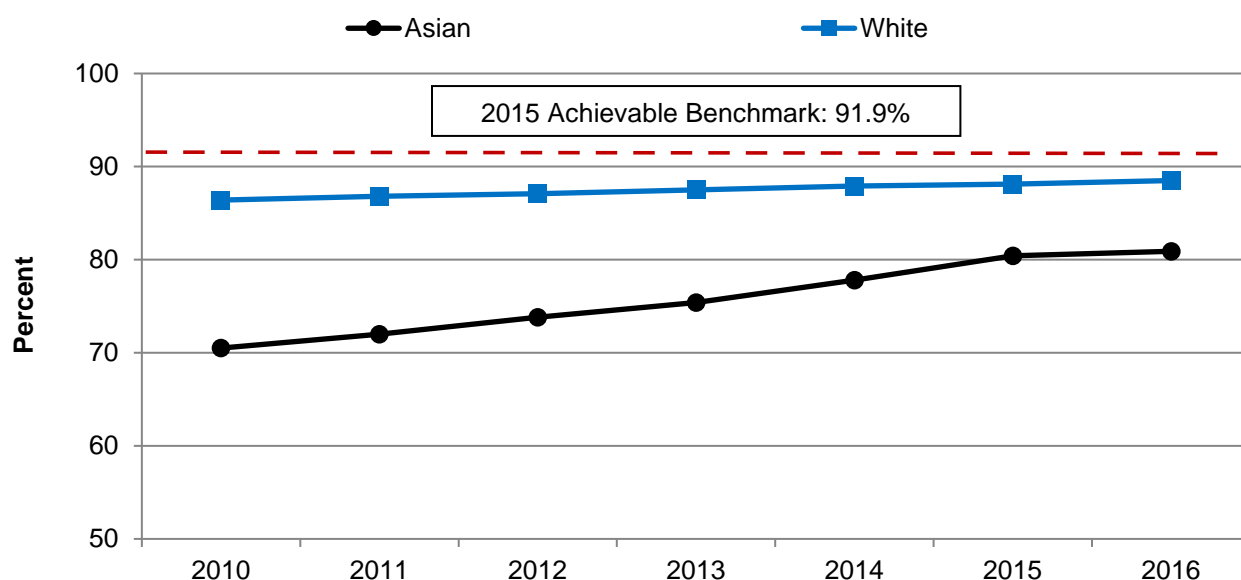
Note: Different data sources have different data years. For example, the most recent data year available for trending from the National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Centers for Medicare & Medicaid Services, Hospital Consumer Assessment of Healthcare Providers and Systems (CMS HCAHPS) is 2018.

- From 2000 through 2018, disparities in quality of care between Asians and Whites remained the same for most measures. Of 37 quality measures with a disparity at baseline, disparities were not changing for 35 (95%) (Figure 17).
- One measure showed narrowing disparities: People age 13 and over living with HIV who know their serostatus.
- One measure showed a widening disparity: Home health patients whose management of oral medications improved.
- No affordable care measures with data for Asians were available.

Knowledge of HIV Serostatus

Stigmatization of HIV hinders patients from getting tested, which may delay treatment and affect a patient's health and quality of life.²⁸ According to CDC, people ages 13-24 are less likely to know their HIV serostatus.²⁹ Accurate estimates of new HIV infection rates are crucial for preventing the spread of the disease.

Figure 18. People age 13 and over living with HIV who know their serostatus, 2010-2016



Source: Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, HIV-AIDS Surveillance System, 2010-2016.

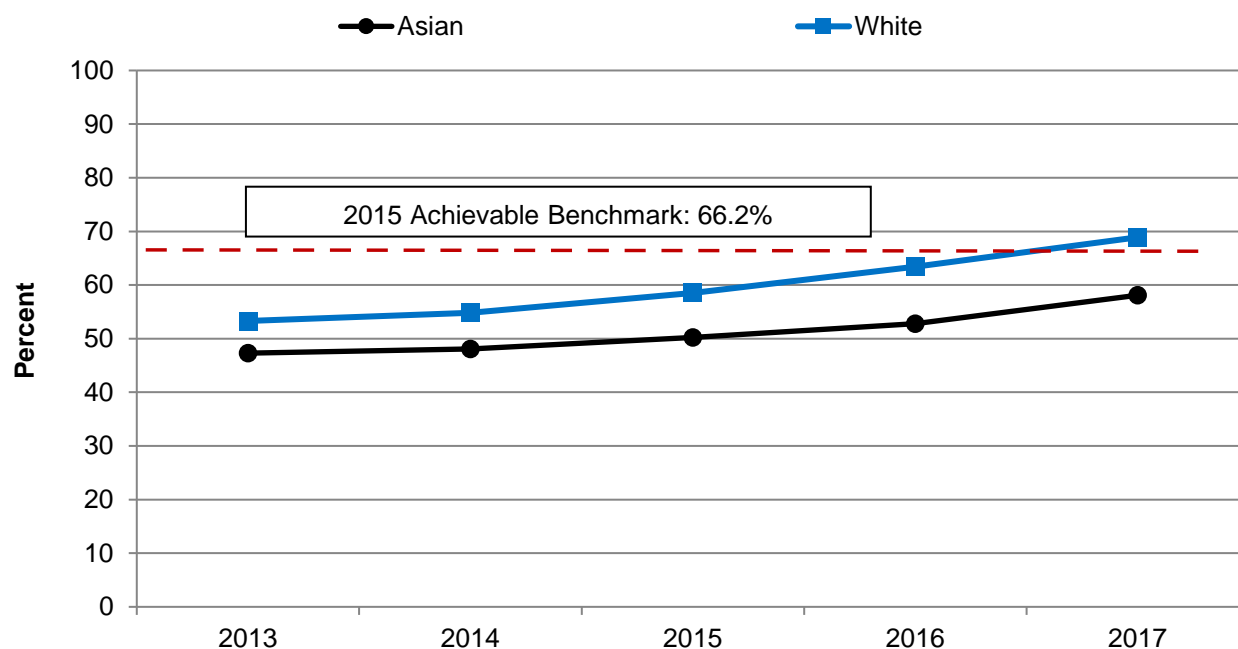
- Data from 2000 to 2016 show that the disparity between Asians and Whites is narrowing as the percentage of Asians (70.5% to 80.9%) who know their serostatus increased at a faster rate compared with Whites (86.4% to 88.5%) (Figure 18).
- The 2015 achievable benchmark was 91.9%. At the current rate of increase, overall, the benchmark could be achieved in 6 years.
- The top 10% of states and territories that reached the benchmark are Idaho, New Jersey, Pennsylvania, South Dakota, and Vermont.

Oral Medication Management

The ability to perform daily activities, such as taking medications correctly, is important to the health status and quality of life of people living in the community. Taking too much or too little can keep the drugs from working properly and may cause unintended harm, including death. The home health team can help teach patients ways to organize medications and to take them properly. If patients get better at taking medications correctly, it means the home health team is doing a good job teaching patients how to take their drugs and about the possible harm if they do not follow these instructions.

Specific items that should be discussed include all the prescriptions and other medications the patient takes, allergic or other adverse reactions to drugs experienced in the past, and actions to take if a medication is not working. This measure shows how often the home health team helped patients get better at taking their prescription and other medications correctly (including prescription medications, over-the-counter medications, vitamins, and herbal supplements). Only medications the patient takes by mouth are considered.

Figure 19. Home health care patients whose management of oral medications improved, 2013-2017



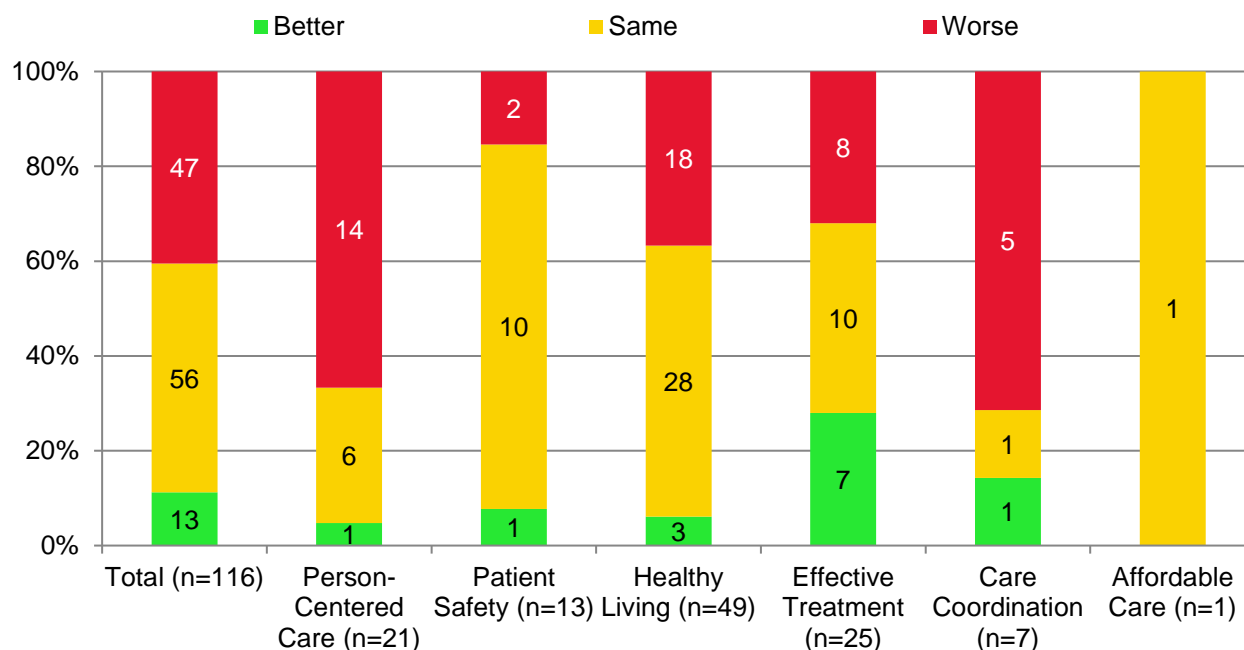
Source: Centers for Medicare & Medicaid Services, Home Health Quality Initiative, Chronic Condition Data Warehouse, Outcome and Assessment Information Set, 2013-2017.

- From 2013 to 2017, the percentage of home health care patients whose management of oral medications improved increased for both Asians and Whites. Whites, however, improved faster than Asians, so the disparity between the groups has increased (Figure 19).
- The 2015 achievable benchmark was 66.2%. At the current rate of increase, the benchmark could be achieved by Asians in 3 years; Whites have already achieved the benchmark.
- The top 10% of states and territories that reached the benchmark are Delaware, Mississippi, New Jersey, North Dakota, and South Carolina.

Disparities for American Indians and Alaska Natives

American Indians and Alaska Natives performed worse on two-thirds of Person-Centered Care quality measures.

Figure 20. Number and percentage of quality measures for which American Indians and Alaska Natives experienced better, same, or worse quality of care compared with reference group (White) for the most recent data year, 2014, 2016, 2017, or 2018



Key: n = number of measures.

Note: The difference between two groups is meaningful only if the absolute difference between the two groups is statistically significant with a p-value <0.05 on a two-tailed test **and** the relative difference between the two groups is at least 10%. The most recent data years are used for this analysis. Different data sources have different data years for most recent data year. For example, the most recent data year from the National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Agency for Healthcare Research and Quality Healthcare Cost and Utilization Project (AHRQ HCUP) is 2017.

- Data for the most recent year show that quality was worse for American Indians and Alaska Natives (AI/ANs) than for Whites for 41% of all quality measures and that quality was better for AI/ANs than for Whites for 11% of all quality measures (Figure 20).

Measures with the largest disparities for the most recent year where data were available include:

- Hospital patients who received influenza vaccination.
- Infant mortality per 1,000 live births, birth weight 2,500 grams or more.
- New HIV cases per 100,000 population age 13 and over.

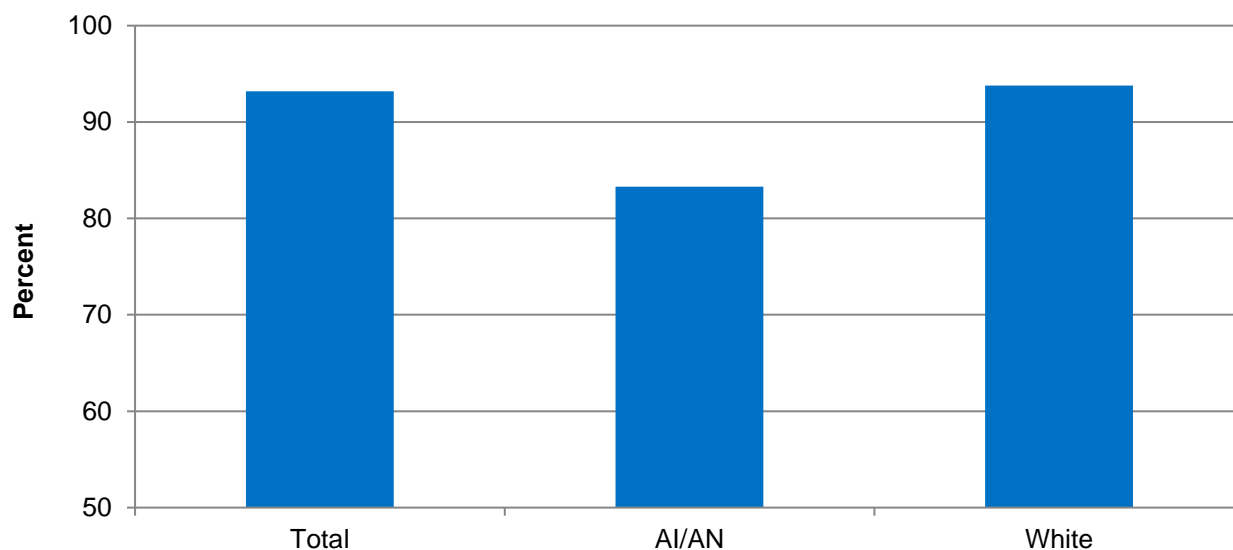
Influenza Vaccination

The Centers for Disease Control and Prevention (CDC) estimates that there were 21,500 to 35,500 flu-related deaths from October 1, 2018, through March 9, 2019.³⁰ In 2017, approximately 92% of hospital employees reported receiving an influenza vaccination in the 2017-2018 season according to CDC.³¹

While long-debated as an issue of personal choice, influenza vaccination among healthcare providers can efficiently limit the spread of disease. Moreover, current research shows that influenza vaccination provided to hospital patients also limits the spread of the flu and is even effective in patients with chronic obstructive pulmonary disease (COPD).³²

Current clinical guidelines show that people who are 6 months or older should receive an annual flu vaccine, but not all patients can access vaccines or treatment if they become ill. CDC details preventive strategies (<https://www.cdc.gov/flu/prevent/index.html>) to protect against the flu.

Figure 21. Hospital patients who received influenza vaccination, 2017



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

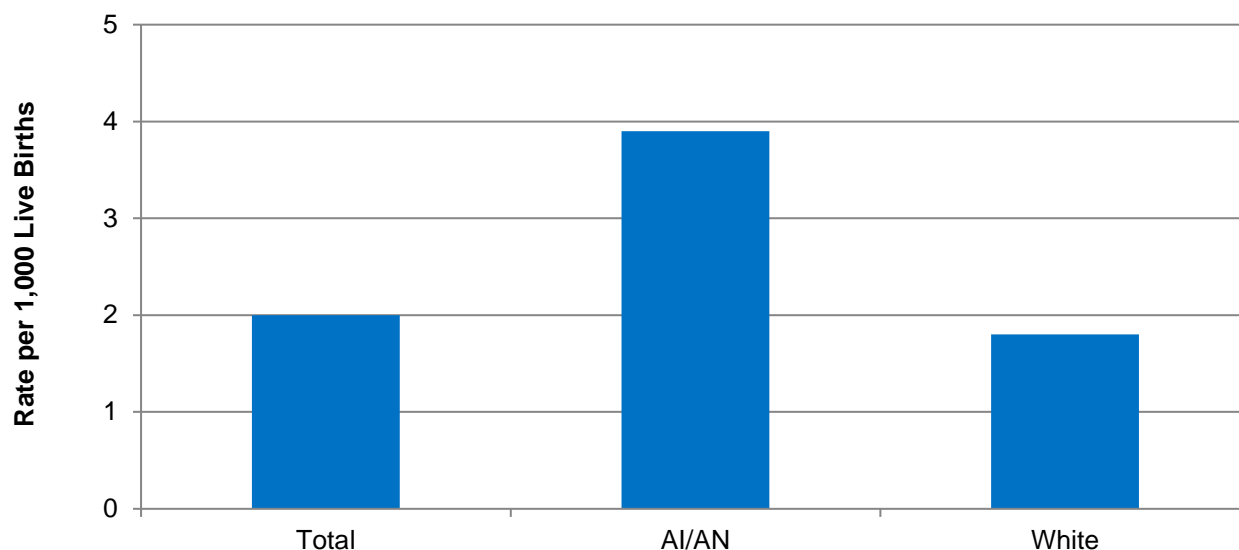
Source: Centers for Medicare & Medicaid Services, Clinical Data Warehouse for Hospital Inpatient Quality Reporting Program, 2017.

- In 2017, 83.3% of AI/AN hospital patients received influenza vaccinations compared with 93.8% of Whites (Figure 21).

Infant Mortality

Low birth weight can be a predictor of developmental delays and mortality among infants.³³ Infant mortality and low birth weight can decline when pregnant women receive adequate prenatal care.³⁴

Figure 22. Infant mortality per 1,000 live births, birth weight 2,500 grams or more, 2017



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

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System - Linked Birth and Infant Death Data, 2017.

- In 2017, infant mortality per 1,000 live births, birth weight 2,500 grams or more, was twice as high for AI/ANs (3.9 per 1,000 births) compared with Whites (1.8 per 1,000 births; Figure 22).

Resources

- Federal resources to improve the rate of infant mortality include the CDC Perinatal Quality Collaborative and the HRSA Healthy Start Initiative.
- CDC provides support to [perinatal quality collaboratives \(PQCs\)](#), which are state or multistate networks of teams working to improve health outcomes for mothers and babies. Funding supports building PQC capacity to improve the quality of perinatal care in their states, including efforts to reduce [preterm births](#) and improve prematurity outcomes. CDC works with experts to develop resources PQCs can use to further their development, including a [how-to guide](#) [PDF, 567 KB] and a [webinar series](#).



- The HRSA Healthy Start program targets communities with infant mortality rates that are at least one and a half times the U.S. national average. It aims to reduce other negative birth outcomes such as [maternal mortality](#), a growing and serious problem in our nation, as well as poverty, education, access to care, and other socioeconomic factors.

The program delivers standardized interventions, including risk assessment, health education, and medical and psychosocial supports and referrals, by a competent workforce; and support for ongoing evaluation at local and national levels.

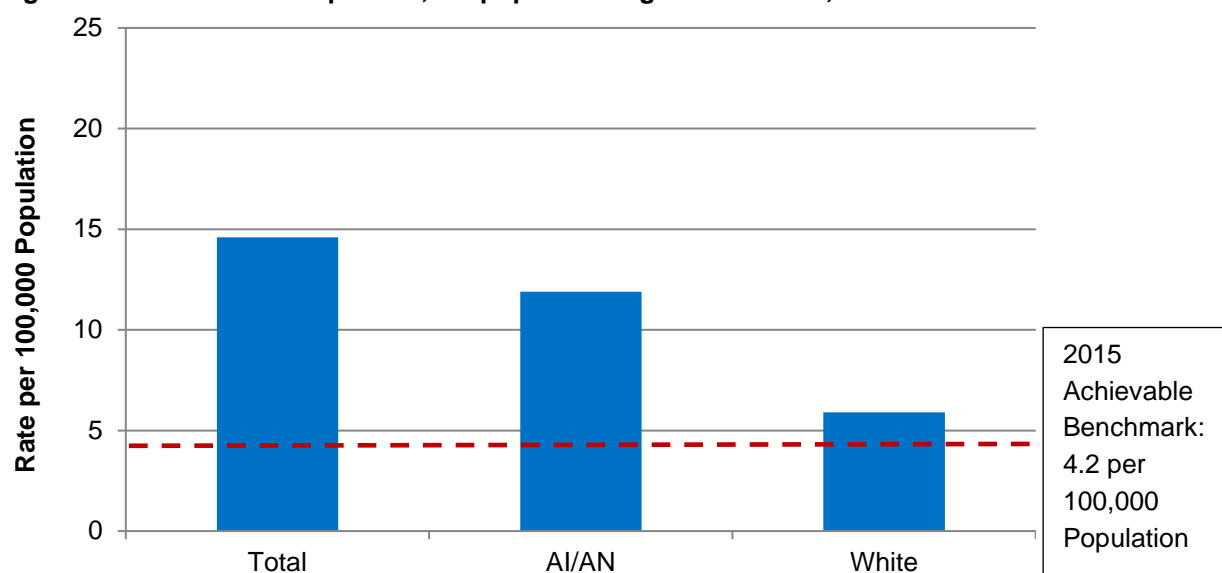
New HIV Infections

Since 2006, CDC has recommended universal screening for HIV infection at least once in healthcare settings and at least annual rescreening of people at increased risk for infection. Yet, by 2017, less than 40% of the U.S. adult population had ever been tested for HIV. At the end of 2016, an estimated 1.1 million people had HIV; AI/ANs had a rate of 196 per 100,000 population.

It is important for everyone to know their HIV status. People who do not know they have HIV cannot take advantage of HIV care and treatment and may unknowingly pass HIV to others.

The United States has more than 574 federally recognized AI/AN tribes and many different languages. Because each tribe has its own culture, beliefs, and practices, creating culturally appropriate prevention programs for each group can be challenging.

Poverty, including limited access to high-quality housing, directly and indirectly increases the risk of HIV infection and affects the health of people who have and are at risk for HIV infection. Compared with other racial/ethnic groups, AI/ANs have higher poverty rates, have completed fewer years of education, are younger, are less likely to be employed, and have lower rates of health insurance coverage.

Figure 23. New HIV cases per 100,000 population age 13 and over, 2016

Source: National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of HIV/AIDS, National HIV/AIDS Surveillance System, 2016.

- In 2016, the percentage of new HIV cases was higher for AI/ANs (11.9%) compared with Whites (5.9%) (Figure 23).
- The 2015 achievable benchmark was 4.2 per 100,000 population. At the current rate of increase, AI/ANs show no progress toward the benchmark.
- The top 10% of states and territories that reached the benchmark are Idaho, Iowa, Maine, West Virginia, and Wisconsin.

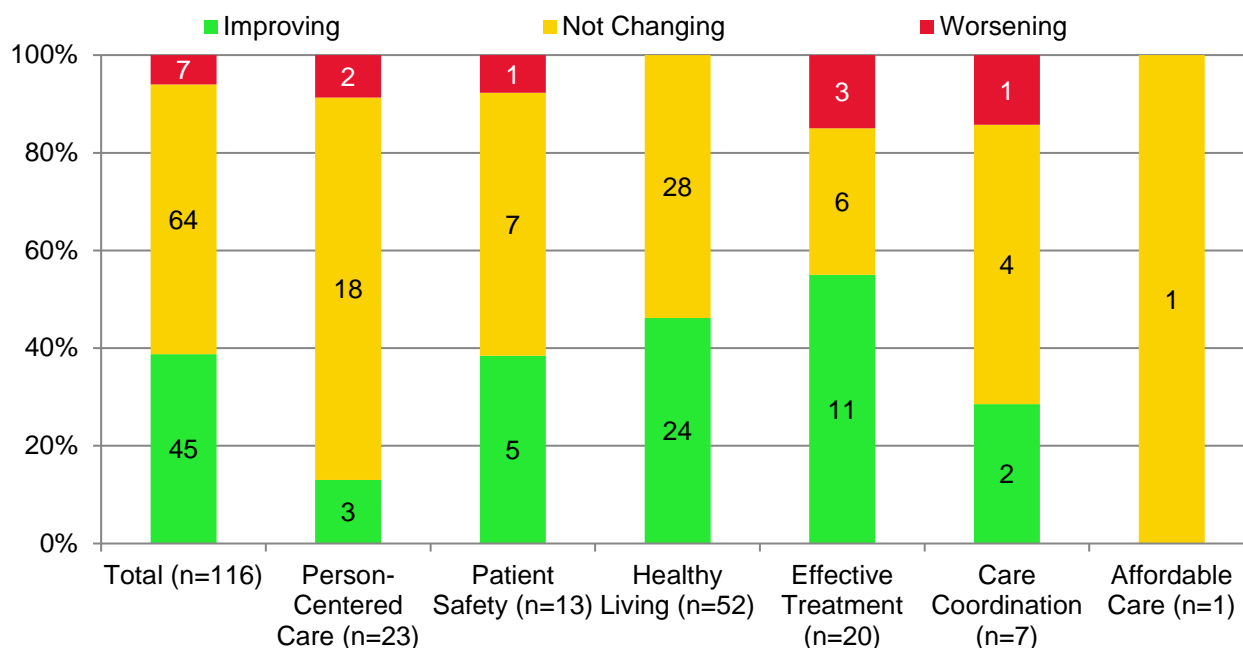
Resource

BESAFE: A Cultural Competency Model for American Indians, Alaska Natives, and Native Hawaiians is a Cultural Competency Guide for healthcare professionals who provide care for American Indian, Alaska Native, and Native Hawaiian patients infected with HIV/AIDS. It is based on the BE SAFE framework, which addresses:

- Barriers to Care.
- Ethics.
- Sensitivity of the Provider.
- Assessment.
- Facts.
- Encounters.

Trends in Quality of Care for American Indians and Alaska Natives

Figure 24. Number and percentage of all quality measures that were improving, not changing, or worsening over time, total and by priority area, from 2000 through 2013, 2014, 2015, 2016, 2017, or 2018



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percent change and to assess statistical significance. Progress on individual measures is determined as follows:

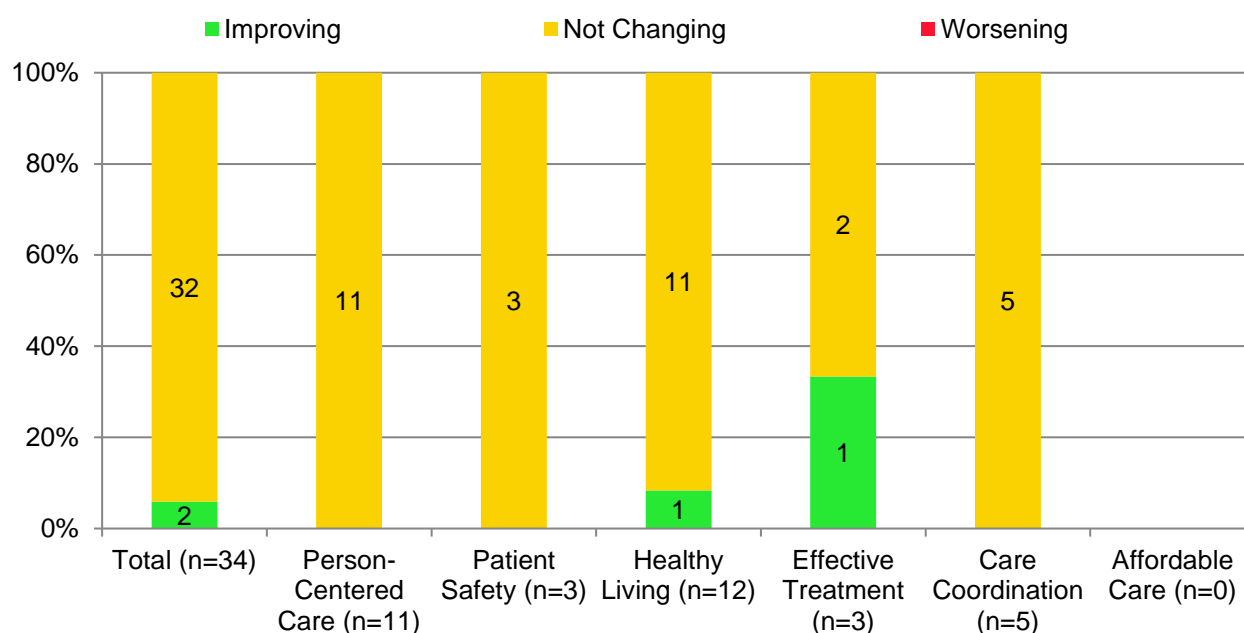
- **Improving:** The average annual percent change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing:** The average annual percent change is $\leq 1\%$ in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening:** The average annual percent change is 1% or greater in the undesirable direction, and $p < 0.10$.

Different data sources have different data years. For example, the most recent data year available for trending from the National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Centers for Medicare & Medicaid Services, Hospital Consumer Assessment of Healthcare Providers and Systems (CMS HCAHPS) is 2018.

- Among the 116 quality measures with data for AI/ANs, 45 (39%) were improving, 64 (55%) were not changing, and 7 (6%) were getting worse from 2000 through 2018 (Figure 24).
- Effective Treatment (55%) and Healthy Living (46%) showed the most improvement.

Changes in Disparities for American Indians and Alaska Natives

Figure 25. Number and percentage of quality measures with disparity at baseline for which disparities related to race and ethnicity were improving, not changing, or worsening over time, total and by priority area, from 2000 through 2013, 2014, 2015, 2016, 2017, or 2018



Key: n = number of measures.

Note: Different data sources have different data years. For example, the most recent data year available for trending from the National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Centers for Medicare & Medicaid Services, Hospital Consumer Assessment of Healthcare Providers and Systems (CMS HCAHPS) is 2018.

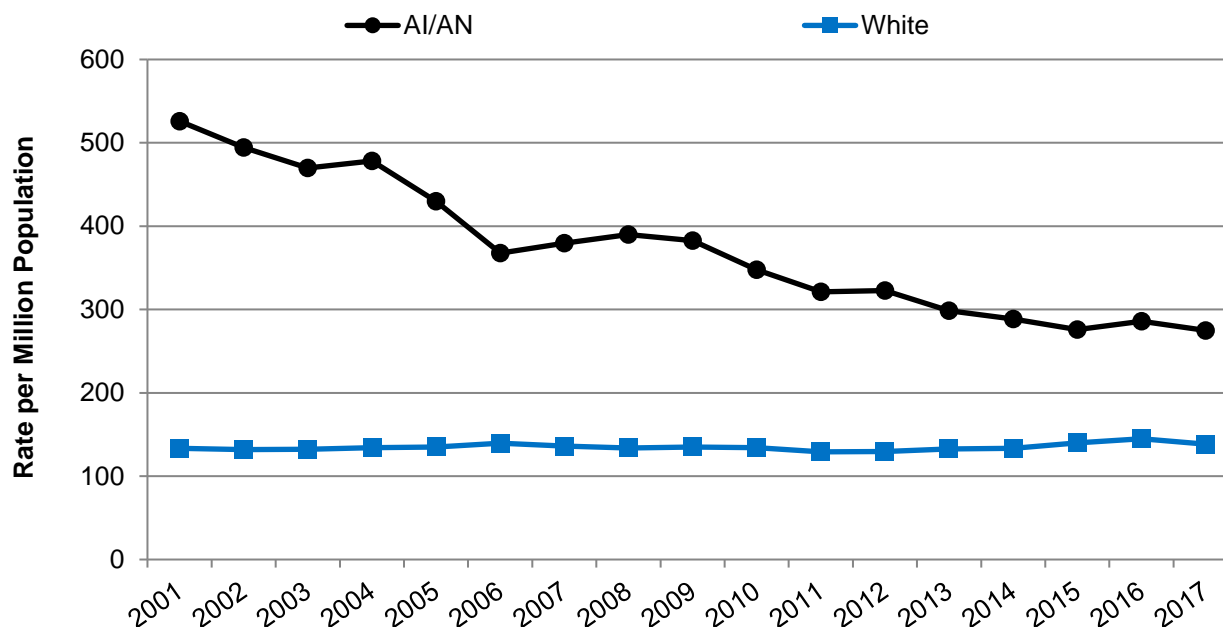
- Disparities between AI/ANs and Whites did not change for most of the quality measures from 2000 through 2018. Of 34 quality measures with a disparity at baseline, 32 (94%) were not changing (Figure 25).
- Only two measures showed narrowing disparities: Adjusted incident rates of end stage renal disease (ESRD) due to diabetes per million population and children ages 2-17 for whom a health provider gave advice within the past 2 years about healthy eating.^{iv}
- No affordable care measures were available with data for AI/ANs.

^{iv} Chart not shown for children ages 2-17 for whom a health provider gave advice within the past 2 years about healthy eating because Data for AI/AN do not meet the criteria for statistical reliability, data quality or confidentiality for data years 2004, 2004, 2005, 2006, 2007, 2010, 2011, 2012, 2014, 2016 and 2017.

End Stage Renal Disease Due to Diabetes

Diabetes is the leading cause of kidney disease in the United States. According to the National Institute of Diabetes and Digestive and Kidney Diseases, Whites experience diabetes and kidney disease at a lower rate than other racial and ethnic groups.^{35,36}

Figure 26. Adjusted incident rates of end stage renal disease due to diabetes per million population, 2001-2017



Source: National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, United States Renal Data System, 2001-2017.

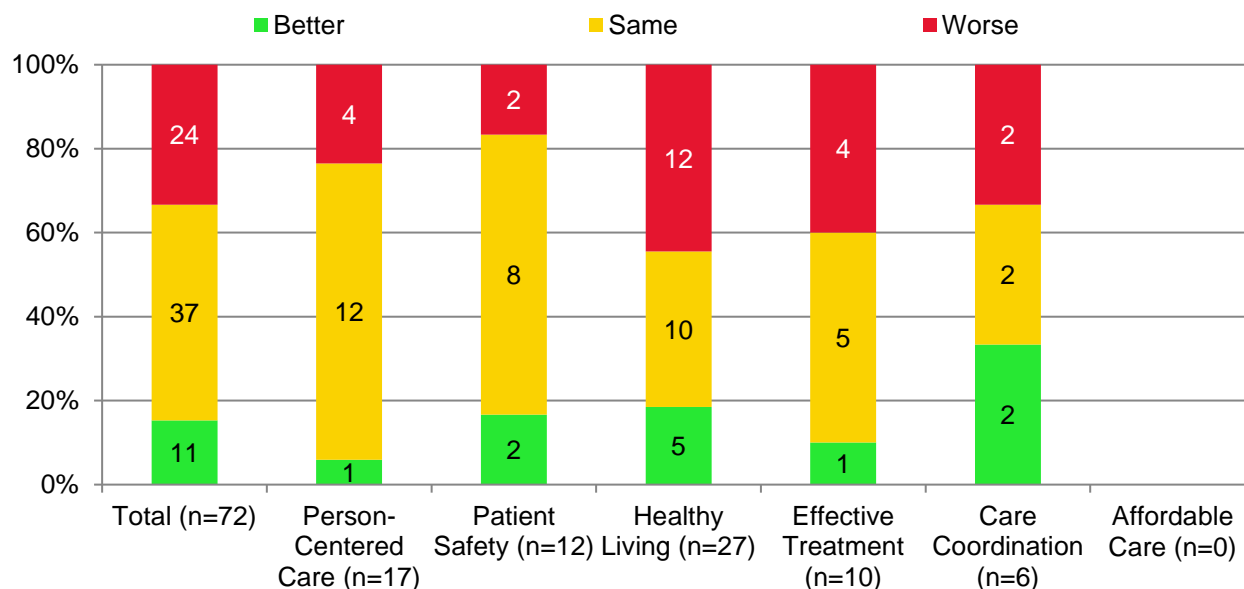
Note: For this measure, lower rates are better.

- From 2001 to 2017, the disparity between AI/ANs and Whites decreased for the adjusted incident rate of ESRD due to diabetes. For AI/ANs, the rate decreased from 526 per million population to 274.9 per million, and for Whites, there were no statistically significant changes (from 133.3 per million to 138.4 per million; Figure 26).
- Disparities have been persistent, with AI/ANs having higher incident rates of ESRD due to diabetes than Whites in all years.

Disparities for Native Hawaiians and Pacific Islanders

More than 40% of Healthy Living measures for Native Hawaiians and Pacific Islanders showed worse performance compared with Whites.

Figure 27. Number and percentage of quality measures for which Native Hawaiians/Pacific Islanders experienced better, same, or worse quality of care compared with reference group (White) for the most recent data year, 2016, 2017, or 2018



Key: n = number of measures.

Note: The difference between two groups is meaningful only if the absolute difference between the two groups is statistically significant with a p-value <0.05 on a two-tailed test **and** the relative difference between the two groups is at least 10%. The most recent data years are used for this analysis. Different data sources have different data years for most recent data year. For example, the most recent data year from the Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base (NCDB) is 2016 and from the Home Health Consumer Assessment of Healthcare Providers and Systems (CMS HHCAHPS) is 2018.

- Data for the most recent year show that Native Hawaiians/Pacific Islanders (NHPs) experienced worse quality care compared with Whites on one-third of all quality measures. Quality was better for NHPs than for Whites on 15% of all quality measures (Figure 27).
- No Affordable Care measures with data for NHPs were available.

Largest Disparities

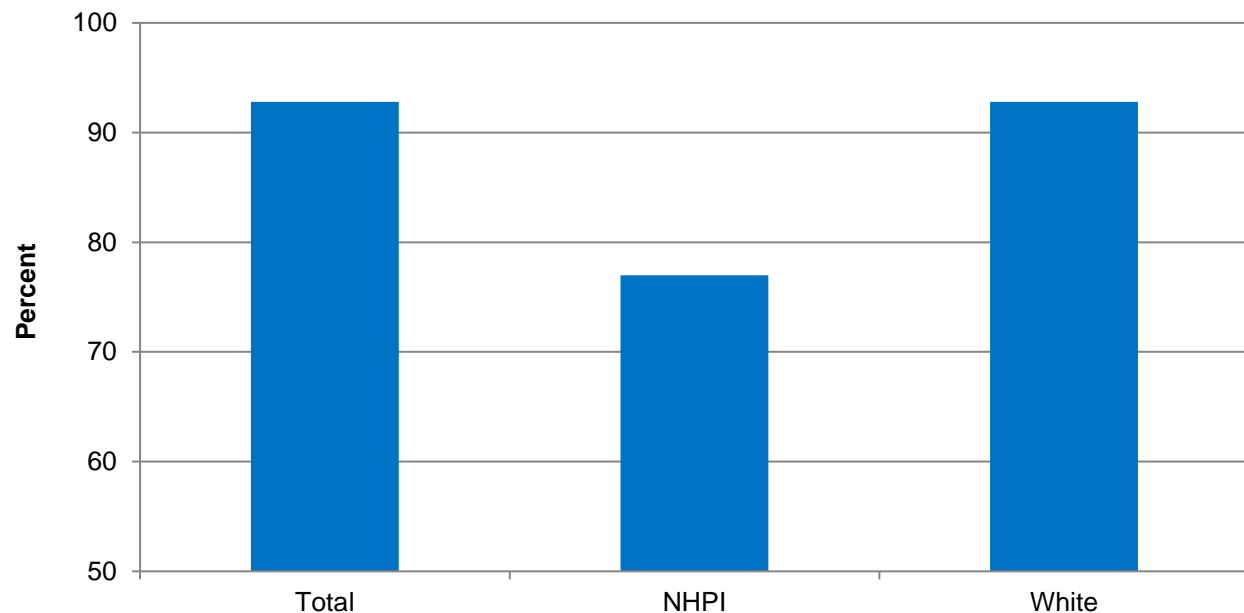
The measures with the largest disparities for NHPs include:

- Adults who received a blood pressure measurement in the last 2 years and can state whether their blood pressure was normal or high.
- Hospital patients who received influenza vaccination.
- Adults who reported that home health providers always treated them with courtesy and respect in the last 2 months of care.

Blood Pressure Measurement

In the United States, hypertension accounted for more cardiovascular (CVD) deaths than any other modifiable CVD risk factor and was second only to cigarette smoking as a preventable cause of death for any reason.³⁷ According to CDC, one-third of adults in the United States have hypertension, but about 20% of adults with hypertension do not know they have it.

Figure 28. Adults who received a blood pressure measurement in the last 2 years and can state whether their blood pressure was normal or high, 2017



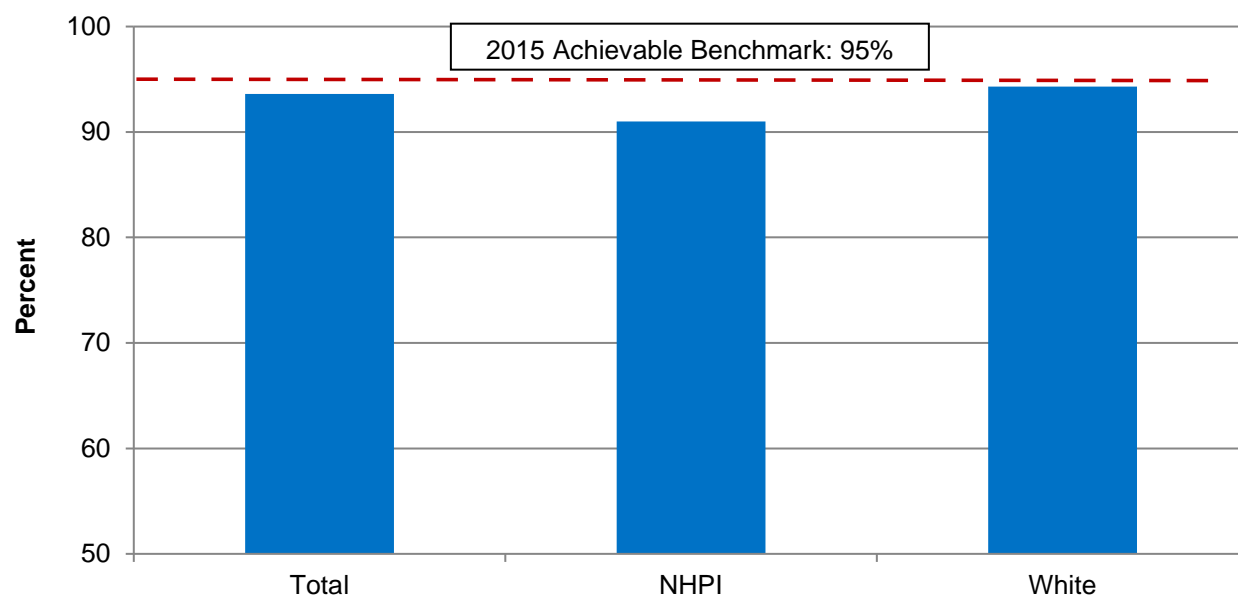
Key: NHPI = Native Hawaiian or Pacific Islander

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2017.

- In 2017, the percentage of adults who received a blood pressure measurement in the last 2 years and can state whether their blood pressure was normal or high was lower for NHPIs (77.0%) than for Whites (92.8%) (Figure 28).

Treatment by Home Health Providers

Figure 29. Adults who reported that home health providers always treated them with courtesy and respect in the last 2 months of care, 2018

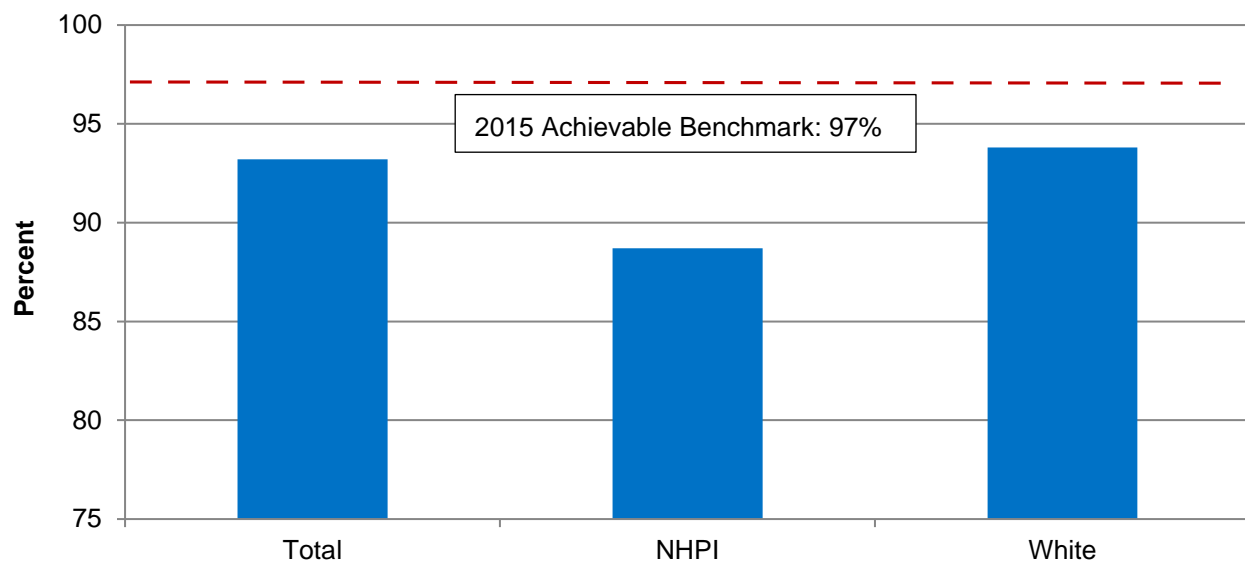


Source: Agency for Healthcare Research and Quality, Home Health Consumer Assessment of Healthcare Providers and Systems, 2018.

- In 2018, the percentage of adults who reported that home health providers always treated them with courtesy and respect in the last 2 months was lower for NHPIs (91.0%) compared with Whites (94.3%) (Figure 29).
- The 2015 achievable benchmark was 95%. Overall, there was no progress toward the benchmark.
- The top 10% of states and territories that reached the benchmark are Alabama, Guam, Louisiana, Mississippi, Rhode Island, South Carolina, and West Virginia (more than 5 states reached the benchmark due to ties).

Influenza Vaccination

According to CDC, annual vaccination is the most important measure to prevent seasonal influenza infection. Achieving high influenza vaccination rates of healthcare personnel and patients is a critical step in preventing transmission of influenza from healthcare personnel to patients and from patients to healthcare personnel. According to current national guidelines, unless contraindicated, all people age 6 months and older should be vaccinated, including healthcare personnel, patients, and residents of long-term care facilities.³⁸

Figure 30. Hospital patients who received influenza vaccination, 2017

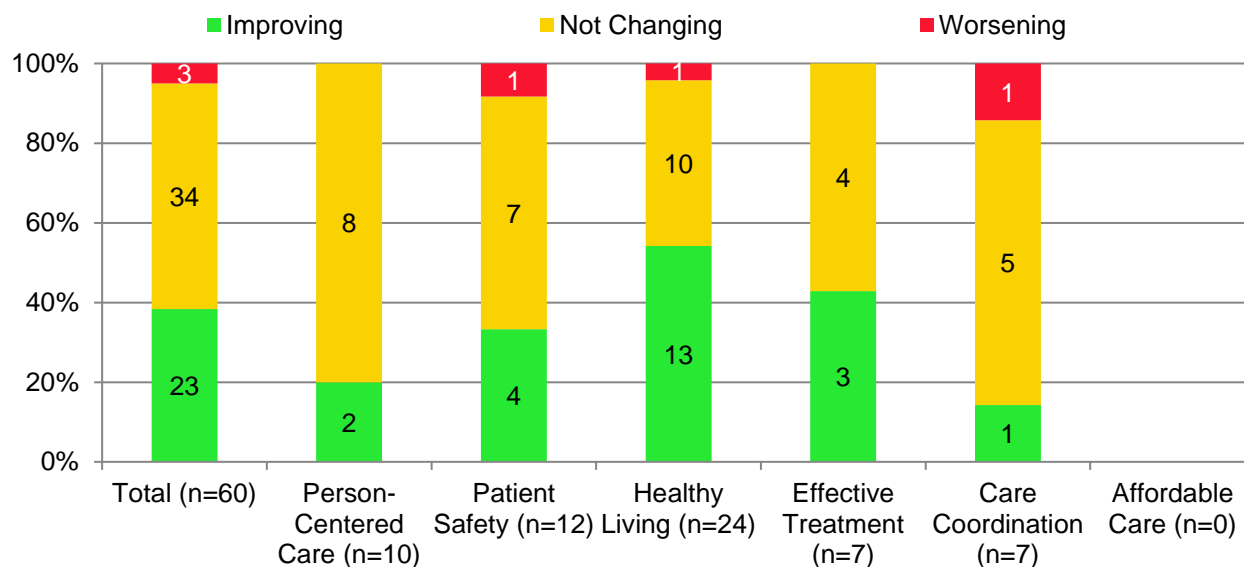
Source: Centers for Medicare & Medicaid Services, Clinical Data Warehouse for Hospital Inpatient Quality Reporting Program, 2017.

- In 2017, NHPI hospital patients were less likely than White patients to receive influenza vaccination (Figure 30).
- The 2015 achievable benchmark was 97%. Overall, there was no progress toward the benchmark (trend data not shown).
- The top 10% of states and territories that reached the benchmark are Florida, Indiana, Maryland, North Carolina, and South Carolina.

Trends in Quality of Care for Native Hawaiians/Pacific Islanders

Nearly 40% of quality measures for NHPs showed improvement.

Figure 31. Number and percentage of all quality measures that were improving, not changing, or worsening over time, total and by priority area, from 2001 through 2012, 2015, 2016, 2017, or 2018



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percent change and to assess statistical significance. Progress on individual measures is determined as follows:

- **Improving:** The average annual percent change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing:** The average annual percent change is $\leq 1\%$ in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening:** The average annual percent change is 1% or greater in the undesirable direction, and $p < 0.10$.

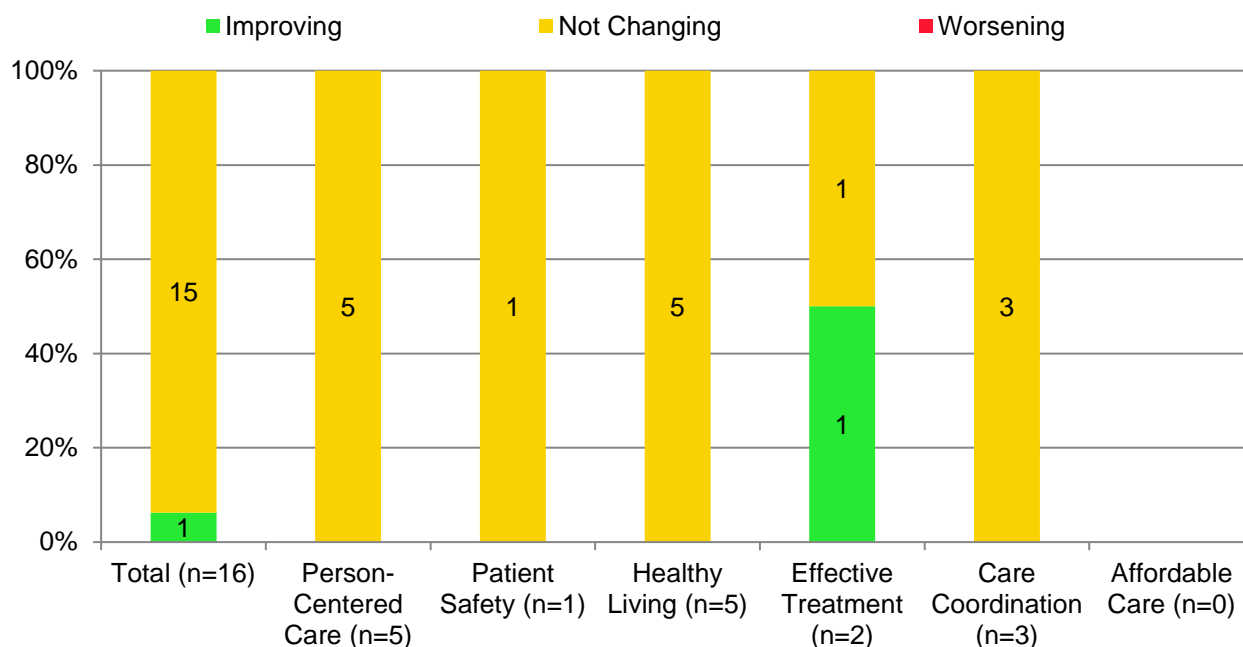
Different data sources have different data years. For example, the most recent data year available for trending from the National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Centers for Medicare & Medicaid Services, Hospital Consumer Assessment of Healthcare Providers and Systems (CMS HCAHPS) is 2018.

- Among the 60 quality measures with data for NHPs, 23 (38%) were improving, 34 (57%) were not changing, and 3 (5%) were getting worse from 2001 through 2018 (Figure 31).^v
- No Affordable Care measures with data for NHPs were available.

^v Due to a change in the Healthcare Cost and Utilization Project (HCUP) data, the same measures reported in past reports are not represented in this report. HCUP converted all measures from International Classification of Diseases, Ninth Revision (ICD-9) to Tenth Revision (ICD-10) codes, thus changing the outcomes of these measures. Therefore, trend data are not available at this time.

Changes in Disparities for Native Hawaiians/Pacific Islanders

Figure 32. Number and percentage of all quality measures with disparity at baseline for which disparities related to race and ethnicity were improving, not changing, or worsening over time, total and by priority area, from 2008 through 2016, 2017, or 2018



Key: n = number of measures.

Note: Different data sources have different data years. For example, the most recent data year available for trending from the Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (CDC NCHHSTP) is 2016 and from the Centers for Medicare & Medicaid Services, Home Health Consumer Assessment of Healthcare Providers and Systems (CMS HHCAHPS) is 2018.

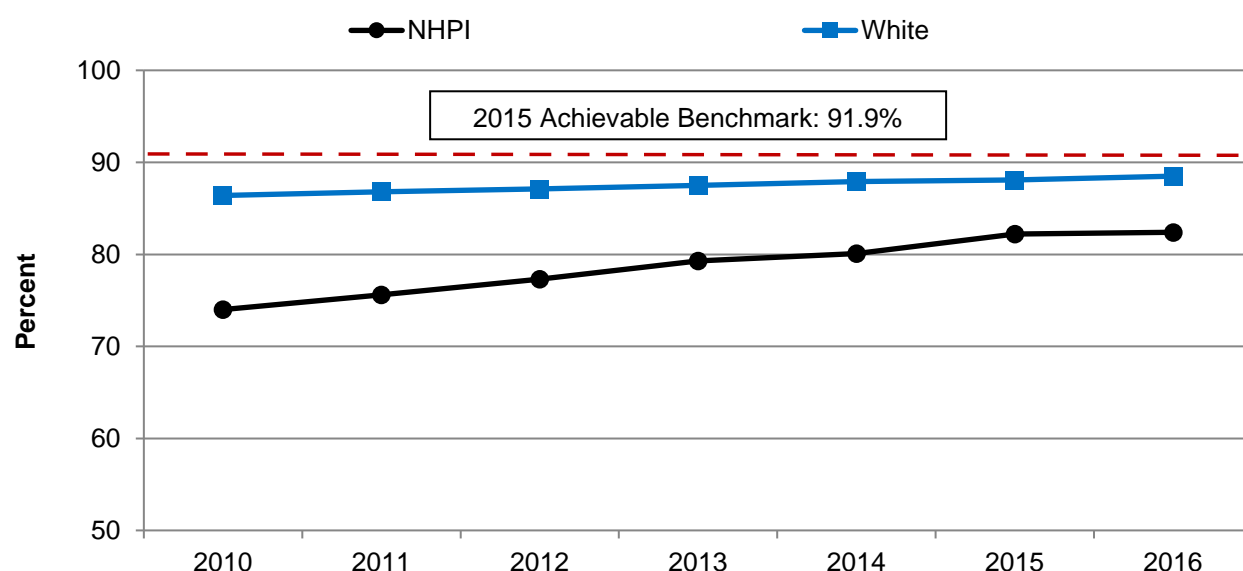
- Disparities between NHPs and Whites did not change for most of the quality measures from 2008 through 2018. Of the 16 quality measures with a disparity at baseline, disparities were not changing for 15 measures (94%) (Figure 32).
- No measures showed widening disparities, and only one measure showed a narrowing disparity: People age 13 and over living with HIV who know their serostatus.
- No Affordable Care measures were available with data for NHPs.

Knowledge of HIV Serostatus

It is important for everyone to know his or her HIV status. Getting an HIV test is the first step for people living with HIV to get care and treatment and control the infection. Taking HIV medicine as prescribed helps people living with HIV to live a long, healthy life and protect their sex partners from HIV. About 85% of people with HIV in the United States know they have the virus. However, 15% (162,500) of people with HIV do not know they have the virus, and about 40% of new HIV infections come from them.

Half of people with HIV had the virus 3 years or more before diagnosis. Most people at high risk who did not get tested last year saw a healthcare provider during the year. Everyone should get tested at least once, and people at high risk should be tested at least once a year. Healthcare providers can diagnose HIV sooner if they test more people and test people at high risk more often.³⁹

Figure 33. People age 13 and over living with HIV who know their serostatus, 2010-2016



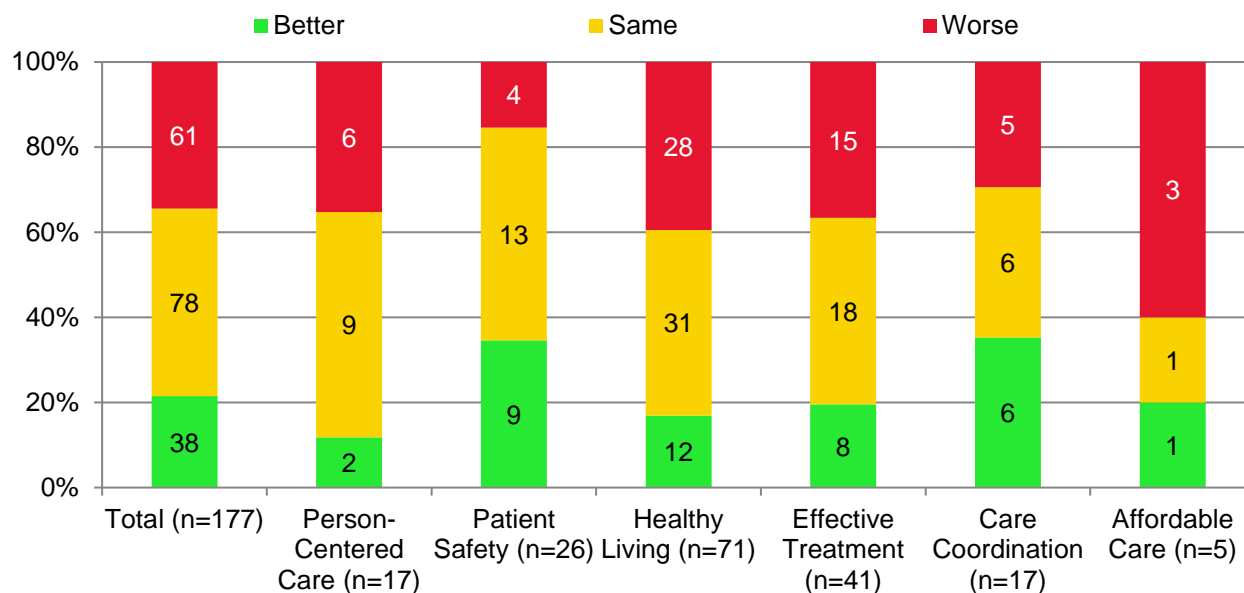
Source: Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, HIV AIDS Surveillance System, 2010-2016.

- Data from 2010 to 2016 show that the disparity between NHPIs and Whites was narrowing due to a larger increase in the percentage of NHPIs (74% to 82.4%) than Whites (86.4% to 88.5%) who are living with HIV and aware of their serostatus (Figure 33).
- The 2015 achievable benchmark was 91.9%. At the current rate of increase, overall, the benchmark could be achieved in 6 years.
- The top 10% of states and territories that reached the benchmark are Idaho, New Jersey, Pennsylvania, South Dakota, and Vermont.

Disparities for Hispanics

Hispanics performed worse than non-Hispanic Whites on about 40% of Effective Treatment and Healthy Living quality measures.

Figure 34. Number and percentage of quality measures for which Hispanics experienced better, same, or worse quality of care compared with reference group (non-Hispanic White) for the most recent data year, 2014, 2016, 2017, or 2018



Key: n = number of measures.

Note: The difference between two groups is meaningful only if the absolute difference between the two groups is statistically significant with a p-value <0.05 on a two-tailed test **and** the relative difference between the two groups is at least 10%. The most recent data years are used for this analysis. Different data sources have different data years for most recent data year. For example, the most recent data year from the National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Agency for Healthcare Research and Quality Healthcare Cost and Utilization Project (AHRQ HCUP) is 2017.

- Data for the most recent year show that quality was worse for Hispanics compared with non-Hispanic Whites for 34% of all quality measures. Quality was better for Hispanics than for non-Hispanic Whites on 21% of all quality measures (Figure 34).

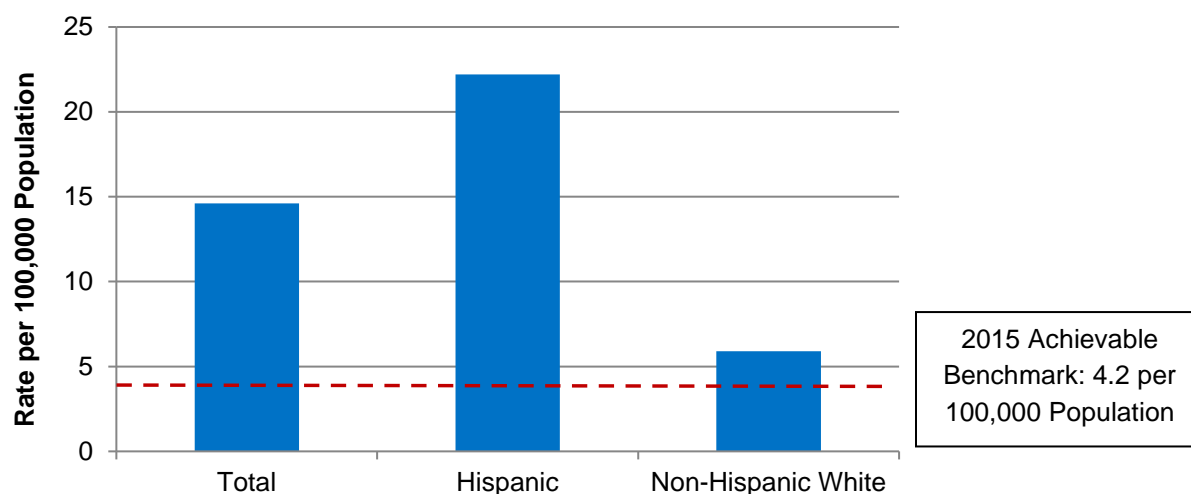
Largest Disparities

The measures with some of the largest disparities for Hispanics include:

- New HIV cases per 100,000 population age 13 and over.
- Home health patients who had influenza vaccination during flu season.
- HIV infection deaths per 100,000 population.

New HIV Cases

From 2012 through 2016, the rate of new HIV cases remained stable for Hispanics. In 2017, Hispanics had the second highest rate of new HIV cases.⁴⁰

Figure 35. New HIV cases per 100,000 population age 13 and over, 2016

Source: Centers for Disease Control and Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, HIV-AIDS Surveillance System, 2016.

Note: For this measure, lower rates are better.

- In 2016, the rate of new HIV cases per 100,000 population age 13 and over was higher for Hispanics (22.2 per 100,000 population) compared with non-Hispanic Whites (5.9 per 100,000 population) (Figure 35).
- The 2015 achievable benchmark was 4.2 per 100,000 population. At the current rate of increase, overall, the benchmark could not be achieved for 26 years.
- The top 10% of states and territories that reached the benchmark are Idaho, Iowa, Maine, West Virginia, and Wisconsin.

Resource

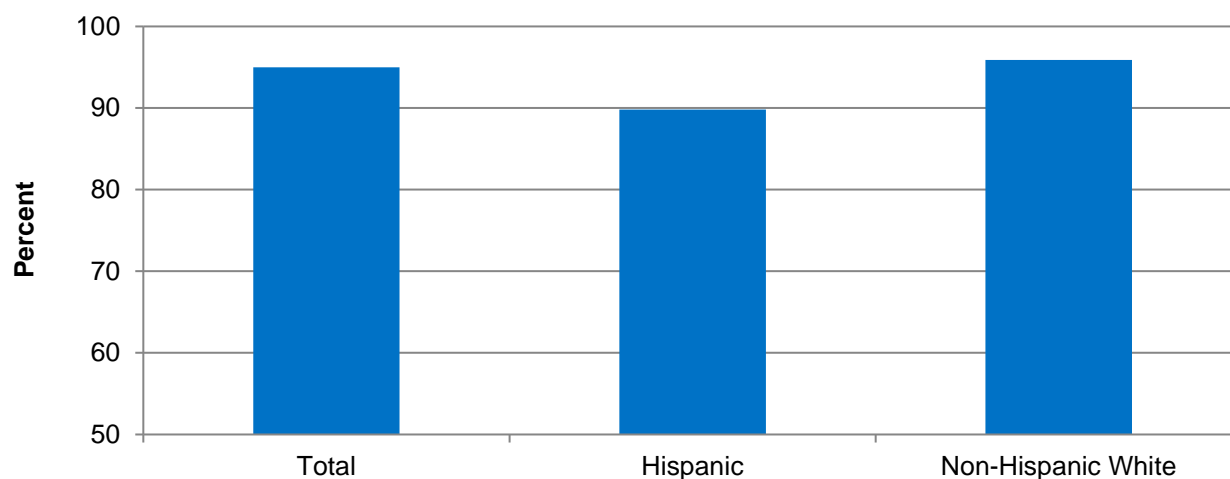
- Federal resources include the ***Let's Stop HIV Together*** campaign (formerly known as *Act Against AIDS*), which has [resources](#) and [partnerships](#) aimed at stopping [HIV stigma](#) and promoting HIV [testing](#), [prevention](#), and [treatment](#). This campaign provides Hispanics/Latinos with culturally and linguistically appropriate messages about HIV testing, prevention, and treatment.
- Federal resources also include [Ending the HIV Epidemic: A Plan for America](#), which aims to end the HIV epidemic in the United States by 2030. The plan leverages critical scientific advances in HIV prevention, diagnosis, treatment, and outbreak response by coordinating the highly successful programs, resources, and infrastructure of many HHS agencies and offices.

Influenza Vaccination

Influenza vaccination is the primary method for preventing the illness and its severe complications, and annual vaccination is recommended for everyone age 6 months and over.⁴¹ All healthcare contacts, including hospitalizations, provide excellent

opportunities for vaccination, particularly for people at the highest risk for complications and death from influenza.

Figure 36. Home health patients who had influenza vaccination during flu season, 2017



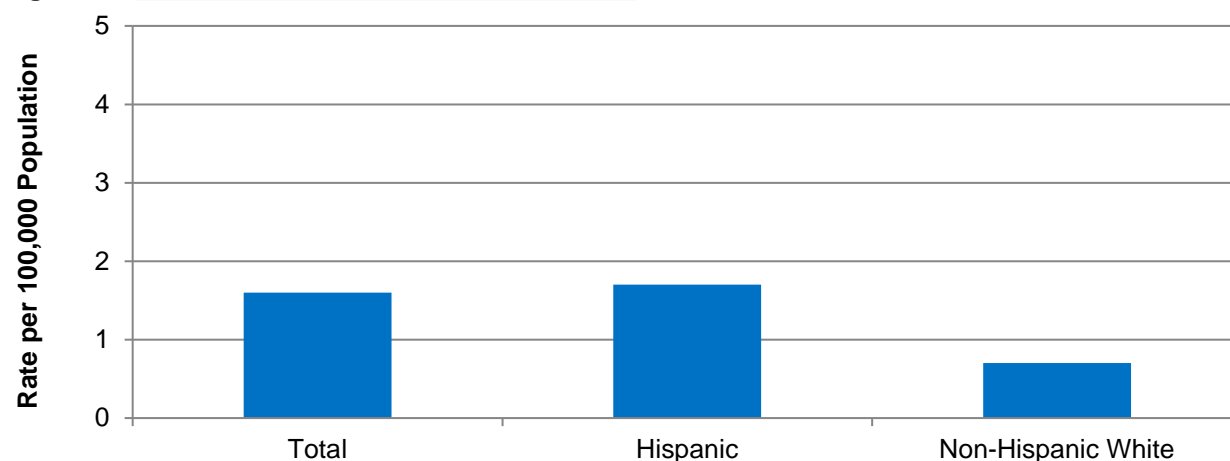
Source: Centers for Medicare & Medicaid Services, Home Health Quality Initiative, Chronic Condition Data Warehouse, Outcome and Assessment Information Set, 2017.

- In 2017, Hispanic home health patients (89.8%) were less likely than non-Hispanic White home health patients (95.9%) to receive an influenza vaccine (Figure 36).

HIV Infection Deaths

HIV infection mortality disproportionately affects some racial and ethnic groups more than others. According to CDC data, the HIV death rate has consistently been higher for Hispanics than for non-Hispanic Whites.⁴⁰ Higher mortality rates may result from a number of factors, including difficulty accessing timely and appropriate care.

Figure 37. HIV infection deaths per 100,000 population, 2017



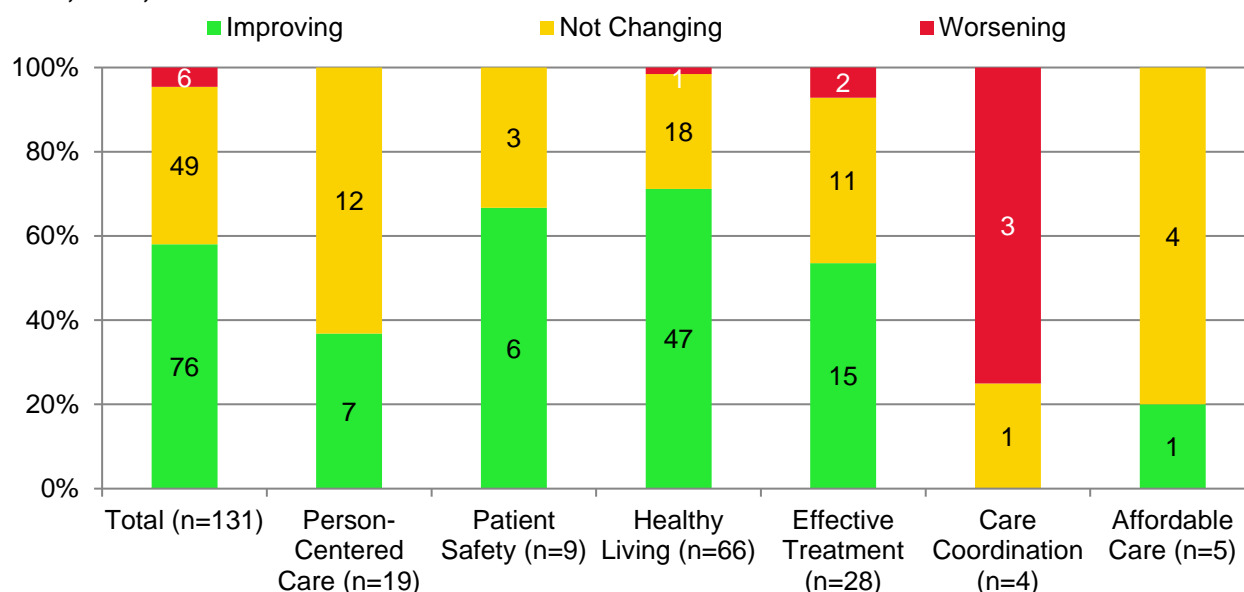
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System - Mortality, 2017.

Note: For this measure, lower rates are better.

- In 2017, the rate of HIV infection deaths was higher for Hispanics (1.7 per 100,000 population) than for non-Hispanic Whites (0.7 per 100,000 population) (Figure 37).

Changes in Quality of Care for Hispanics

Figure 38. Number and percentage of all quality measures that were improving, not changing, or worsening over time, total for Hispanics and by priority area, from 2000 through 2014, 2015, 2016, 2017, or 2018



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percent change and to assess statistical significance. Progress on individual measures is determined as follows:

- **Improving:** The average annual percent change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing:** The average annual percent change is $\leq 1\%$ in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening:** The average annual percent change is 1% or greater in the undesirable direction, and $p < 0.10$.

Different data sources have different data years. For example, the most recent data year available for trending from the National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Centers for Medicare & Medicaid Services, Hospital Consumer Assessment of Healthcare Providers and Systems (CMS HCAHPS) is 2018.

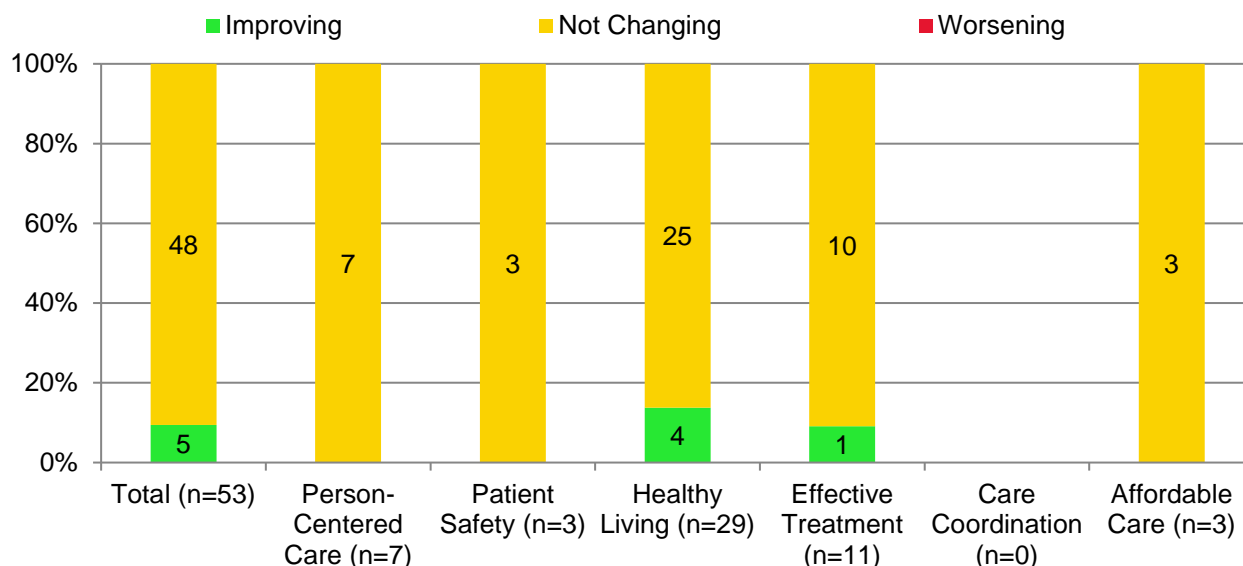
- Of the 131 quality measures with data for Hispanics, 58% were improving, 37% were not changing, and 5% were getting worse from 2000 through 2018 (Figure 38).^{vi}
- Hispanics were improving for about two-thirds of Healthy Living and Patient Safety measures.

^{vi} Due to a change in the Healthcare Cost and Utilization Project (HCUP) data, the same measures reported in past reports are not represented in this report. HCUP converted all measures from International Classification of Diseases, Ninth Revision (ICD-9) to Tenth Revision (ICD-10) codes, thus changing the outcomes of these measures. Therefore, trend data are not available at this time.

- No care coordination measures were improving and 3 of the 4 measures showed a worsening trend.

Changes in Disparities for Hispanics

Figure 39. Number and percentage of all quality measures with disparity at baseline for which disparities related to race and ethnicity were improving, not changing, or worsening over time, total and by priority area, from 2000 through 2014, 2015, 2016, 2017, or 2018



Key: n = number of measures.

Note: Different data sources have different data years. For example, the most recent data year available for trending from the National Institute of Diabetes and Digestive and Kidney Diseases United States Renal Data System (NIDDK USRDS) is 2014 and from the Centers for Medicare & Medicaid Services, Hospital Consumer Assessment of Healthcare Providers and Systems (CMS HCAHPS) is 2018.

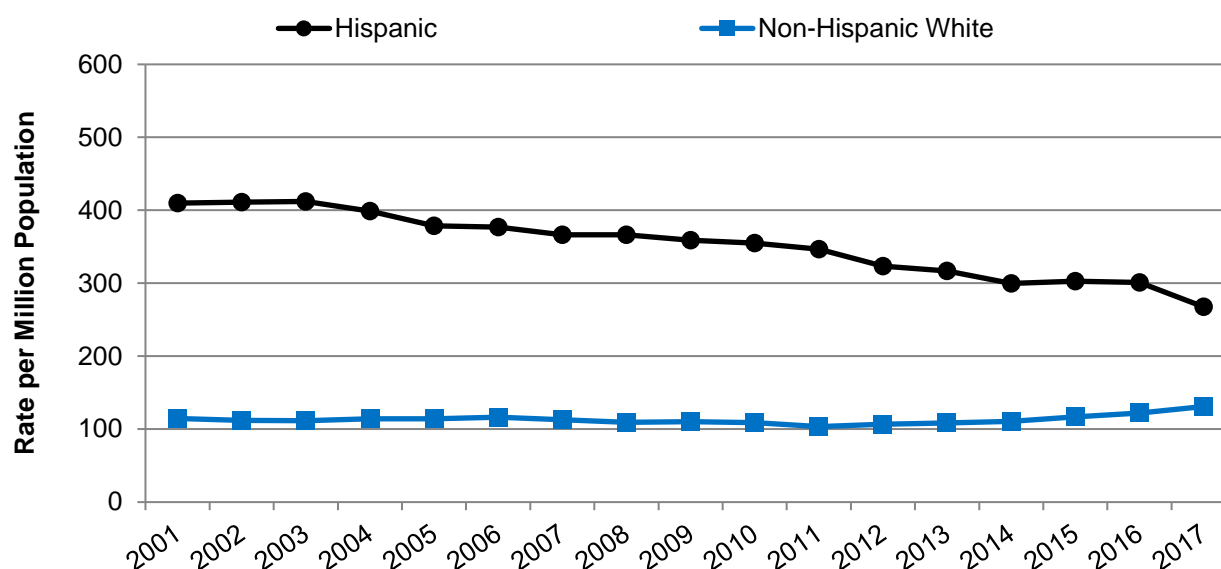
- Of the 53 quality measures with a disparity at baseline, disparities between Hispanics and non-Hispanic Whites did not change for 48 (91%) from 2000 through 2018 (Figure 39).
- Five measures showed narrowing disparities—one Effective Treatment measure and four Healthy Living measures.
- The measure that showed the most improvement is an Effective Treatment measure: Adjusted incident rates of end stage renal disease (ESRD) due to diabetes per million population. The other improving measures are:
 - Children ages 2-17 who had a preventive dental service in the calendar year,
 - Children ages 2-17 who had a dental visit in the calendar year,
 - Adults with obesity who ever received advice from a health professional about eating fewer high-fat or high-cholesterol foods, and
 - Home health patients whose shortness of breath decreased.

- No measure showed widening disparities between Hispanics and non-Hispanic Whites.
- No Care Coordination measures with data for Hispanics were available.

End Stage Renal Disease

Diabetes is the leading cause of kidney disease in the United States. According to the National Institute of Diabetes and Digestive and Kidney Diseases, non-Hispanic Whites experience diabetes and kidney disease at a lower rate than other racial and ethnic groups.⁴²

Figure 40. Adjusted incident rates of end stage renal disease due to diabetes per million population, 2001-2017



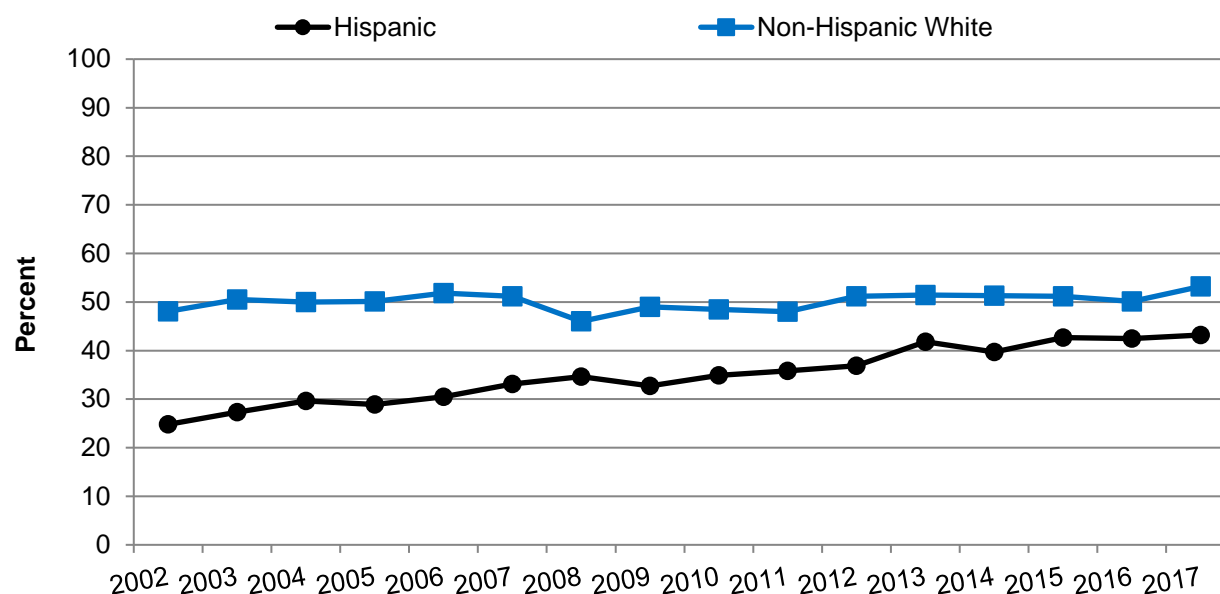
Source: National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, United States Renal Data System, 2001-2017.

Note: For this measure, lower rates are better.

- Data from 2001 to 2017 show that the disparity between Hispanics and non-Hispanic Whites was narrowing (Figure 40).
- Rates of ESRD due to diabetes decreased for Hispanics, from 410.0 per million population to 276.6 per million population.
- Disparities have been persistent, with Hispanics having higher incident rates of ESRD due to diabetes than Whites in all years.

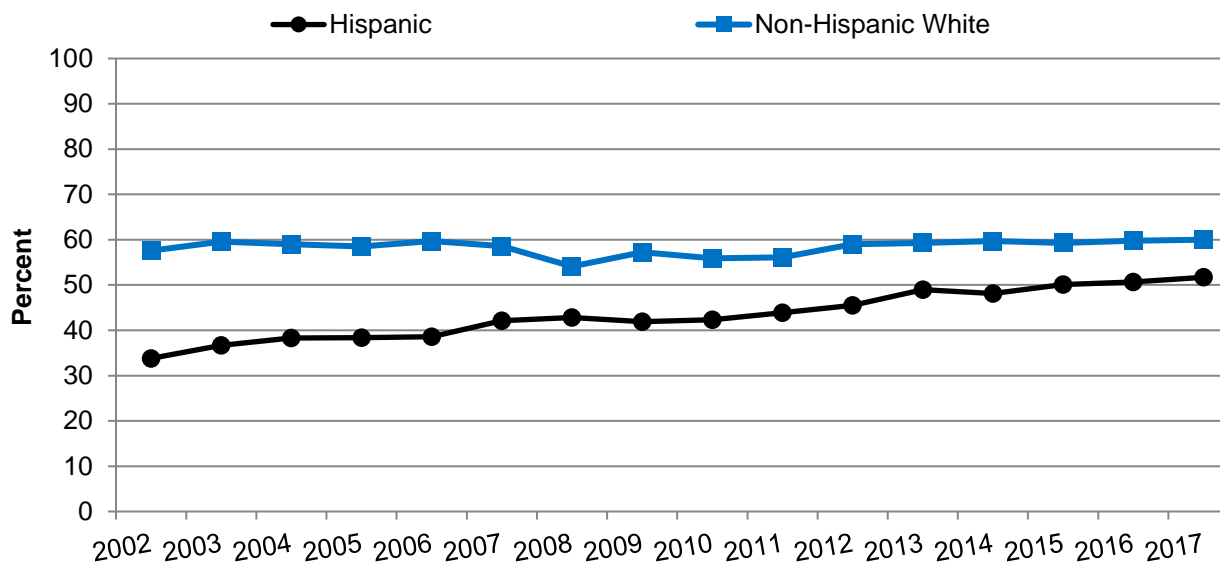
Pediatric Dental Care

Access to oral health care is essential to promoting and maintaining overall health and well-being, yet only half of the population visits a dentist each year. Poor and minority children are less likely to have access to oral health care than are their nonpoor and nonminority peers.⁴³

Figure 41. Children ages 2-17 who had a preventive dental service in the calendar year, 2002-2017

Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

- Data from 2002 to 2017 show that the disparity between Hispanics and non-Hispanic Whites was narrowing over time. Hispanics showed improvement (24.8% to 43.2%) but the percentage was still higher for Whites even though they had no statistically significant changes over time (48.1% to 53.2%) (Figure 41).
- Disparities have been persistent, with Hispanics less likely than non-Hispanic Whites to receive preventive dental services in all 16 years where data were available.

Figure 42. Children ages 2-17 who had a dental visit in the calendar year, 2002-2017

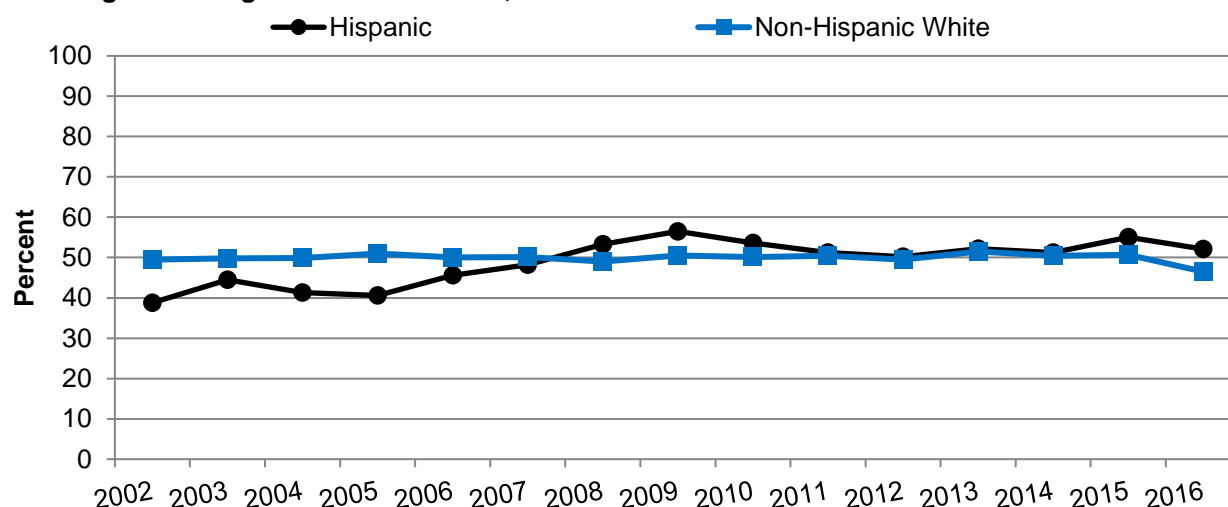
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

- Data from 2002 to 2017 show that the disparity between Hispanics and non-Hispanic Whites was narrowing. Hispanics showed improvement (33.8% to 51.7%), but the percentage was still higher for Whites even though they had no statistically significant changes over time (57.6% to 60.0%) (Figure 42).
- Disparities have been persistent, with Hispanics less likely than non-Hispanic Whites to have a dental visit in all 16 years where data were available.

Obesity

The prevalence of obesity is continuing to rise in the United States. More than one-third of adults are overweight or affected by obesity.⁴⁴

Figure 43. Adults with obesity who ever received advice from a health professional about eating fewer high-fat or high-cholesterol foods, 2002-2016



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2016.

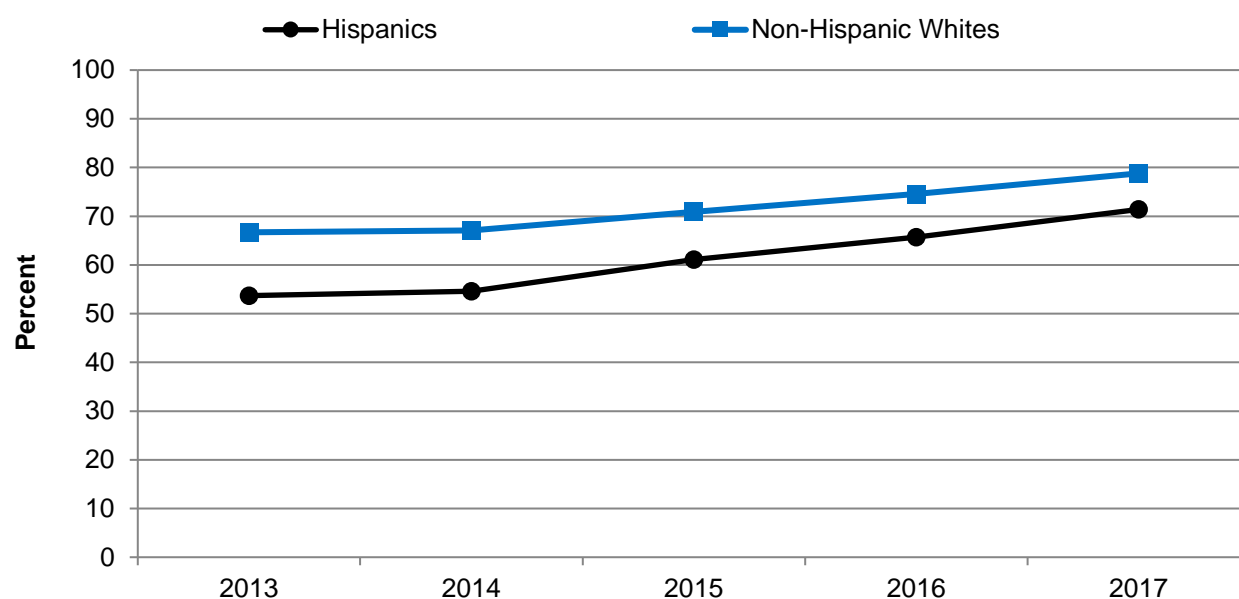
- Data from 2002 to 2016 show that the disparity between Hispanics and non-Hispanic Whites was narrowing; however, Hispanics showed improvement (38.8% to 52.1%), while Whites showed declining performance (49.5% to 46.6%) (Figure 43).
- In 2016, Hispanics with obesity were more likely than non-Hispanics with obesity to receive advice from a health professional about eating fewer high-fat or high-cholesterol foods (52.1% vs. 46.5%).

The National Institutes of Diabetes and Digestive and Kidney Diseases has outlined several strategies for healthcare providers to use to speak with their patients in a respectful manner about healthy eating habits.⁴⁵

Improved Breathing Among Home Health Care Patients

Shortness of breath is uncomfortable. Many patients with heart or lung problems experience difficulty breathing and may tire easily or be unable to perform daily activities. Doctors and home health staff should monitor shortness of breath and may give advice, therapy, medication, or oxygen to help lessen this symptom.

Figure 44. Home health care patients whose shortness of breath decreased, 2013-2017



Source: Centers for Medicare & Medicaid Services, Home Health Quality Initiative, Chronic Condition Data Warehouse, Outcome and Assessment Information Set, 2013-2017.

- From 2013 to 2017, the disparity between Hispanics and non-Hispanic Whites was narrowing for home health care patients whose shortness of breath decreased.
- Both Hispanics (53.7% to 71.4%) and Non-Hispanic Whites (66.7% to 78.8%) showed improvement over time (Figure 44).

Disparities by Income

The NHQDR tracks disparities data for income and insurance categories. 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 issued annually in the *Federal Register* by the Department of Health and Human Services, Assistant Secretary for Planning and Evaluation. The guidelines vary by family size and there are different family income criteria for the

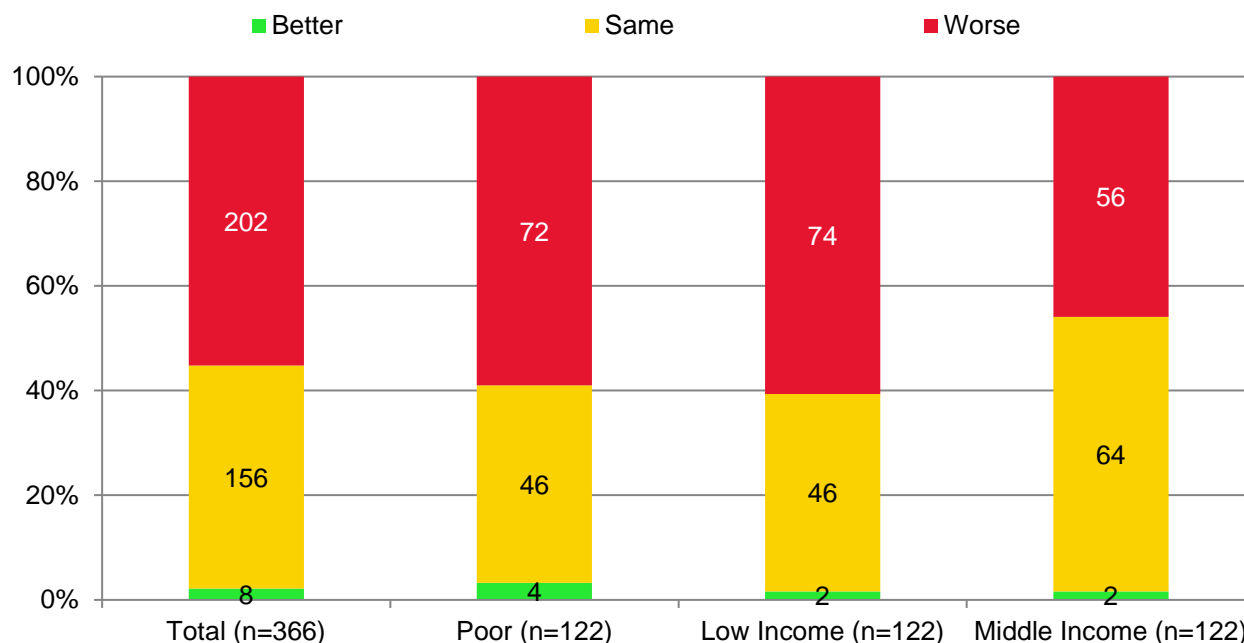
contiguous 48 states, Alaska, and Hawaii. Criteria for U.S. territories are unavailable.⁴⁶ For HCUP measures, income is based on median income of the patient's ZIP Code and is divided into quartiles.

The relationship between income and healthcare outcomes has been studied for many years, and researchers have shown the positive relationship between more income and better health outcomes.^{47,48,49,50} Income is not the same as wealth, which can include assets other than income. Wealth is disproportionately dispersed among higher income categories, and research also shows a positive association between greater wealth and better health outcomes.⁴⁷

This section shows quality measures with the largest income disparities and trends in disparities.

High-income groups performed better than other income groups on more than half of all quality measures.

Figure 45. Number and percentage of quality measures for which income groups experienced better, same, or worse quality of care compared with reference group (high income) for the most recent data year, 2016, 2017, or 2018



Key: n = number of measures.

Note: The most recent data years are used for this analysis. Different data sources have different data years for most recent data year. For example, the most recent data year from the Agency for Healthcare Research and Quality Healthcare Cost and Utilization Project (AHRQ HCUP) is 2016 and from the Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey (CDC NHIS) is 2018.

- Data for the most recent year show that high-income groups performed better than other income groups on 55% of all quality measures (Figure 45).
- Performance was worse for poor and low-income groups compared with high-income groups on about 60% of the measures. Compared with high-income groups, middle-income groups performed worse on 46% of the measures.

Largest Disparities

**The measure with the largest income disparities is
“People without a usual source of care who indicated a
financial or insurance reason for not having a source of care.”**

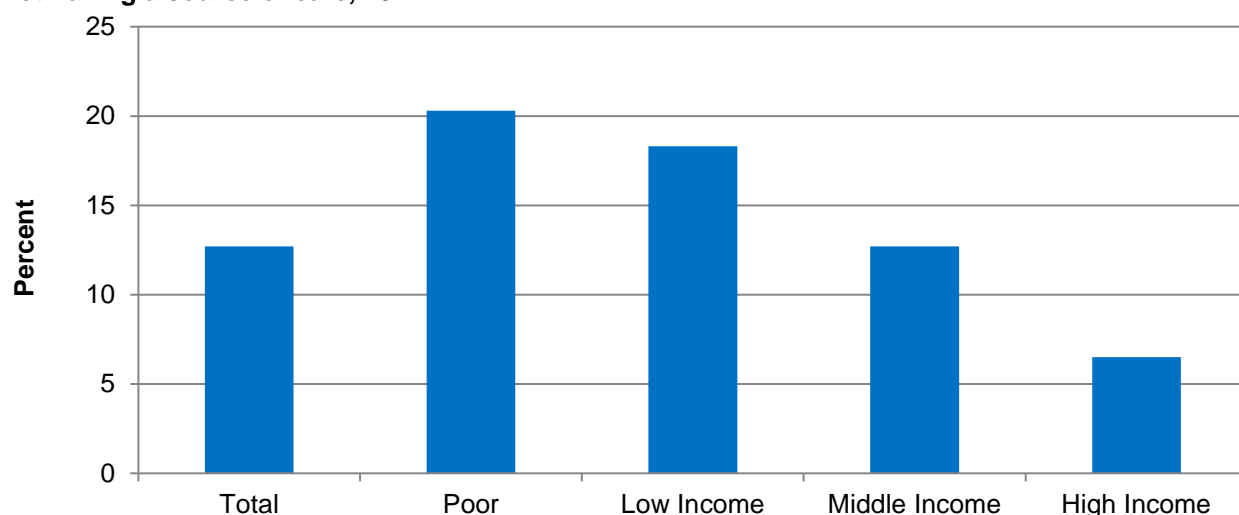
Measures with the largest disparities for each income group include:

- People without a usual source of care who indicated a financial or insurance reason for not having a source of care (all income groups).
- People under age 65 whose family’s health insurance premium and out-of-pocket medical expenditures were more than 10% of total family income (low income, middle income).
- Children who had their height and weight measured by a health provider within the past 2 years (middle income).
- Children ages 19-35 months who received 3 or more doses of polio vaccine (low income).
- Emergency department encounters for asthma, children ages 2-17 (lowest income group).
- Hospital admissions for short-term complications of diabetes per 100,000 population, adults (lowest income group).

Difficulty Accessing a Usual Source of Care

People with lower incomes may experience difficulty accessing affordable care and are less likely to have a usual source of care that is readily accessible.⁵¹ People who are unwell and have low incomes are also more likely to experience poverty.⁷

Figure 46. People without a usual source of care who indicated a financial or insurance reason for not having a source of care, 2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

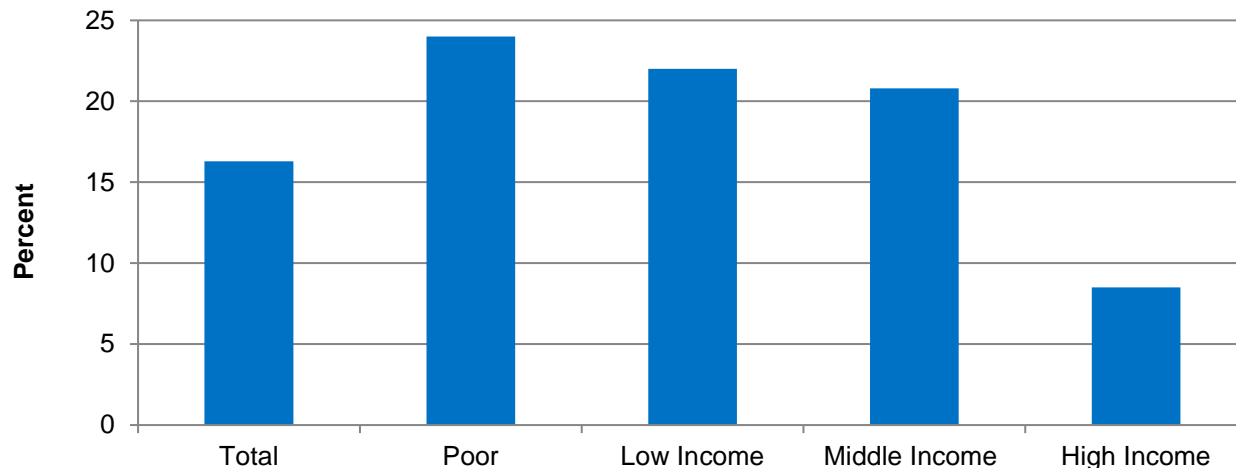
Note: For this measure, lower rates are better.

- In 2017, the measure with the largest income disparities was people without a usual source of care who indicated a financial or insurance reason for not having a source of care (Figure 46).
- In 2017, the percentage of people without a usual source of care who indicated a financial or insurance reason for not having a source of care was higher for poor, low-income, and middle-income people compared with high-income people (20.3%, 18.3%, and 12.7%, respectively, vs. 6.5%).

High Family Medical Expenditures

The most prominent barriers to health coverage include affordability, eligibility for public coverage in a person's state, immigration status, and lack of familiarity with sign-up procedures.⁵² Poor health may require a family to spend more on healthcare, resulting in less income. Costs will vary based on each person or family's needs and may inhibit a family's ability to reach other goals.⁷

Figure 47. People under age 65 whose family's health insurance premium and out-of-pocket medical expenditures were more than 10% of total family income, 2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

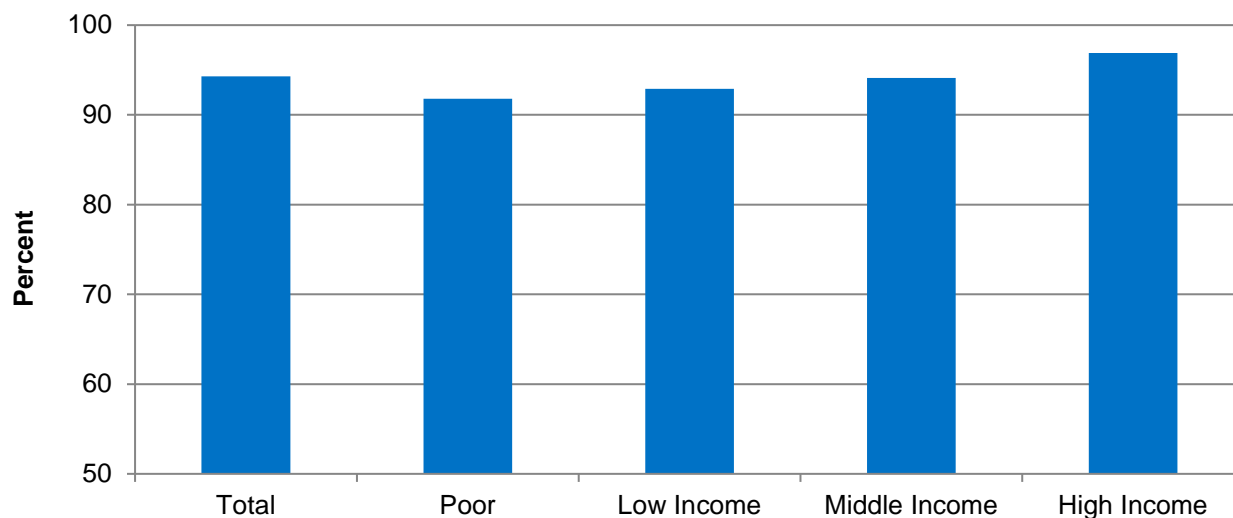
Note: For this measure, lower rates are better.

- In 2017, the percentage of people under age 65 whose family's health insurance premium and out-of-pocket medical expenditures were more than 10% of total family income was higher for poor (24.0%), low-income (22.0%), and middle-income people (20.8%) than high-income people (8.5%) (Figure 47).

Height and Weight Check

Body mass index (BMI) is a person's weight in kilograms divided by the square of height in meters. For children and teens, BMI is age and sex specific and is often referred to as BMI-for-age. In children, a high amount of body fat can lead to weight-related diseases and other health issues and being underweight can also put one at risk for health issues.⁵³

Figure 48. Children who had their height and weight measured by a health provider within the past 2 years, 2017



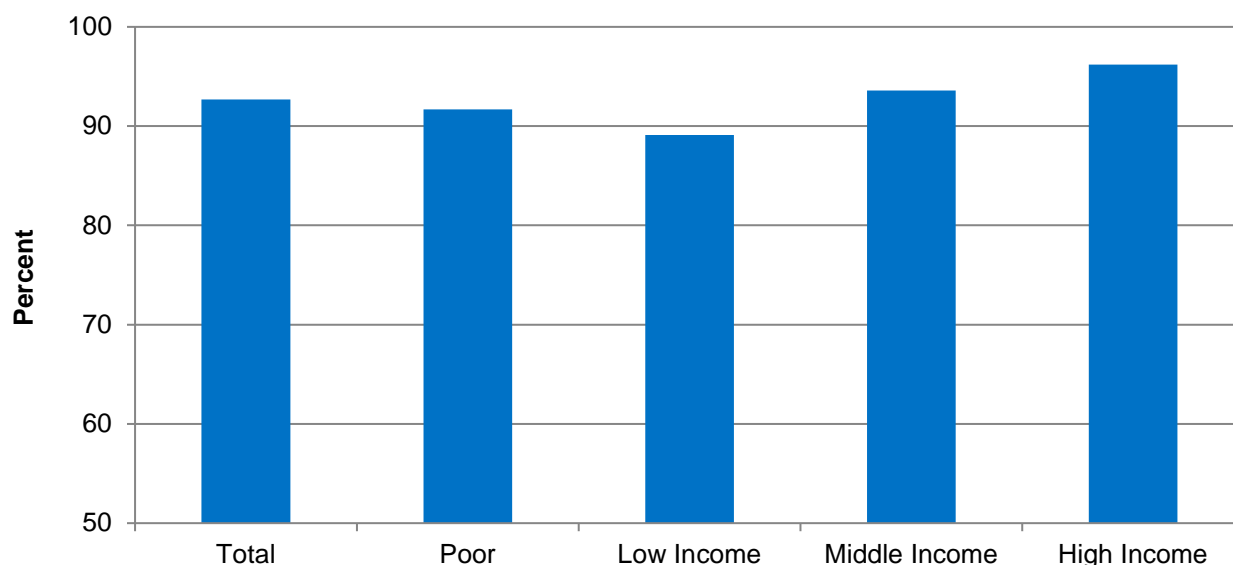
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

- In 2017, the percentage of children who had their height and weight measured by a health provider within the past 2 years was lower for middle-income children (94.1%) than high-income children (96.9%) (Figure 48).

Childhood Vaccinations

Polio, or poliomyelitis, is a debilitating and potentially deadly disease. The polio virus spreads from person to person and can invade an infected person's brain and spinal cord, causing paralysis. Polio can be prevented with a vaccine. Ninety nine percent of children who get all the recommended doses of polio vaccine will be protected from polio.⁵⁴

Figure 49. Children ages 19-35 months who received 3 or more doses of polio vaccine, 2017



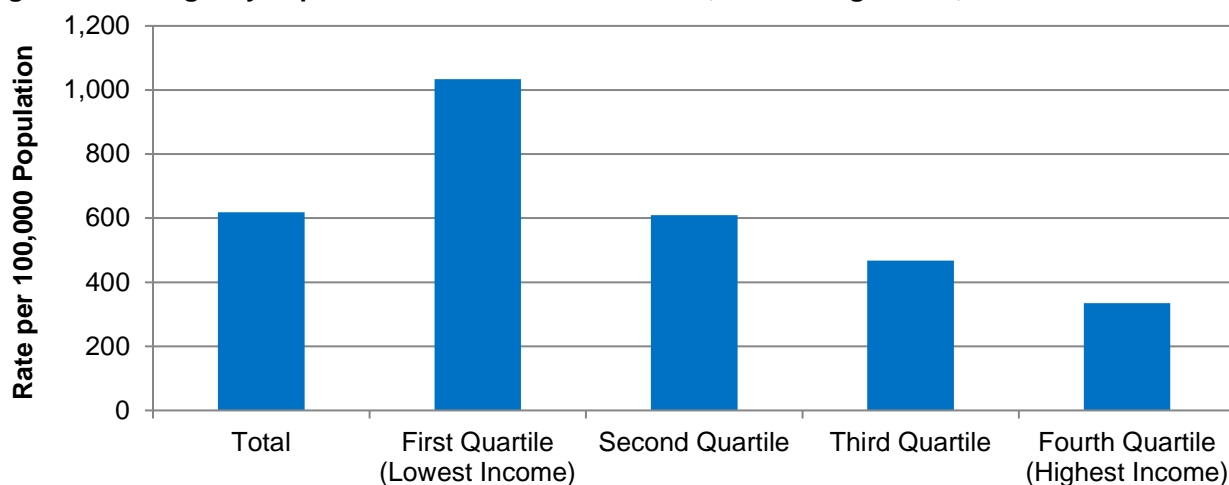
Source: Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases, National Immunization Survey - Child, 2017.

- In 2017, the percentage of children ages 19-35 months who received 3 or more doses of polio vaccine was lower for low-income children (89.1%) compared with high-income children (96.2%) (Figure 49).

Emergency Department Visits for Asthma

According to CDC, 1 in 12 or about 6 million children in the United States ages 0-17 years have asthma; about 16% of Black children and 7% of White children have asthma.¹⁷ Learning to control asthma with an asthma action plan can prevent asthma attacks or at least make them less severe.

More than half of children with asthma had one or more attacks in 2016. Every year, 1 in 6 children with asthma visits the emergency department, with about 1 in 20 children with asthma hospitalized for asthma.⁵⁵

Figure 50. Emergency department encounters for asthma, children ages 2-17, 2017

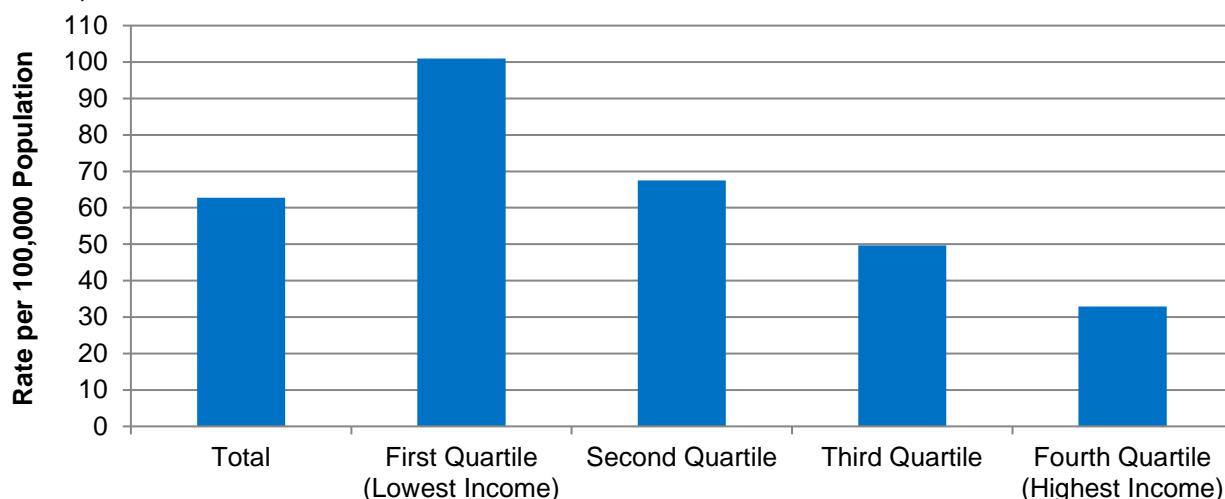
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2017.

Note: For this measure, lower rates are better.

- In 2017, the rate of emergency department encounters for asthma was higher for children from the lowest income group (1,034 per 100,000 population) than for children from the highest income group (335 per 100,000 population) (Figure 50).

Hospital Admissions for Diabetes Complications

More than 100 million people living in the United States have diabetes or are at risk for diabetes.⁵⁶ Compared with other countries, the rate of hospital admissions for short-term complications of diabetes is higher in the United States.⁵⁷ Such complications may be related to kidney disease, hypertension, vision problems, pain, or other problems.

Figure 51. Hospital admissions for short-term complications of diabetes per 100,000 population, adults, 2017

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, 2017.

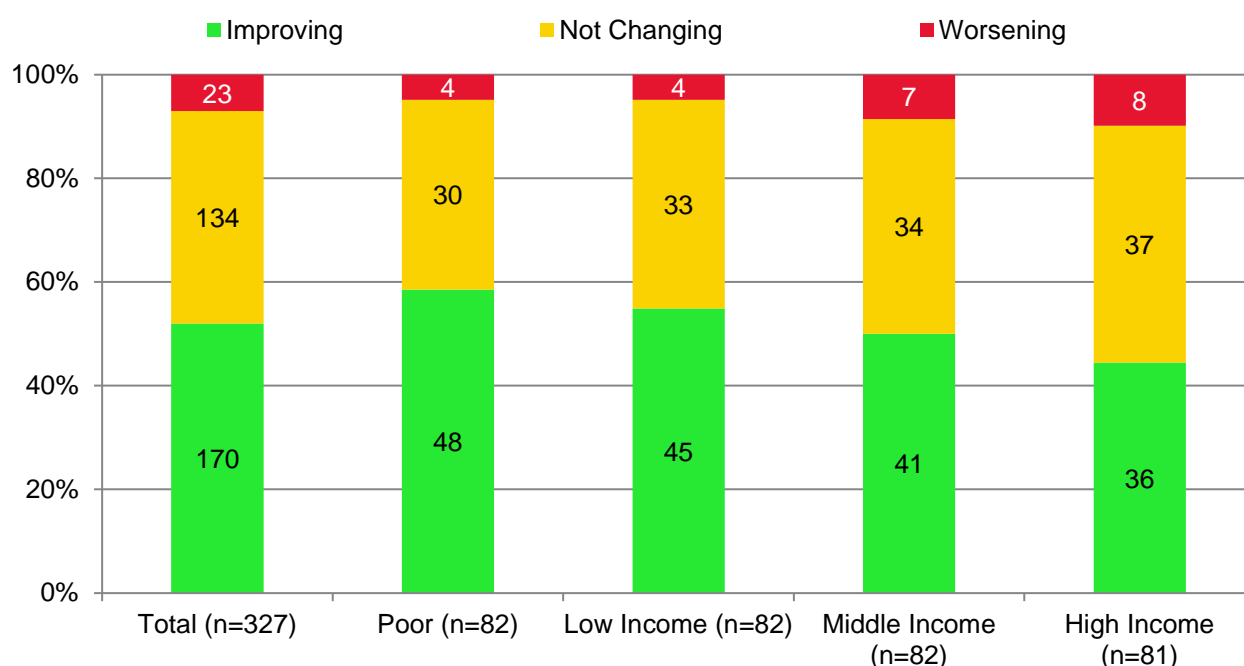
Note: For this measure, lower rates are better.

- In 2017, the rate of hospital admissions for short-term complications of diabetes was three times as high for adults in the lowest income group (101.0 per 100,000 population) compared with adults in the highest income group (32.9 per 100,000 population) (Figure 51).

Trends in Quality of Care for Income Groups

Poor people and low-income people had a higher percentage of improving measures and a lower percentage of worsening measures compared with high-income people.

Figure 52. Number and percentage of all quality measures that were improving, not changing, or worsening over time, total and by income group, from 2000 through 2015, 2016, 2017, or 2018



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percent change and to assess statistical significance. Progress on individual measures is determined as follows:

- **Improving:** The average annual percentage change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing:** The average annual percentage change is $\leq 1\%$ in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening:** The average annual percentage change is 1% or greater in the undesirable direction, and $p < 0.10$.

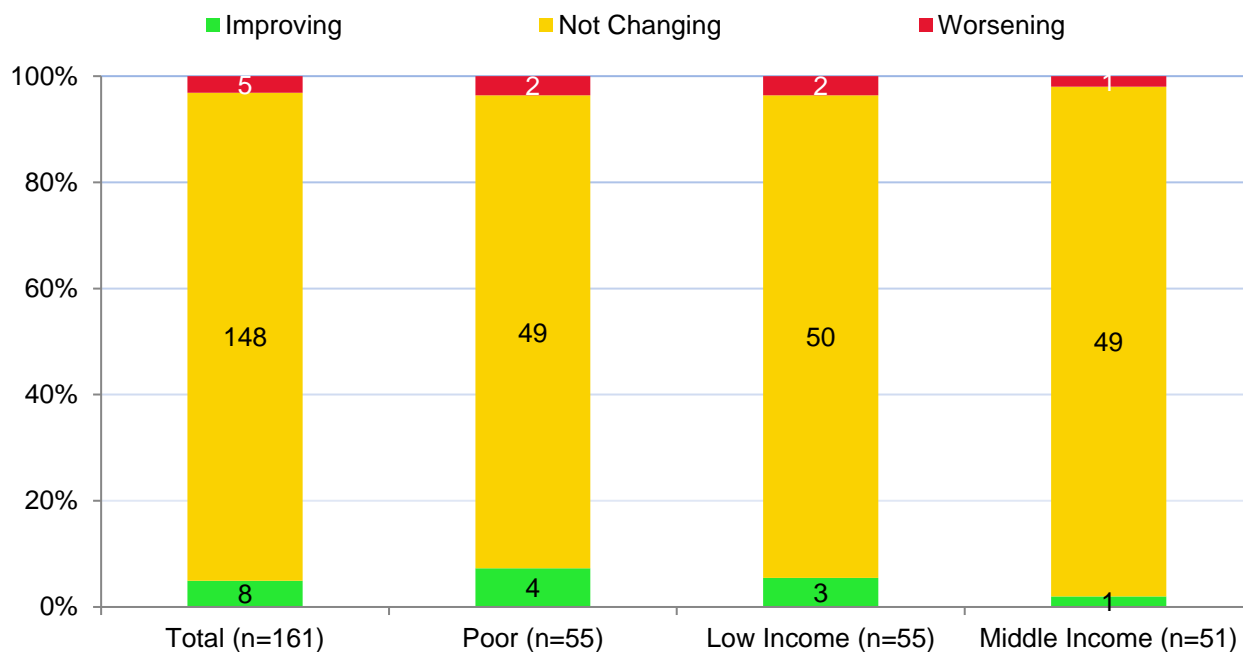
Different data sources have different data years. For example, the most recent data year available for trending from the Medical Expenditure Panel Survey (AHRQ MEPS) is 2015 and from the Centers for Disease Control and Prevention National Health Interview Survey (CDC NHIS) is 2018.

- The percentage of measures that showed improvement was 59% for poor people, 55% for low-income people, 50% for middle-income people, and 44% for high-income people (Figure 52).

Changes in Income Disparities

Most disparities by income showed no statistically significant changes over time.

Figure 53. Number and percentage of quality measures with disparity at baseline for which disparities related to income were improving, not changing, or worsening over time, 2000 through 2015, 2016, 2017, or 2018



Key: n = number of measures.

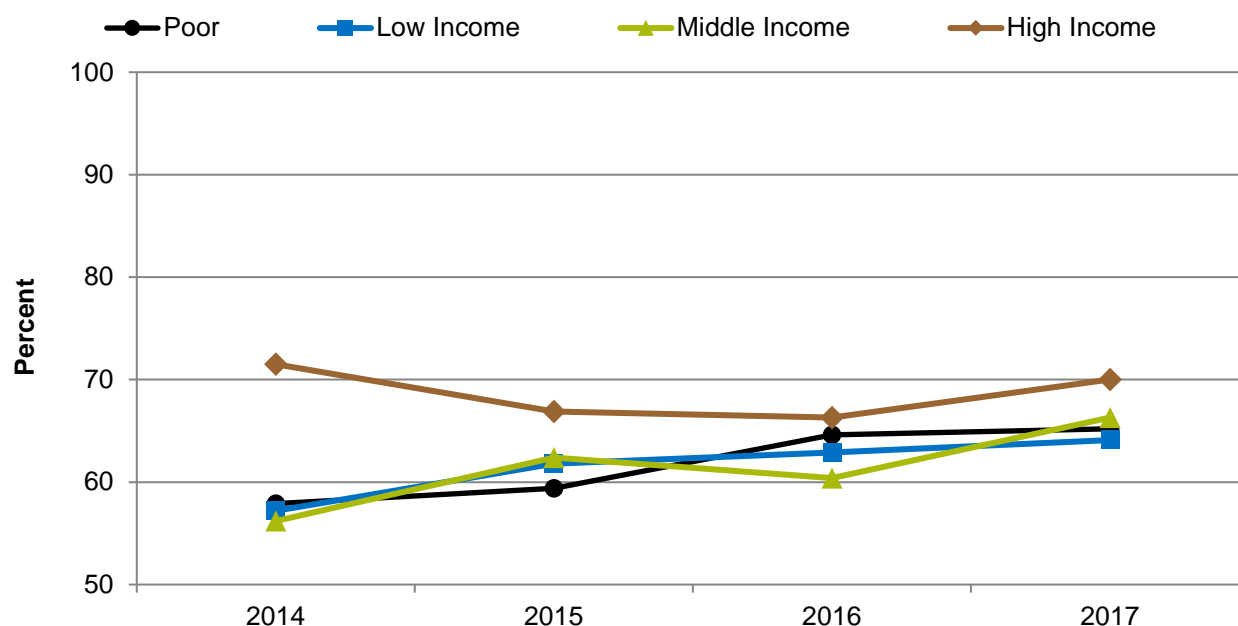
Note: Different data sources have different data years. For example, the most recent data year available for trending from the Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base (NCDB) is 2016 and from the Centers for Disease Control and Prevention, National Health Interview Survey (CDC NHIS) is 2018.

- Disparities by income were unchanged for about 90% of quality measures (Figure 53).
- Only 8 measures showed narrowing disparities and 5 measures showed widening disparities.
- Measures that showed improvements in disparities include:
 - Adults with limited English proficiency who had a usual source of care (poor, low income, middle income).
 - Adolescents ages 16-17 who received 1 or more doses of meningococcal conjugate vaccine (low income).

- People unable to get or delayed in getting needed medical care due to financial or insurance reasons (poor).
- People unable to get or delayed in getting needed dental care due to financial or insurance reasons (poor).
- Children ages 2-17 who had a preventive dental service in the calendar year (low income).

According to the Migration Policy Institute, in 2015, an estimated 25.9 million individuals living in the United States reported having limited English proficiency.⁵⁸ LEP patients are at a higher risk for adverse events than English-speaking patients. Language barriers significantly affect safe and effective healthcare.⁵⁹ Income differences also can play a role for this population.

Figure 54. Adults with limited English proficiency who had a usual source of care, by income, 2014-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2014-2017.

- From 2014 to 2017, the percentage of poor adults with limited English proficiency who had a usual source of care increased from 57.9% to 65.2% (Figure 54).
- From 2014 to 2017, the percentage of low-income adults with limited English proficiency who had a usual source of care increased from 57.2% to 64.1%.
- Data from 2014 to 2017 show that disparities between high-income and poor people were narrowing over time.

Adolescent Vaccination

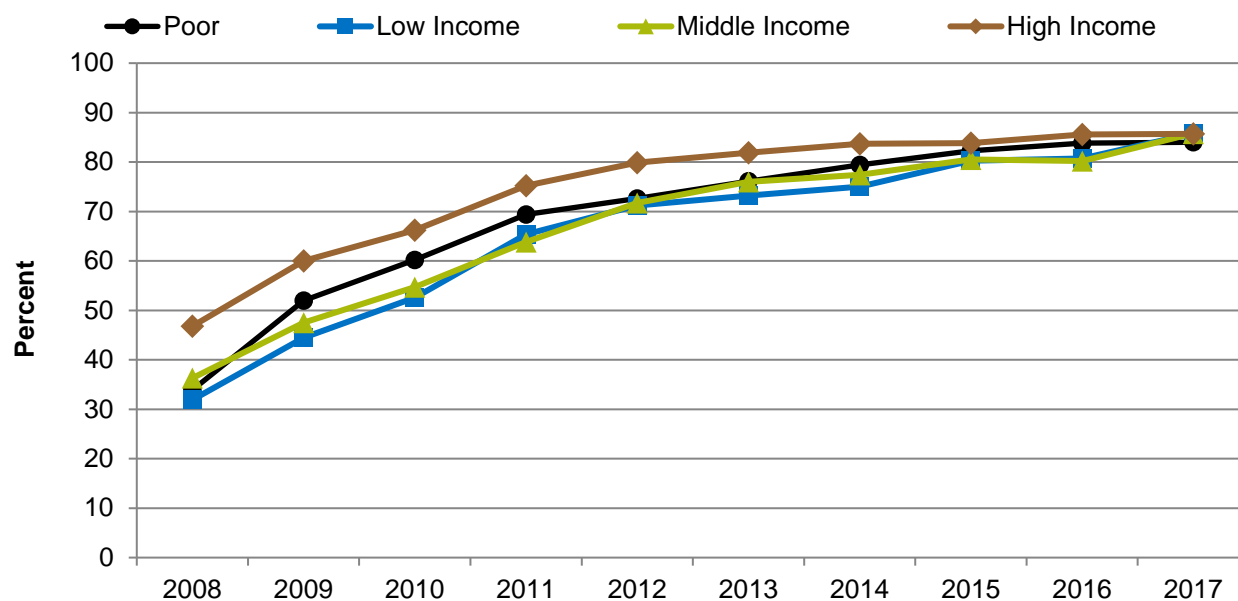
Meningococcal disease refers to any illness caused by bacteria called *Neisseria meningitidis*, also known as meningococcus. These illnesses are often severe and can be deadly. They include infections of the lining of the brain and spinal cord (meningitis) and bloodstream infections (bacteremia or septicemia).⁶⁰

Vaccines can help prevent meningococcal disease, which is any type of illness caused by *Neisseria meningitidis* bacteria. Two types of meningococcal vaccines are available in the United States:

- Meningococcal conjugate or MenACWY vaccines, which help protect against four types of the bacteria that cause meningococcal disease (serogroups A, C, W, and Y).
- Serogroup B meningococcal or MenB vaccines, which help protect against serogroup B meningococcal disease.

All children ages 11 to 12 years old should get a meningococcal conjugate vaccine, with a booster dose at 16 years old.⁶¹

Figure 55. Adolescents ages 16-17 who received 1 or more doses of meningococcal conjugate vaccine, 2008-2017



Source: Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases, National Immunization Survey-Teen, 2008-2017.

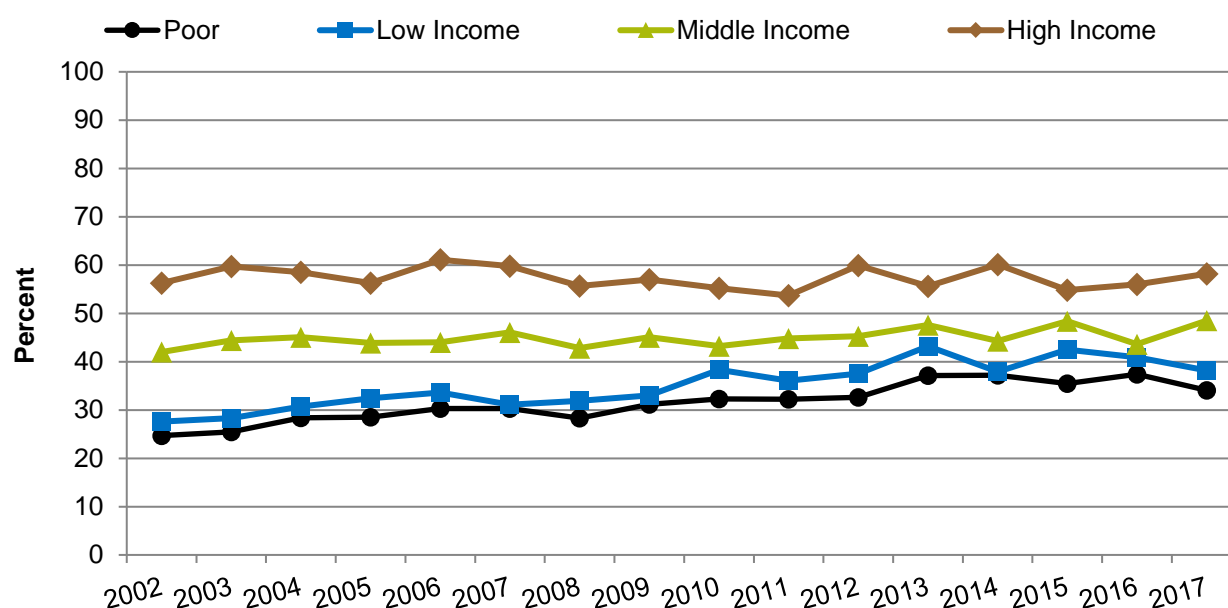
- In 2008, 31.9% of low-income adolescents ages 16-17 received 1 or more doses of meningococcal conjugate vaccine, and by 2017, the percentage had increased to 85.8% (Figure 55).

- From 2008 to 2017, the percentage of high-income adolescents who received 1 or more doses of meningococcal conjugate vaccine increased from 46.8% to 85.7%.
- Data from 2008 to 2017 show that disparities between high-income and poor adolescents were narrowing over time and both populations were improving.

Children Who Had a Preventive Dental Service

Preventive oral health care, early detection, and management of caries is critical to improving the oral health of children and adolescents but preventive oral health services are lagging among young children and children from lower socioeconomic backgrounds.⁶²

Figure 56. Children ages 2-17 who had a preventive dental service in the calendar year, 2002-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

- In 2002, 27.6% of children in low-income households had preventive dental appointments and the percentage increased to 38.2% in 2017 (Figure 56).
- Data from 2002 to 2017 show that the disparities between high-income and low-income children were narrowing over time.

Resources

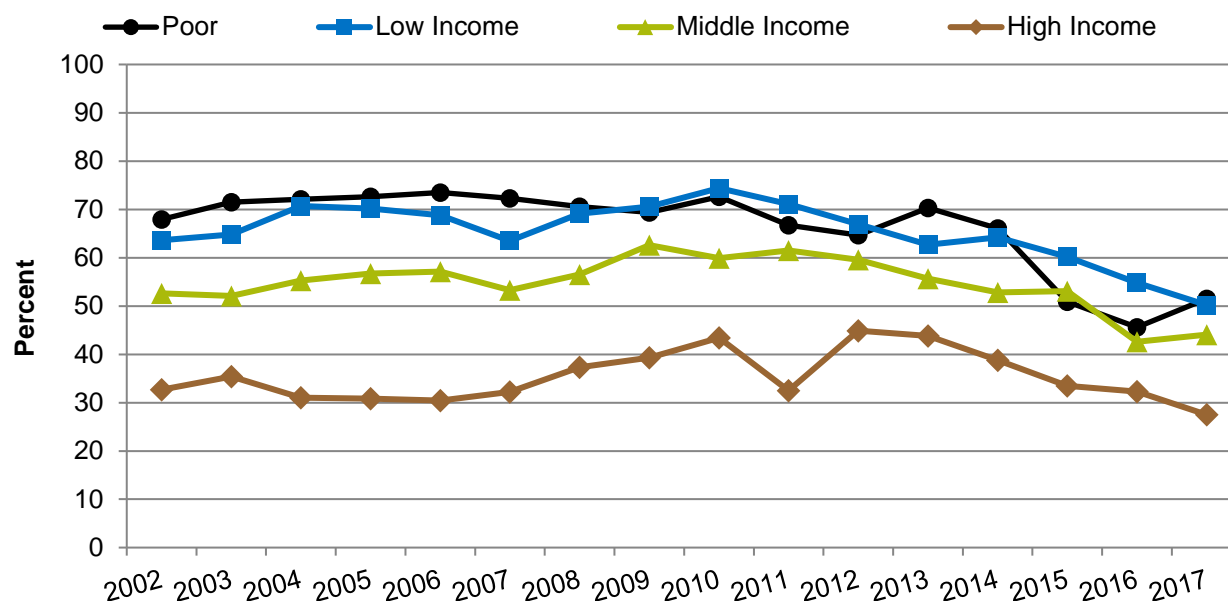
- Efforts are underway within HHS to improve children's access to dental care, including the Health Resources and Services Administration (HRSA) initiative Integration of Oral Health and Primary Care Practice and school-based sealant programs. HRSA published a report on the initiative that summarized recommendations for improving preventive oral healthcare (<https://www.hrsa.gov/sites/default/files/hrsa/oralhealth/integrationoforalhealth.pdf>).

- As part of CDC's State Actions to Improve Oral Health Outcomes, CDC funds states and territories to [implement evidence-based preventive interventions](#) that include expanding sealant delivery in low-income and rural schools. School-based sealant programs increase sealant use and reduce caries. Programs target schools that serve children from low-income families and focus on sealing newly erupted permanent molars.

Financial Barriers to Medical Care

The most prominent barriers to health coverage include affordability, eligibility for public coverage in a person's state, immigration status, and lack of familiarity with signup procedures.⁵² Uninsured patients may delay visiting a provider until their health concern becomes unbearable or skip preventive visits if they feel healthy.⁶³

Figure 57. People unable to get or delayed in getting needed medical care due to financial or insurance reasons, 2002-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

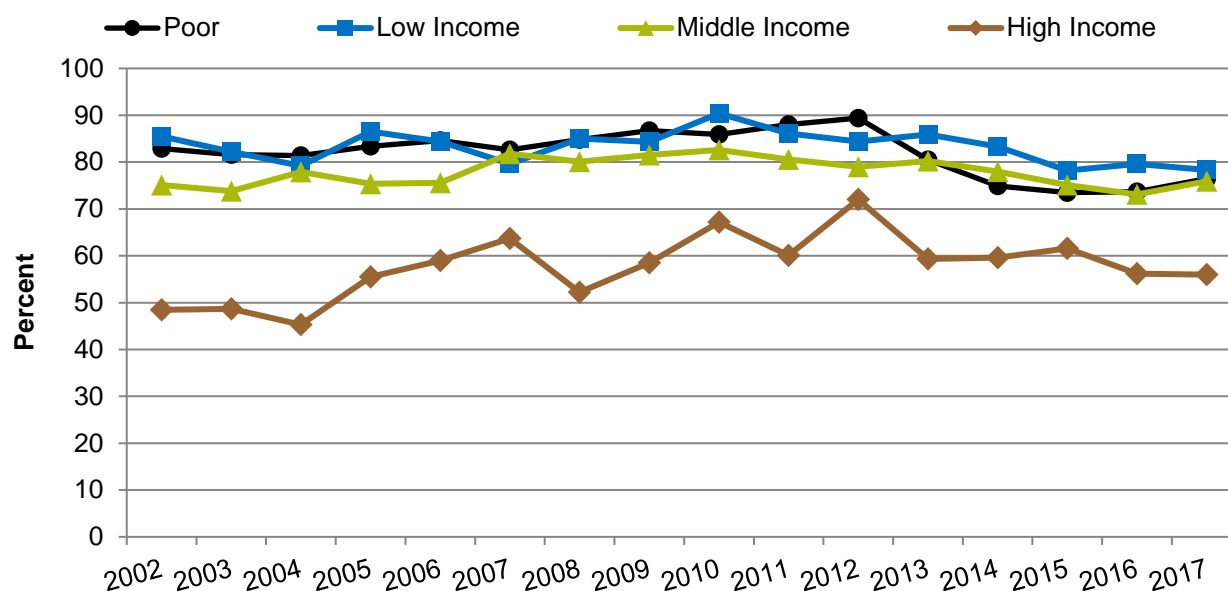
Note: For this measure, lower rates are better.

- In 2002, 67.9% of poor people were unable to get or delayed in getting needed medical care due to financial or insurance reasons (Figure 57). In 2017, the percentage had dropped to 51.5%.
- From 2002 to 2017, disparities narrowed between high-income and poor people who were unable to get or delayed in getting needed medical care due to financial or insurance reasons.

Financial Barriers to Dental Care

The most prominent barriers to health coverage include affordability, eligibility for public coverage in a person's state, immigration status, and lack of familiarity with signup procedures.⁵² Research shows that lack of access to oral healthcare also worsens physical and mental health.⁶³

Figure 58. People unable to get or delayed in getting needed dental care due to financial or insurance reasons, 2002-2017



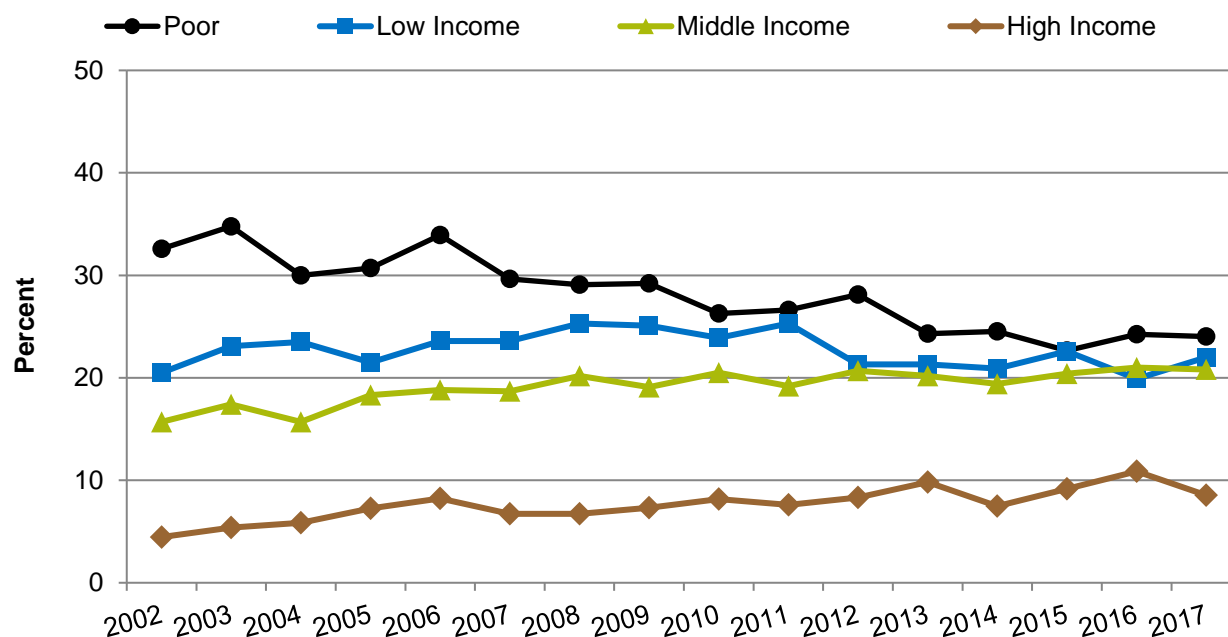
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

Note: For this measure, lower rates are better.

- In 2002, 82.9% of poor people were unable to get or delayed in getting needed dental care due to financial or insurance reasons. The percentage decreased to 76.5% in 2017 (Figure 58).
- Data from 2002 to 2017 show that disparities between high-income and poor people were narrowing over time.

High Family Medical Expenditures

Figure 59. People under age 65 whose family's health insurance premium and out-of-pocket medical expenditures were more than 10% of total family income, 2002-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

- In 2002, 32.6% of poor people under age 65 had family health insurance premiums and out-of-pocket medical expenditures that were more than 10% of total family income. The percentage decreased to 24.0% in 2017 (Figure 59).
- Data from 2002 to 2017 show that disparities between high-income and poor people were narrowing over time.

Disparities by Insurance Status

This section examines trends and disparities among quality measures by insurance status. Insurance categories differ for ages 0-64 years and for adults age 65 years and over. Insurance categories for people ages 0-64 years are:

- **Private Insurance:** Person has access to insurance from a private insurer.
- **Public Insurance:** Person receives insurance from one or more government-sponsored sources, including Medicaid, State Children's Health Insurance Program, state-sponsored or other government-sponsored health plans, Medicare, and military plans.
- **Uninsured:** Person does not have any health insurance.

Quality measures that examine health insurance status for adults age 65 and over include a distinction for access to Medicare:

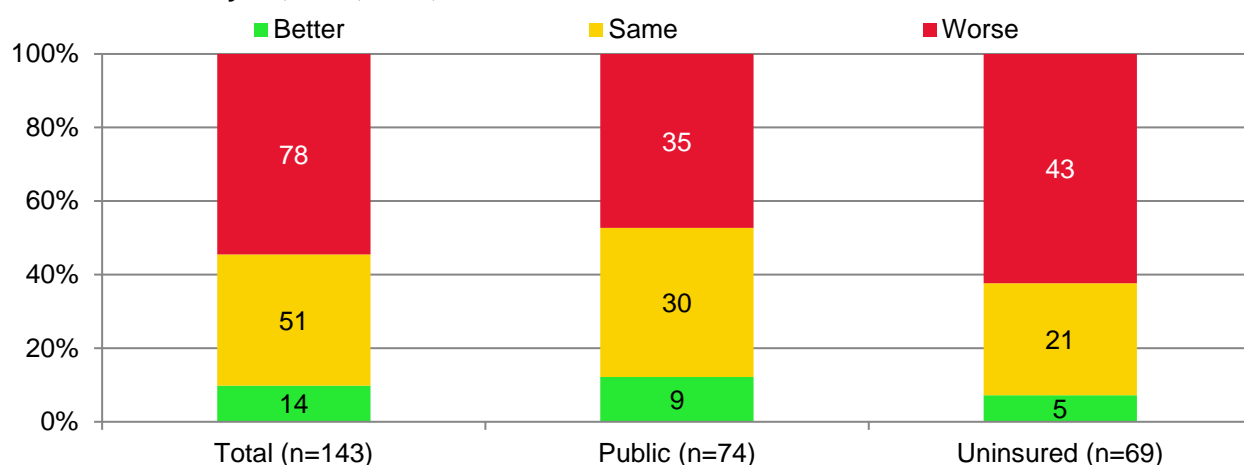
- **Private Insurance:** Person has access to insurance from a private insurer and Medicare.
- **Public Insurance:** Person receives insurance from Medicare only. Person may also receive insurance from Medicare and other government-sponsored sources, including Medicaid, state-sponsored or other government-sponsored health plans, and military plans.

Adults 65 years or over usually have Medicare coverage at a minimum.⁶⁴ In addition, the Indian Health Service (IHS) offers public coverage to and is considered a comprehensive healthcare delivery system for AI/ANs. Currently, IHS serves 2.6 million AI/ANs who belong to 573 federally recognized tribes in 37 states. IHS is not described as a health plan in this report. Non-IHS data sources, including CDC's National Center for Health Statistics, also track disparities for AI/AN populations.

The bar chart below summarizes 137 quality measures, including 71 measures with data for people with public insurance and 66 measures with data for people who are uninsured. All measures compared these groups with adults with private insurance.

Quality for uninsured people was better than quality for those with private insurance on only 8% of measures.

Figure 60. Number and percentage of quality measures for which insurance groups experienced better, same, or worse quality of care compared with reference group (privately insured) for the most recent data year, 2016, 2017, or 2018



Key: n = number of measures.

Note: The most recent data years are used for this analysis. Different data sources have different data years for most recent data year. For example, the most recent data year from the Agency for Healthcare Research and Quality Healthcare Cost and Utilization Project (AHRQ HCUP) is 2016 and from the Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey (CDC NHIS) is 2018.

- Data for the most recent year show that compared with people with private insurance, people with public insurance experienced better quality for 12% of measures and uninsured people experienced better quality for 7% of measures (Figure 60).
- Uninsured people had worse care for 62% of quality measures, and people with public insurance had worse care for 47% of quality measures.

Largest Disparities for People With Public Insurance

The three quality measures with the largest disparities between people with public insurance and people with private insurance are:

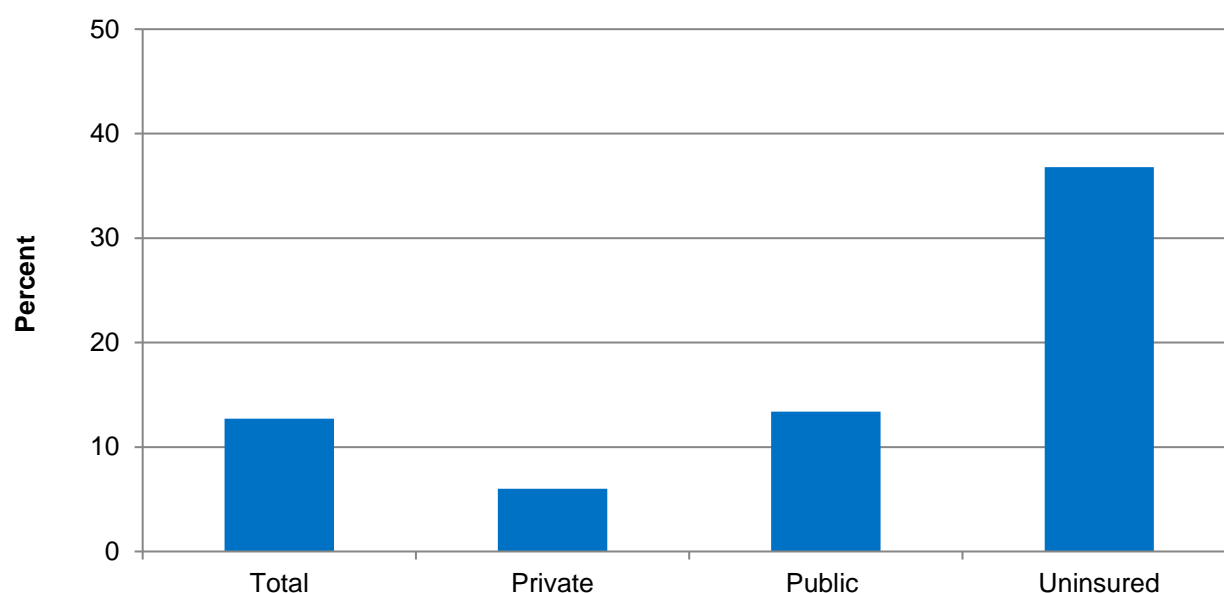
- People without a usual source of care who indicated a financial or insurance reason for not having a source of care.
- Adults who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never showed respect for what they had to say.
- Sepsis diagnoses per 1,000 elective-surgery admissions of length 4 or more days, adults.

The three quality measures with the largest disparities between people who were uninsured and people with private insurance are:

- People without a usual source of care who indicated a financial or insurance reason for not having a source of care.
- Children who had their height and weight measured by a health provider within the past 2 years.
- Adults who received a blood pressure measurement in the last 2 years and can state whether their blood pressure was normal or high.

Difficulty Getting a Usual Source of Care

Figure 61. People without a usual source of care who indicated a financial or insurance reason for not having a source of care, 2017



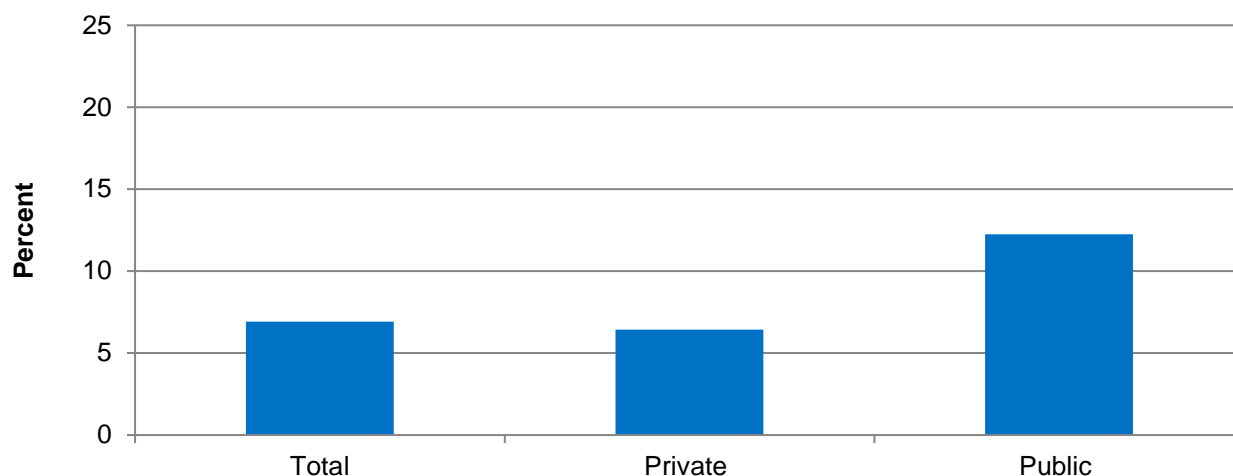
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: For this measure, lower rates are better.

- In 2017, the percentage of people without a usual source of care who indicated a financial or insurance reason for not having a source of care was more than twice as high for adults with public insurance (13.4%) compared with adults with private insurance (6.0%) (Figure 61).
- In 2017, the percentage of people without a usual source of care who indicated a financial or insurance reason for not having a source of care was more than six times as high for uninsured adults (36.8%) compared with adults with private insurance (6.0%).

Providers Who Showed Respect for What Patients Had To Say

Figure 62. Adults 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, 2017



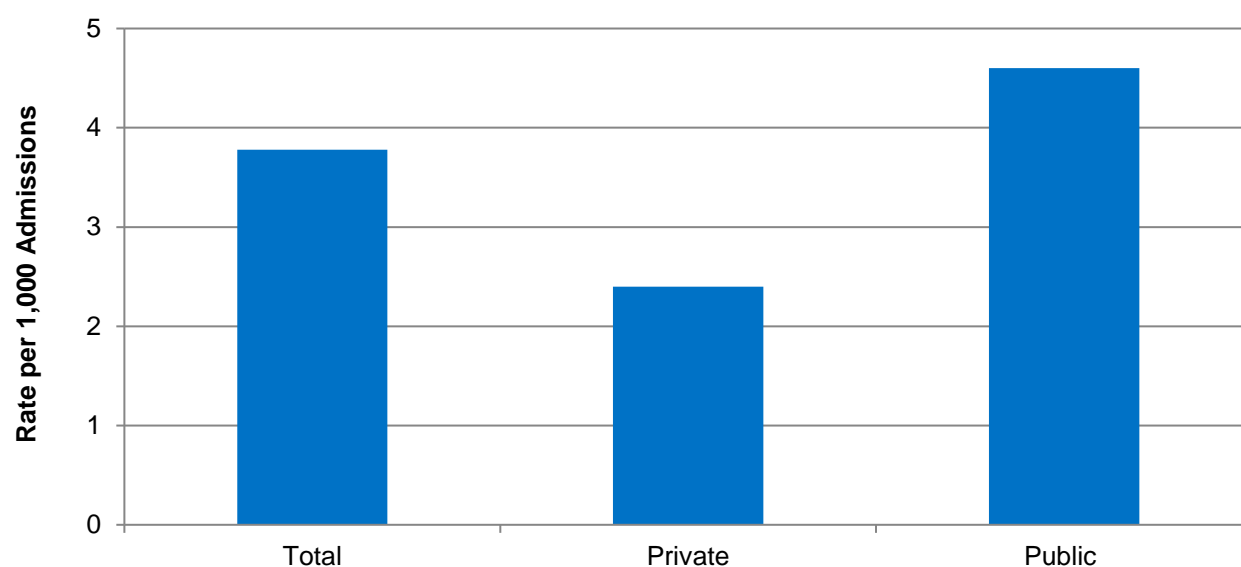
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: For this measure, lower rates are better.

- In 2017, the percentage of adults 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 was nearly twice as high for people with public insurance (12.2%) compared with people with private insurance (6.4%) (Figure 62).

Sepsis

Sepsis is a potentially life-threatening bloodstream infection that can be acquired in various settings. Sepsis can occur after surgery, and one study showed that postoperative sepsis occurred in 5% of emergency surgery patients and 2% of elective-surgery patients.⁶⁵ One way to reduce the risk of sepsis is to give patients appropriate prophylactic antibiotics, starting 1 hour prior to surgical incision.

Figure 63. Sepsis diagnoses per 1,000 elective-surgery admissions of length 4 or more days, 2017

Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases, 2017, weighted to provide national estimates; and the AHRQ Quality Indicators, version 2019.01 for the 2017 data. For more information, see the HCUP Methods Series Report on Methods Applying AHRQ Quality Indicators to HCUP Data (<https://www.hcup-us.ahrq.gov/reports/methods/methods.jsp>), 2017.

Note: For this measure, lower rates are better.

- In 2017, the rate of adults diagnosed with sepsis per 1,000 elective-surgery admissions of length 4 or more days was nearly twice as high for people with public insurance (4.6%) compared with people with private insurance (2.4%) (Figure 63).

Resources

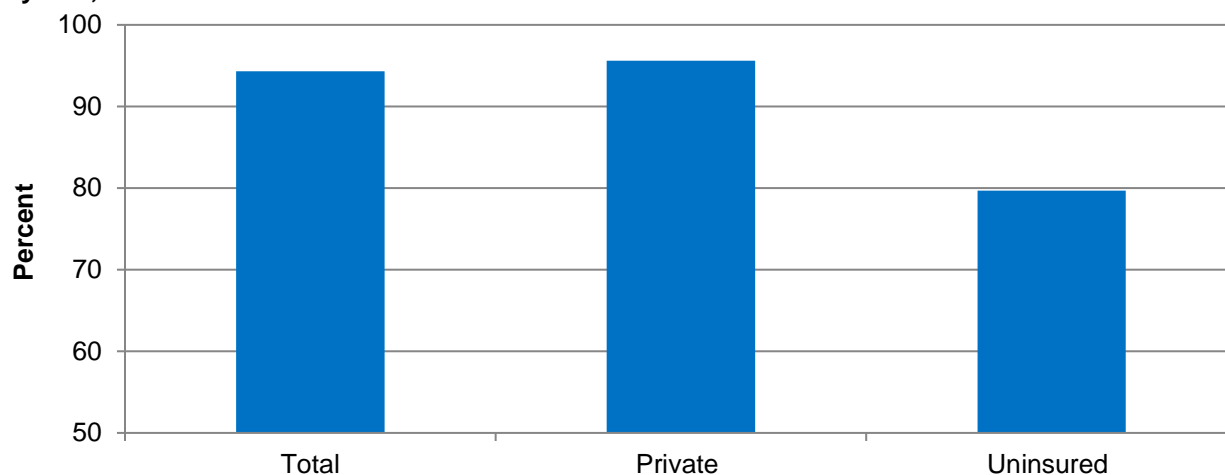
- The CDC's Hospital Toolkit for Adult Sepsis Surveillance allows healthcare professionals who are interested in using the sepsis surveillance methodology from the national burden study to track healthcare facility-level sepsis incidence and outcomes using an objective definition based on clinical data. Necessary data may be obtained and processed directly from electronic health records but could also be obtained using manual chart review. These data may be useful for understanding the effectiveness of local sepsis prevention, early recognition, and treatment programs.

Largest Disparities for Uninsured People

Measurement of Children's Height and Weight

Regularly checking a child's height and weight helps assess growth and development and can alert healthcare providers and families to potential concerns. Having health insurance facilitates access to providers for recommended well-child visits.

Figure 64. Children who had their height and weight measured by a health provider within the past 2 years, 2017



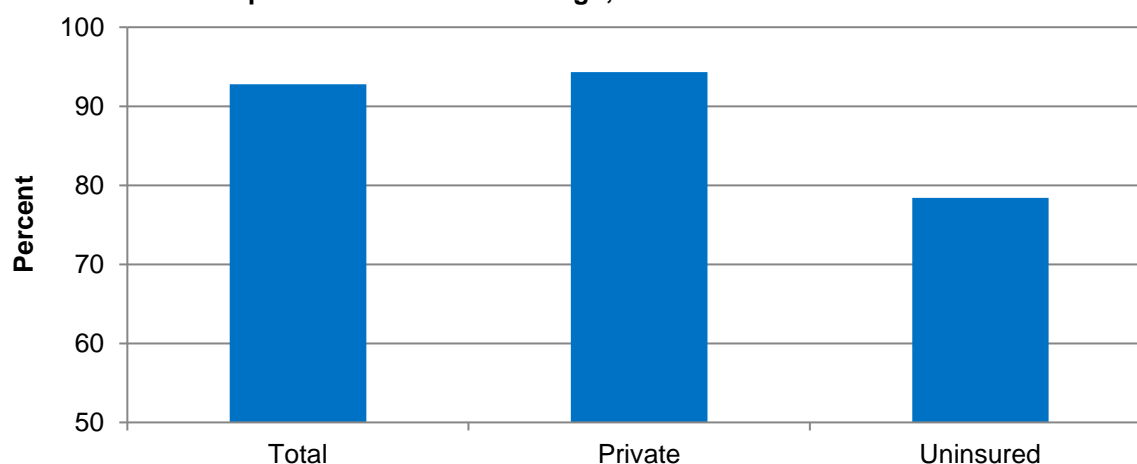
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

- In 2017, children who were privately insured (95.6%) were more likely than uninsured children (79.7%) to have their height and weight measured by a health provider within the past 2 years) (Figure 64).

Blood Pressure Management

Hypertension, also called [high blood pressure](#), affects about one in three U.S. adults. Over time, it can damage the heart, blood vessels, kidneys, and other parts of the body. Complications can include heart attacks, heart failure, stroke, and chronic kidney disease. High blood pressure is managed with lifestyle changes, including eating healthy foods, being physically active, maintaining a healthy weight, limiting alcohol intake, and managing and coping with stress.⁶⁶

Figure 65. Adults who received a blood pressure measurement in the last 2 years and can state whether their blood pressure was normal or high, 2017



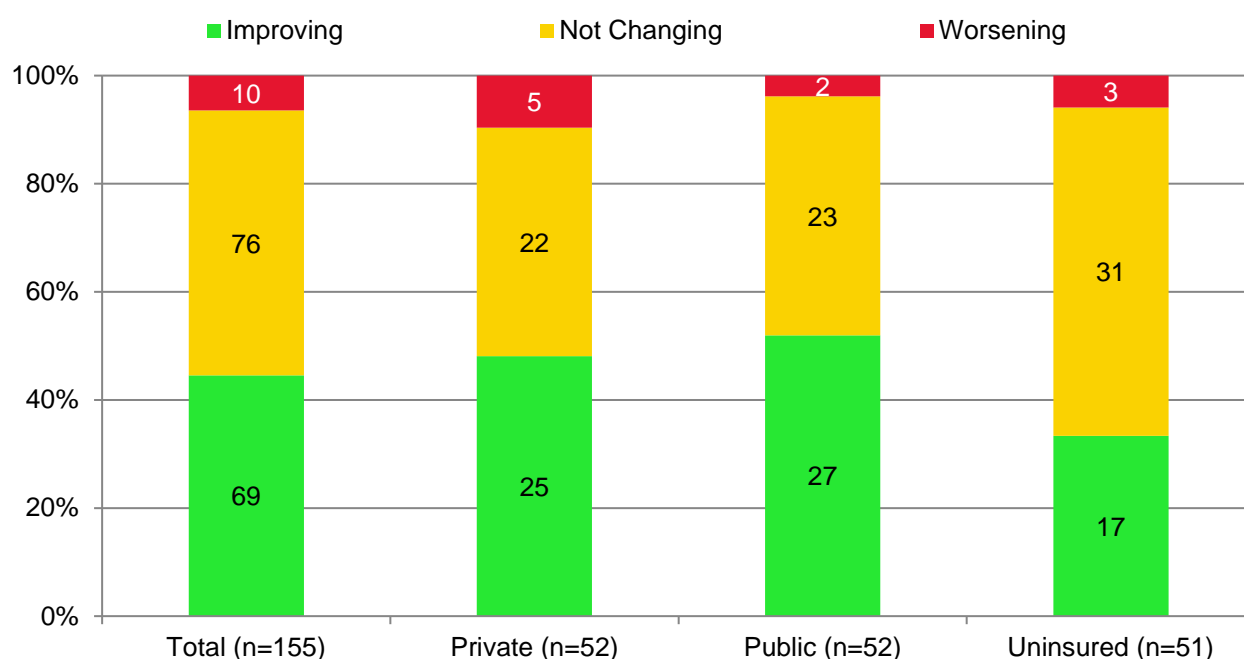
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2017.

- In 2017, privately insured adults ages 18-64 (94.3%) were more likely than uninsured adults (78.4%) to receive a blood pressure measurement in the last 2 years and be able to state whether their blood pressure was normal or high) (Figure 65).

Changes in Quality of Care by Insurance Status

About half of quality measures for those with private and public insurance were improving over time but only a third of quality measures for uninsured people showed improvement.

Figure 66. Number and percentage of all quality measures that were improving, not changing, or worsening over time, total and by insurance status, from 2000 through 2016, 2017, or 2018



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percent change and to assess statistical significance. Progress on individual measures is determined as follows:

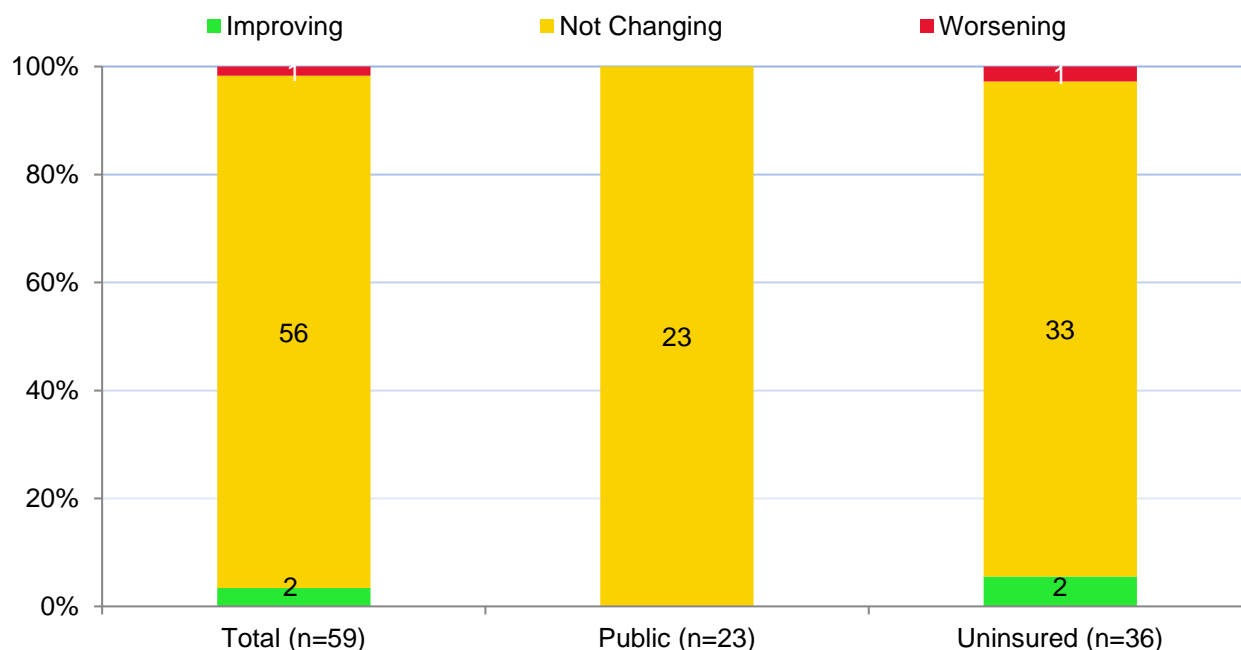
- **Improving:** The average annual percentage change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing:** The average annual percentage change is $\leq 1\%$ in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening:** The average annual percentage change is 1% or greater in the undesirable direction, and $p < 0.10$.

Different data sources have different data years. For example, the most recent data year available for trending from the Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base (NCDB) is 2016 and from the Centers for Disease Control and Prevention, National Health Interview Survey (CDC NHIS) is 2018.

- From 2000 through 2018, across 155 measures of healthcare quality with data by insurance status, a higher percentage of measures was improving for people with public insurance (52%) and people with private insurance (48%) compared with uninsured people (33%) (Figure 66).
- The percentage of worsening measures was lower for people with public insurance (4%) compared with uninsured people (6%) and people with private insurance (10%).

Changes in Disparities by Insurance

Figure 67. Number and percentage of quality measures with disparity at baseline for which disparities related to insurance were improving, not changing, or worsening over time, 2000 through 2014, 2015, 2016, 2017, or 2018



Key: n = number of measures.

Note: Different data sources have different data years. For example, the most recent data year available for trending from the Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base (NCDB) is 2016 and from the Centers for Disease Control and Prevention, National Health Interview Survey (CDC NHIS) is 2018.

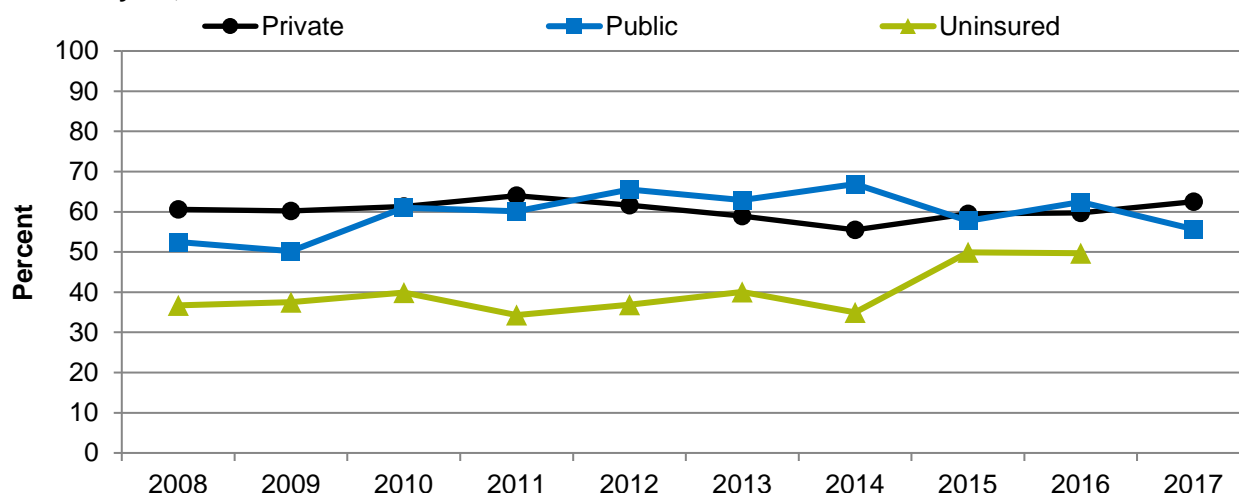
- Disparities by insurance status were not changing for most quality measures (Figure 67).
- Two measure showed improvement over time in disparities between uninsured people and people with private insurance:
 - Adults age 40 and over with diagnosed diabetes who received a flu vaccination in the calendar year.
 - Adults with limited English proficiency who had a usual source of care.

- One measure showed a widening disparity between uninsured people and people with private insurance: People without a usual source of care who indicated a financial or insurance reason for not having a source of care.

Receipt of Flu Vaccine by Patients With Diabetes

Some patients are at higher risk of contracting the flu. These include children, older adults, and people with diabetes. The flu also has a greater likelihood of exacerbating diabetes in affected patients.⁶⁷

Figure 68. Adults age 40 and over with diagnosed diabetes who received a flu vaccination in the calendar year, 2008-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2008-2017.

Note: Data for uninsured did not meet criteria for statistical reliability in 2017.

- From 2008 to 2016, the disparity between adults with private insurance and uninsured adults narrowed in the percentage of adults age 40 and over with diabetes who received a flu vaccine. This percentage increased from 36.7% in 2008 to 49.7% in 2016 for uninsured adults. There were no statistically significant changes over time for people with private insurance in the percentage with diabetes who got a flu vaccine (Figure 68).

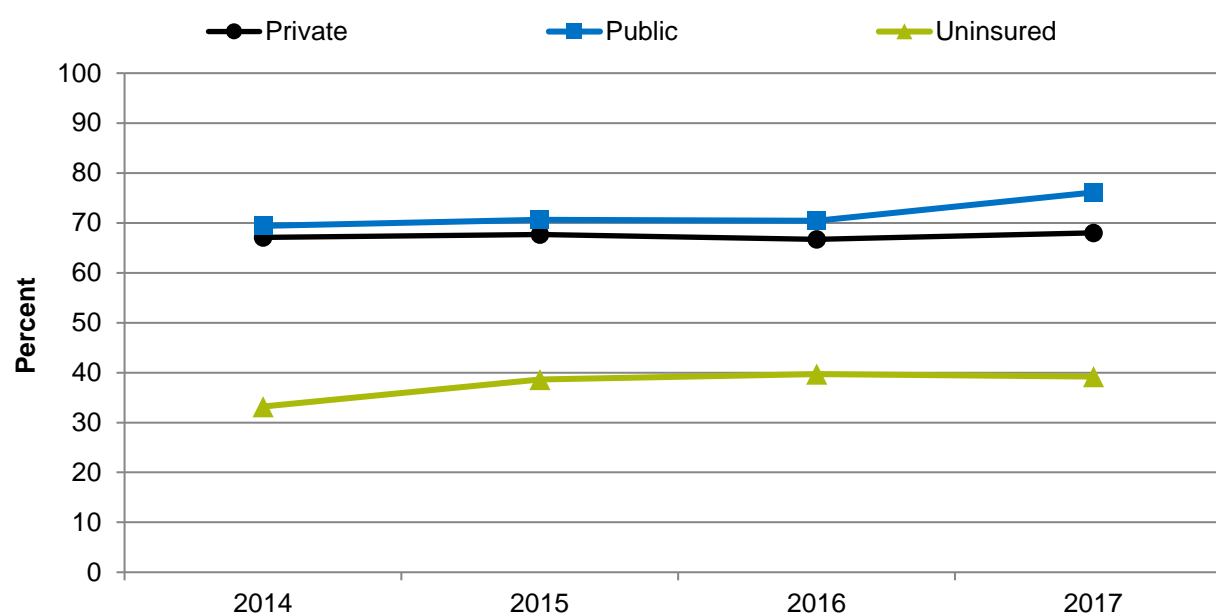
Resources

- **What You Need To Know About Diabetes and Adult Vaccines:** a CDC information series for adults that provides information on the importance of vaccines for people with diabetes.⁶⁸
- **Everyone with Diabetes Counts (EDC):** a diabetes self-management education program launched by the Centers for Medicare & Medicaid Services (CMS) that offers evidence-based diabetes self-management training. The program is designed to improve health outcomes and quality of life among disparate and underserved Medicare populations.

- **Medicare's Diabetes Prevention Program:** a proven health behavior change program to help prevent type 2 diabetes. The program begins with 16 core sessions offered in a group setting over a 6-month period. These sessions include:
 - Training to make realistic, lasting behavior changes.
 - Tips on how to get more exercise.
 - Strategies for controlling one's weight.
 - A behavior coach, specially trained to help keep people motivated.
 - Support from people with similar goals.

Patients With Limited English Proficiency and Usual Source of Care

Figure 69. Adults with limited English proficiency who had a usual source of care, 2014-2017



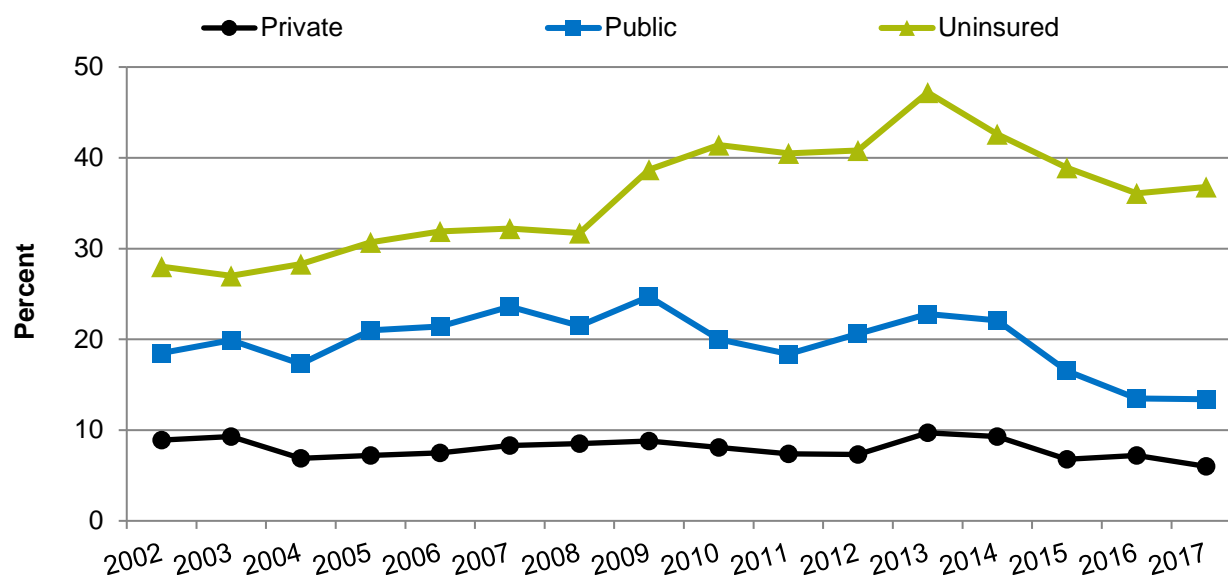
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2014-2017.

- In 2014, 33.2% of uninsured adults with limited English proficiency had a usual source of care. The percentage increased to 39.2% in 2017 (Figure 69).
- Data from 2014 to 2017 show that the disparities between privately insured and uninsured people were narrowing over time.

Financial or Insurance Barriers to Care

As noted earlier, people with lower incomes may have difficulty accessing a usual source of care. They may face high copays or have problems getting insurance.

Figure 70. People without a usual source of care who indicated a financial or insurance reason for not having a source of care, 2002-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

- From 2002 to 2017, the disparity between adults with private insurance and uninsured adults widened in the percentage of people without a usual source of care who indicated a financial or insurance reason for not having a source of care. The estimate for uninsured people without a usual source of care increased from 28% in 2002 to 36.8% in 2017, and there were no statistically significant changes for people with private insurance (Figure 70).

Disparities by Residence Location

Where people live affects their access to healthcare and the quality of their healthcare. Current research shows that disparities by residence location affect both adults and children.^{69,70,71,72,73,74}

Residence Location Groups

This report uses the 2013 National Center for Health Statistics (NCHS) classification for analyzing healthcare quality and disparities by residence location, replacing the previously used 2006 classification scheme.

The 2013 scheme includes six urbanization categories, including:

- Four metropolitan county designations:
 - Large Central Metropolitan: Large central metropolitan counties in a metropolitan statistical area (MSA) of 1 million or more population:
 1. That contain the entire population of the largest principal city of the MSA, or
 2. Whose entire population is contained within the largest principal city of the MSA, or
 3. That contain at least 250,000 residents of any principal city in the MSA.
 - Large Fringe Metropolitan: Counties in MSAs of 1 million or more population that do not qualify as large central.^{vii} Large Fringe Metropolitan areas are also described as suburban areas. This category is the reference group that all other residence locations are compared with in this report.
 - Medium Metropolitan: Counties in MSAs of 250,000 to 999,999 population.
 - Small Metropolitan: Counties in MSAs of less than 250,000 population.
- Two nonmetropolitan county designations:
 - Micropolitan: Counties in a micropolitan statistical area.
 - Noncore: Nonmetropolitan counties that are not in a micropolitan statistical area.

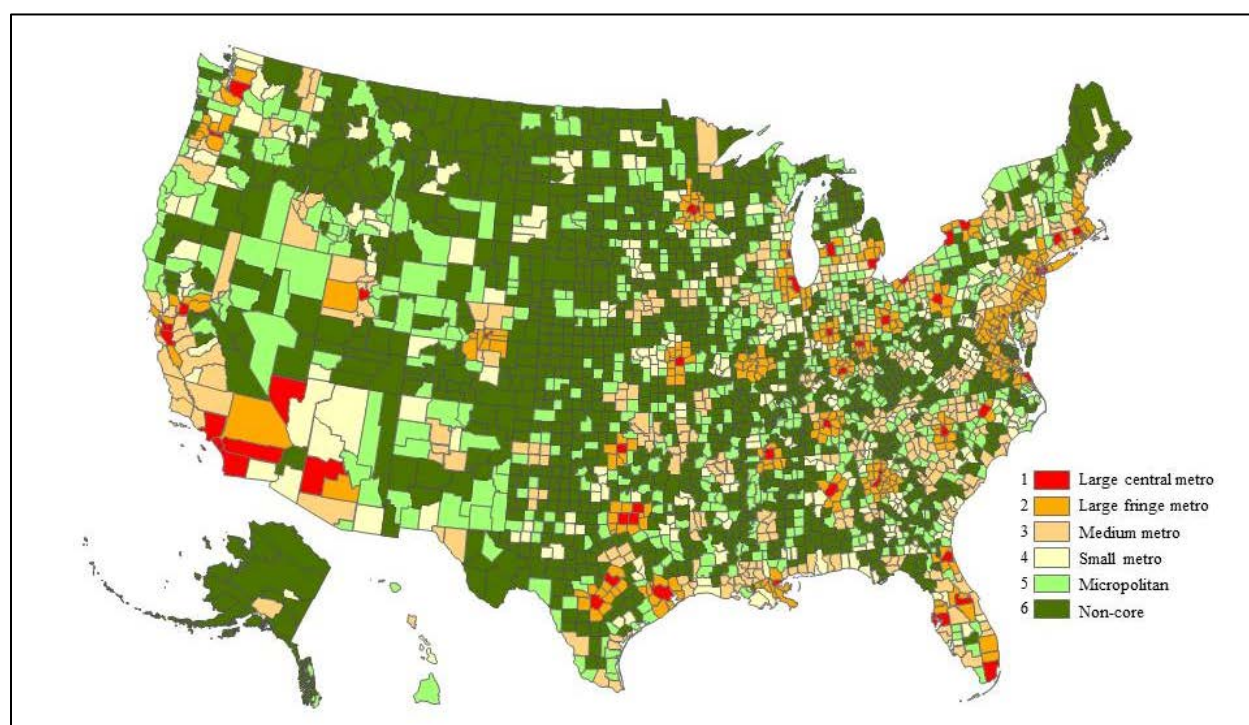
The key differences between the 2006 and the 2013 NCHS Urban-Rural Classification schemes are noted in the description of small metropolitan, micropolitan, and noncore areas. The 2013 classification broadens the inclusion criteria for each residence location. All other definitions are unchanged (Table 1).⁷⁵

^{vii} For comparisons across residence locations, large fringe MSAs (large city suburbs) are used as the reference group since these counties have the lowest levels of poverty and typically have the best quality and access to healthcare.

Table 1. NCHS Urban-Rural Classification Scheme, 2006 vs. 2013

Areas	2006 Classification	2013 Classification
Small Metropolitan	Counties in MSAs of 50,000 to 249,999 population	Counties in MSAs of less than 250,000 population.
Micropolitan	Urban cluster population of 10,000-49,999 individuals.	Counties in a micropolitan statistical area.
Noncore	Nonmetropolitan counties that did not qualify as micropolitan.	Nonmetropolitan counties that are not in a micropolitan statistical area.

Figure 71 shows a map of U.S. county classifications according to the 2013 NCHS Urban-Rural Classification system. Counties across the United States are listed below the map to show examples of the corresponding areas.

Figure 71. Map showing 2013 NCHS Urban-Rural County Classifications in the United States

- **Metropolitan Areas:**
 - **Large Central Metropolitan Areas:** Denver County, Colorado; Washington, DC; Cook County, Illinois.
 - **Large Fringe Metropolitan Areas:** San Bernardino County, California; Broward County, Florida; Bergen County, New Jersey.
 - **Medium Metropolitan Areas:** Scott County, Kentucky; York County, Maine; Douglas County, Nebraska.
 - **Small Metropolitan Areas:** Baldwin County, Alabama; Wayne County, North Carolina; Allen County, Ohio.
- **Nonmetropolitan Areas:**
 - **Micropolitan Areas:** Woodward County, Oklahoma; Cherokee County, South Carolina; Harrison County, West Virginia.
 - **Noncore Areas:** Wallowa County, Oregon; Bedford County, Pennsylvania; Crane County, Texas.

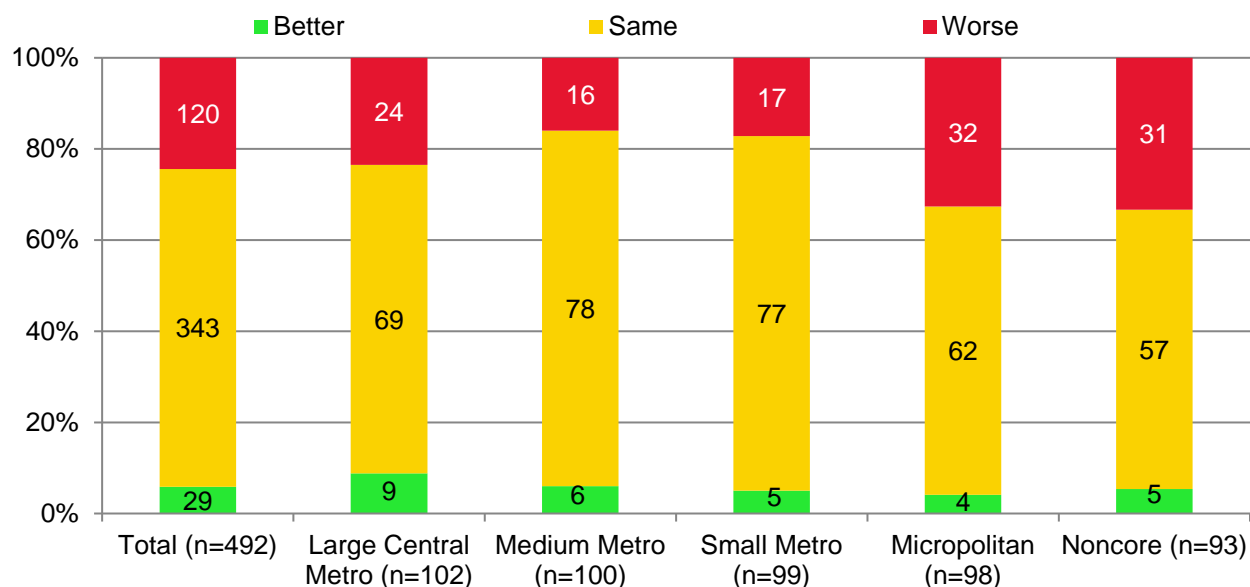
The NHQDR uses the NCHS classification to analyze performance of quality measures that have data available by residence location. In addition to the annual report, data on state-based performance metrics are available through the NHQDR [State Snapshots](#).⁷⁶

With the State Snapshots tool, users can explore the quality of their state's healthcare and compare their state's data with national data or data from the best performing states. Users can access a state dashboard showing performance compared with benchmarks for more than 80 measures. Some of these measures are also stratified by subpopulations to show disparities.

Overview of Disparities by Residence Location

Nonmetropolitan areas had worse performance on one-third of all quality measures compared with suburban areas in the latest data year.

Figure 72. Number and percentage of quality measures for which members of selected groups experienced better, same, or worse quality of care compared with reference group (large fringe metropolitan) for the most recent data year, 2016, 2017, or 2018, by residence location



Key: n = number of measures.

Note: The difference between two groups is meaningful only if the absolute difference between the two groups is statistically significant with a p-value <0.05 on a two-tailed test **and** the relative difference between the two groups is at least 10%. Definitions of residence locations are available at https://www.cdc.gov/nchs/data_access/urban_rural.htm. The most recent data years are used for this analysis. Different data sources have different data years for most recent data year. For example, the most recent data year from the Agency for Healthcare Research and Quality Medical Expenditure Panel Survey (MEPS) is 2016 and from the Centers for Disease Control and Prevention, National Health Interview Survey (CDC NHIS) is 2018.

- Large Central Metropolitan areas (9%) had the highest percentage of quality measures for which performance was better than in large fringe metropolitan areas (Figure 72).
- Nonmetropolitan areas had the highest percentage of measures for which performance was worse than in large fringe metropolitan areas: Noncore, 33%; Micropolitan, 33%; Large Central Metropolitan, 24%; Small Metropolitan, 17%; and Medium Metropolitan, 16%.

Largest Disparities

Measures with the largest disparities for residence location can be grouped into five categories:

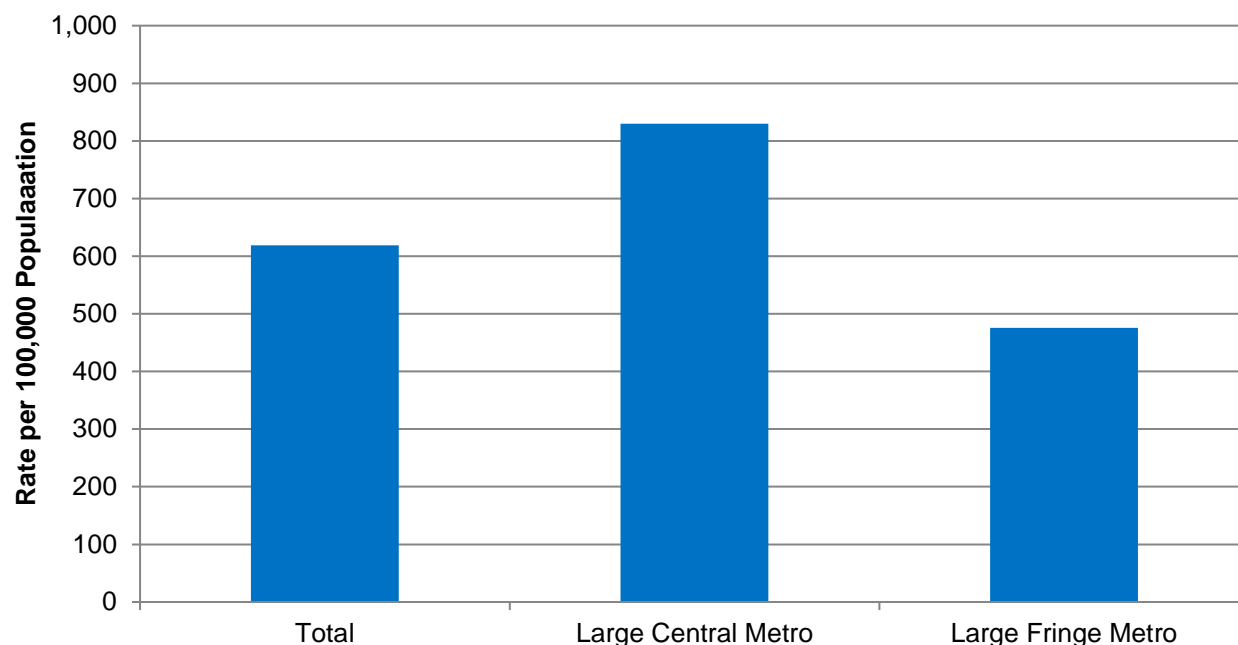
- Largest disparities among measures of care coordination in hospital setting include:
 - Emergency department encounters for asthma, children ages 2-17 (large central metropolitan).
 - Hospital admissions for asthma per 100,000 population, children ages 2-17 (large central metropolitan).
 - Emergency department visits with a principal diagnosis related to dental conditions (micropolitan).
 - Hospital admissions for community-acquired pneumonia per 100,000 population, adults age 18 and over (noncore).
- Largest disparities among measures of effective treatment (no specific setting of care) is for:
 - HIV infection deaths per 100,000 population (large central metropolitan).
- Largest disparities among measures of healthy living in ambulatory setting include:
 - Children ages 0-17 with a wellness checkup in the past 12 months (medium metropolitan).
 - Adults who received a blood cholesterol measurement in the last 5 years (small metropolitan, micropolitan).
- Largest disparities among measures of patient safety in hospital setting include:
 - Deaths per 1,000 hospital admissions with expected low mortality, adults (medium metropolitan, noncore).
 - Reclosure of postoperative abdominal wound dehiscence per 1,000 abdominopelvic-surgery admissions of length 2 or more days, adults (medium metropolitan, noncore).

- Largest disparities among measures of person-centered care in ambulatory setting include:
 - Adults 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 (small metropolitan, micropolitan).
 - Adults who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never listened carefully to them (small metropolitan).

Care Coordination: Emergency Department Visits for Asthma

Asthma is one of the most common chronic pediatric diseases, and acute asthma exacerbation is a leading cause of emergency department (ED) visits for children.⁷⁷ Given the severity of asthma, timely treatment is crucial. Current research shows that ED overcrowding, acuity, and age affect treatment time for children visiting the ED.^{78,79}

Figure 73. Emergency department encounters for asthma, children ages 2-17, 2017



Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2017.

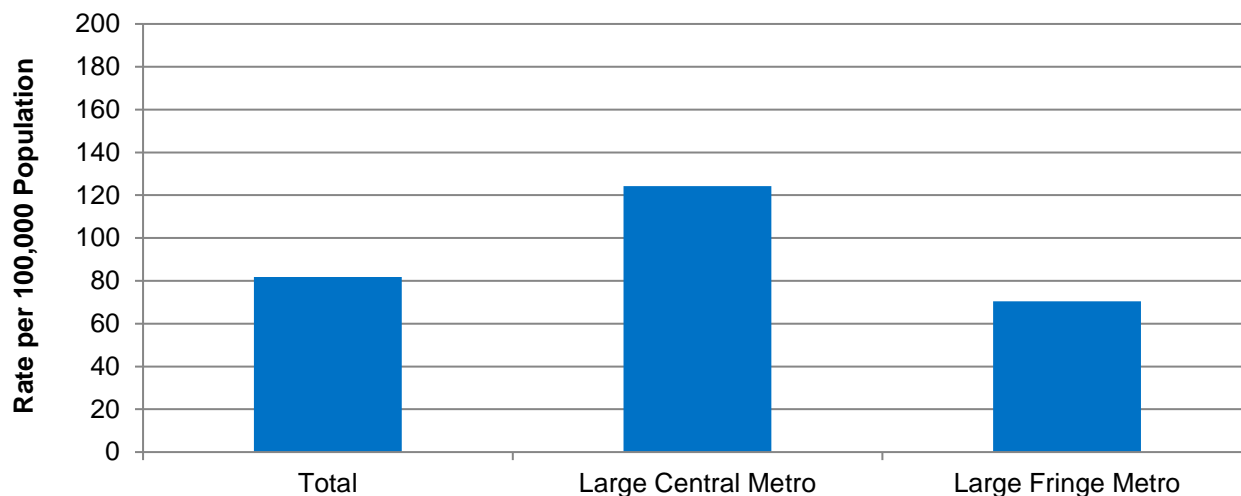
Note: For this measure, lower rates are better.

- In 2017, the rate of children ages 2-17 with ED visits for asthma was almost twice as high in large central metro areas (830 per 100,000 population) as it was in large fringe metro areas (476 per 100,000 population) (Figure 73).

Care Coordination: Hospital Admissions for Asthma

Asthma is the most common chronic lung condition among children under 17 years in the United States.⁸⁰ Asthma has no cure and without treatment, patients can die. CDC research shows that from 2001 to 2016, 8% fewer children experienced one or more asthma attacks. Nonetheless, in 2017, about 1 in 12 children ages 0-17 had asthma and among them, asthma disproportionately affected males, non-Hispanic Black children, and children from low-income households.⁸¹

Figure 74. Hospital admissions for asthma per 100,000 population, children ages 2-17, 2017



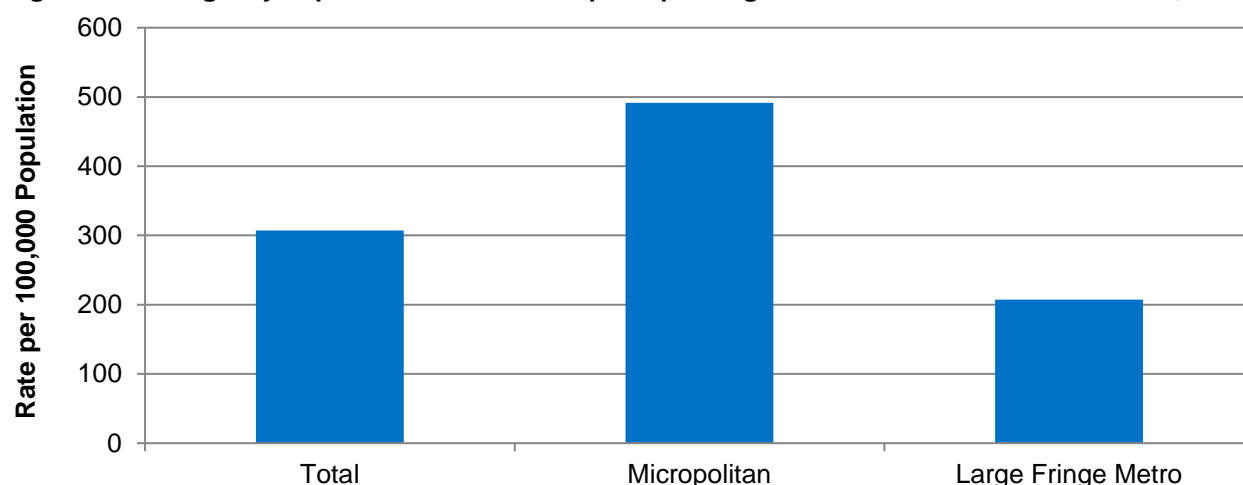
Source: Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases, 2017, weighted to provide national estimates; and the AHRQ Quality Indicators, version 2019.01 for the 2017 data. For more information, see the HCUP Methods Series Report on Methods Applying AHRQ Quality Indicators to HCUP Data (<https://www.hcup-us.ahrq.gov/reports/methods/methods.jsp>).

Note: For this measure, lower rates are better.

- In 2017, the rate of hospital admissions for children ages 2-17 with asthma was almost twice as high in large central metro areas (124.3 per 100,000 population) as in large fringe metro areas (70.4 per 100,000 population) (Figure 74).

Care Coordination: Emergency Department Visits for Dental Conditions

More people across the United States are using the ED for dental complaints.⁸² In 2016, the rate of ED visits for dental complaints was 45.8 visits per 100 people.⁸³ Research shows that many of these visits could be prevented through appropriate preventive care.

Figure 75. Emergency department visits with a principal diagnosis related to dental conditions, 2017

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2017.

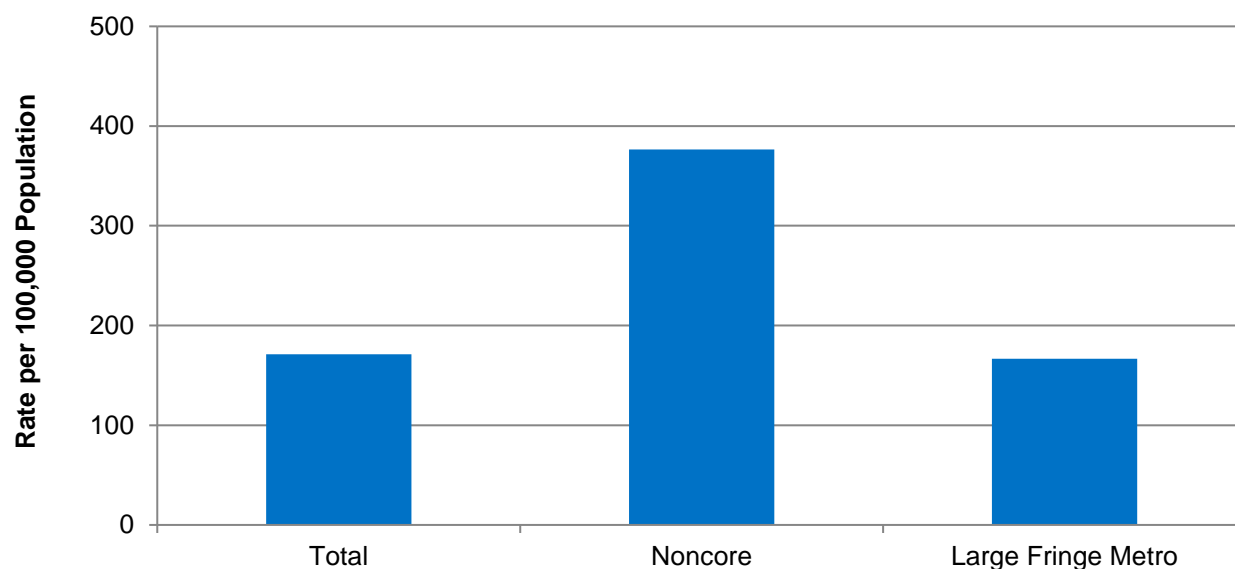
Note: For this measure, lower rates are better.

- In 2017, the rate of ED visits related to dental conditions in micropolitan areas (491.7 per 100,000 population) was more than twice the rate in large fringe metro areas (207.1 per 100,000 population) (Figure 75).

Care Coordination: Hospital Admissions for Pneumonia

Pneumonia is a devastating and life-threatening condition that can strike anyone, but older adults have increased susceptibility for community-acquired pneumonia (CAP).^{84,85} The costs associated with CAP can be mitigated by preventive efforts, including vaccinations. CDC recommends pneumococcal vaccination for all adults 65 years and over, as well as adults ages 19-64 years who have certain medical conditions (e.g., HIV, leukemia) or who smoke.⁸⁶

Figure 76. Hospital admissions for community-acquired pneumonia per 100,000 population, adults age 18 and over, 2017



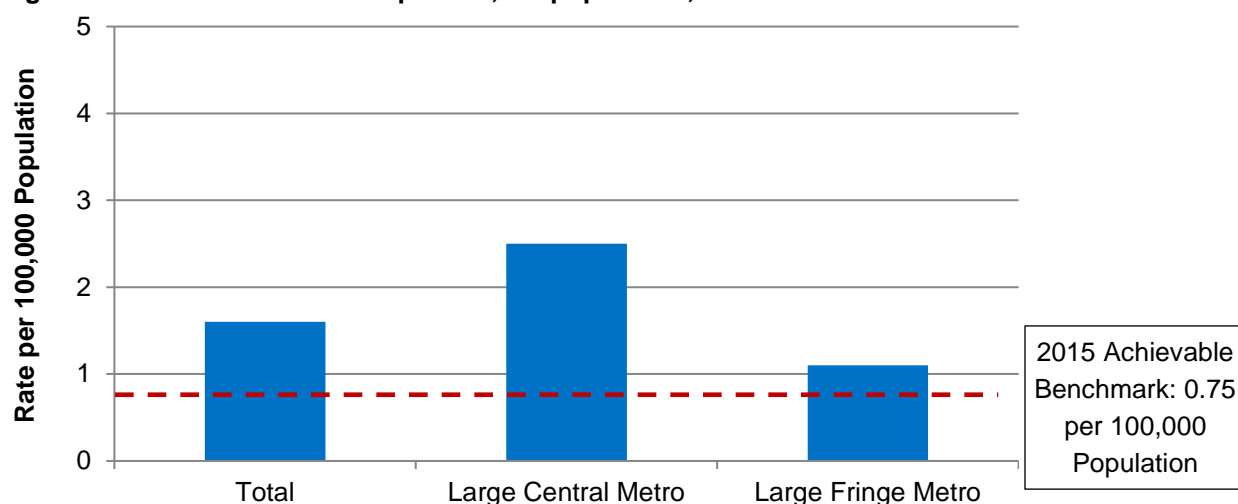
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, 2017.

Note: For this measure, lower rates are better.

- In 2017, the rate of hospital admissions for CAP was more than twice as high in noncore areas (376.5 per 100,000 population) compared with large fringe metro areas (166.6 per 100,000 population) (Figure 76).

Effective Treatment: HIV Infection Deaths

New HIV diagnoses are concentrated primarily in large U.S. metropolitan areas (80% in 2017), with Miami, Orlando, and Atlanta topping the list of the areas most heavily burdened.⁸⁷

Figure 77. HIV infection deaths per 100,000 population, 2017

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics Survey - Mortality, 2017.

Note: For this measure, lower rates are better. HIV diagnosis data are estimates from 50 states, the District of Columbia, and 6 U.S. dependent areas. Estimates for 2017 are preliminary and are not included in trend calculations.

- In 2017, the death rate from HIV infections was higher in large central metro areas (2.5 per 100,000 population) compared with the rate in large fringe metro areas (1.1 per 100,000 population) (Figure 77).
- The 2015 achievable benchmark was 0.75 per 100,000 population. At the current rate of decrease, overall, the benchmark could be achieved in 4 years for large central metro and in 2 years for large fringe metro areas.
- The top 10% of states and territories that reached the benchmark are Kansas, Kentucky, Minnesota, Missouri, Ohio, and Washington (more than 5 states reached the benchmark due to ties).

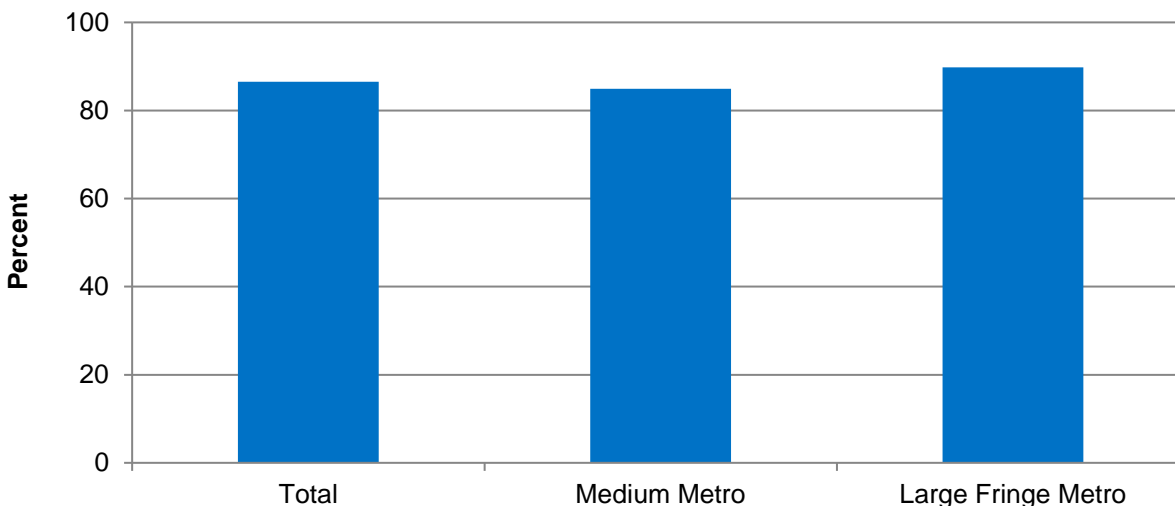
An HHS initiative to eliminate new HIV infections is underway. The goal is “to reduce new HIV infections in the United States by 75 percent in five years and by 90 percent by 2030.”⁸⁸ For the first 5 years, this [initiative](#) will focus on 57 priority jurisdictions where more than 50% of new HIV diagnoses occurred in 2016 and 2017 and 7 states with a disproportionate occurrence of HIV in rural areas.

Federal efforts to reduce HIV-related mortality include the promotion of treatment therapies such as antiretroviral therapy, as well as pre-exposure prophylaxis and postexposure prophylaxis.⁸⁹ Several HHS agencies provide a federal response to the HIV epidemic, including HRSA’s HIV/AIDS Bureau, which administers the Ryan White HIV/AIDS Program (RWHAP). RWHAP is the largest federal program focused on providing HIV care and treatment to patients with inadequate or no insurance. Through RWHAP’s partnerships, more than 512,000 people receive care annually.

Healthy Living Measure: Wellness Visits

Wellness visits for children offer preventive care, allow tracking of growth and development, identify concerns, and establish a team-based model of care for the provider, the child, and his or her parents or caregivers. The American Academy of Pediatrics has provided an online schedule for wellness visits.⁹⁰

Figure 78. Children ages 0-17 with a wellness checkup in the past 12 months, 2018

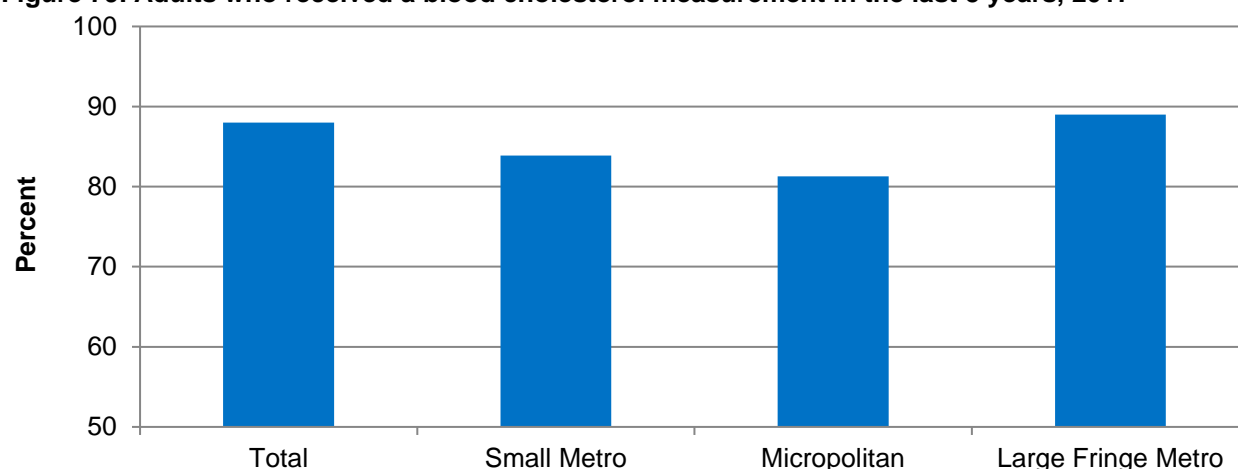


Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2018.

- In 2018, the percentage of children ages 0-17 who had a wellness checkup in the past year was lower in medium metro (84.9%) than in large fringe metro areas (89.8%) (Figure 78).

Healthy Living Measure: Cholesterol Check

Optimal cholesterol management is an important part of reducing atherosclerotic cardiovascular disease. Evidence-based treatments are readily available. Treatment protocols and decision aids can assist clinical teams and their patients in making informed decisions that can lead to fewer heart attacks and strokes.

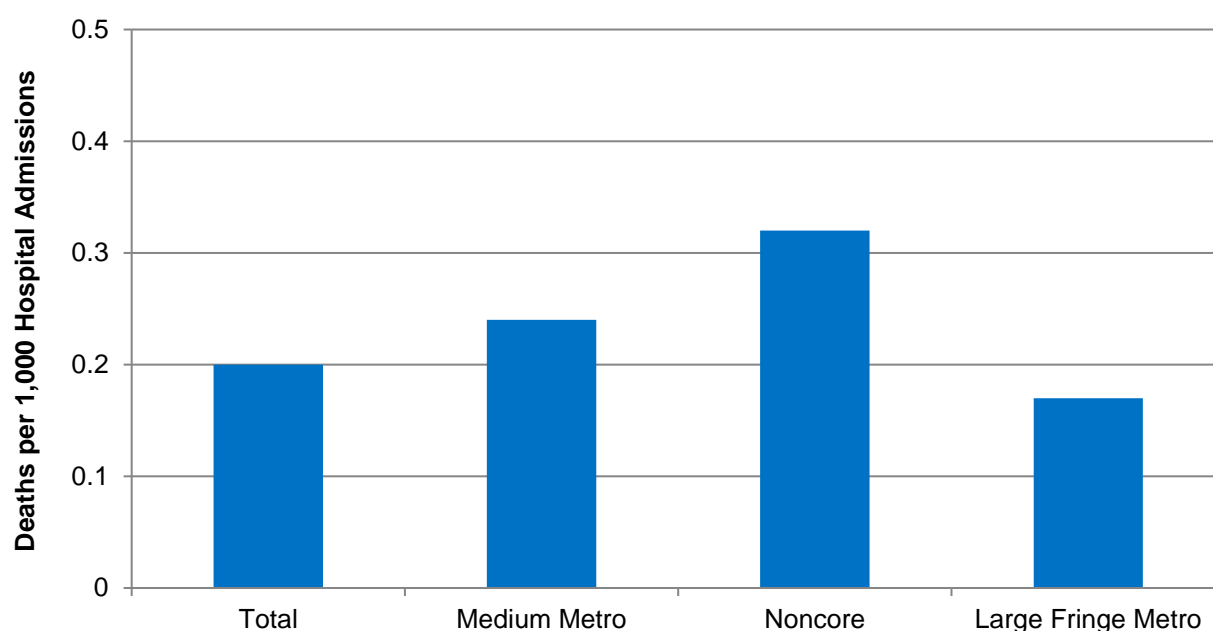
Figure 79. Adults who received a blood cholesterol measurement in the last 5 years, 2017

Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2017.

- In 2017, the percentage of adults who received a blood cholesterol measurement in the last 5 years was lower in small metropolitan (83.9%) and micropolitan areas (81.3%) than in large fringe metro areas (89.0%) (Figure 79).

Patient Safety Measure: Unexpected Deaths After Hospital Admission

Death within 30 days of a hospital discharge may indicate that patients did not receive appropriate care during their hospital admission.⁹¹ Factors contributing to death include noncontinuous care or treatment and inadequate communication with the care team.⁹²

Figure 80. Deaths per 1,000 hospital admissions with expected low mortality, 2017

Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, 2017.

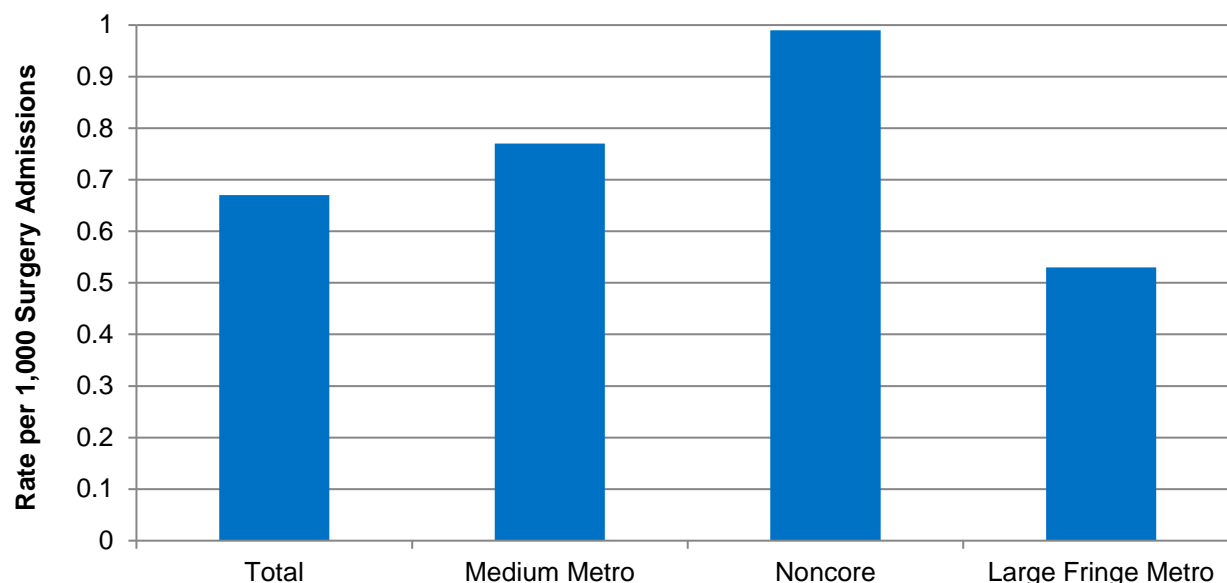
Note: For this measure, lower rates are better.

- In 2017, the death rate for conditions with expected low mortality was higher in medium metropolitan (0.24 per 1,000 admission) and noncore areas (0.32 per 1,000 admission) than in large fringe metro areas (0.17 per 1,000 admission) (Figure 80).

Patient Safety Measure: Surgical Complications

Wound dehiscence is when an incision breaks open and does not heal properly after surgery, often within 10 days.⁹³ This postoperative complication can result in increased morbidity and mortality for patients who have had abdominopelvic surgeries.⁹⁴

Figure 81. Reclosure of postoperative abdominal wound dehiscence per 1,000 abdominopelvic surgery admissions of length 2 or more days, adults, 2017



Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, 2017.

Note: For this measure, lower rates are better.

- In 2017, the rate of adults who had a wound reclosed after abdominopelvic surgery was worse in noncore areas (0.99 per 1,000 surgery admissions) and medium metro areas (0.77 per 1,000 surgery admissions) compared with large fringe metro areas (0.53 per 1,000 surgery admissions) (Figure 81).

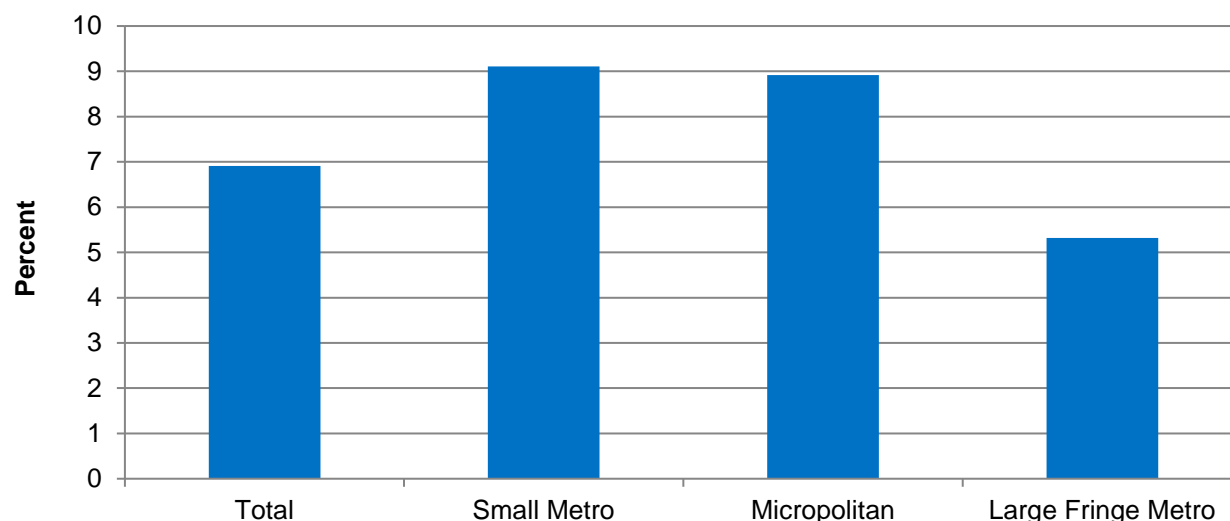
Person-Centered Measure: Treatment by Healthcare Providers

Overall, effective communication leads to increased patient and clinician satisfaction, increased trust with the clinician, and functional and psychological well-being. Effective communication also leads to improved outcomes in specific diseases, including:

- A small but significant absolute risk reduction of mortality from coronary artery disease,
- Improved control of diabetes and hyperlipidemia,

- Better adherence to antihypertensives,
- Bereavement adjustment in caregivers of cancer patients, and
- Higher self-efficacy of adherence to HIV medications.⁹⁵

Figure 82. Adults 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, 2017

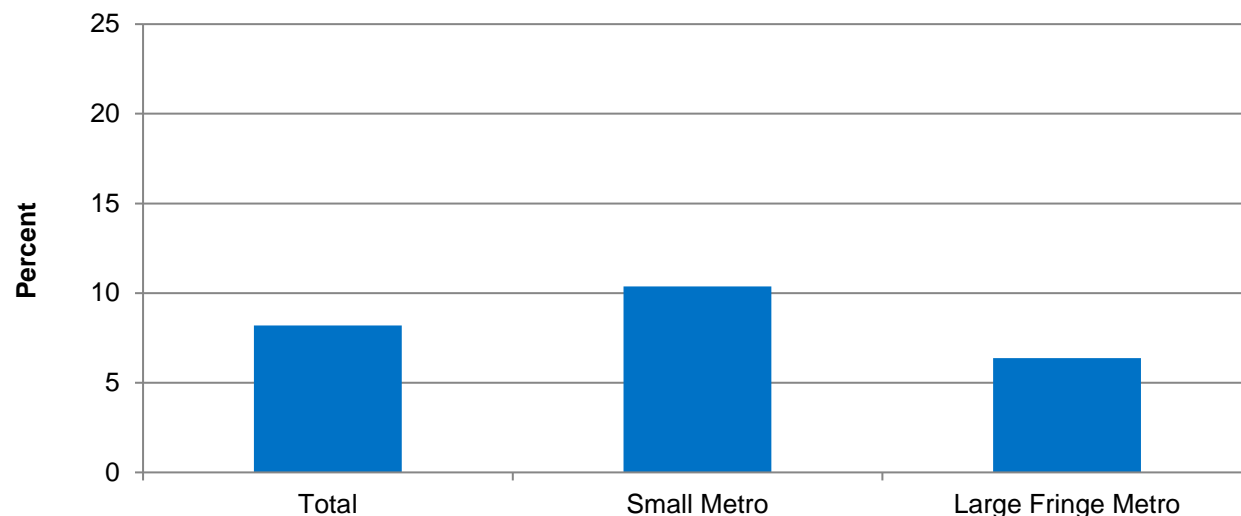


Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

Note: For this measure, lower rates are better.

- In 2017, the percentage of adults 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 was higher in small metro areas (9.1%) and micropolitan areas (8.9%) compared with large fringe metro areas (5.3%) (Figure 82).

Figure 83. Adults who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never listened carefully to them, 2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2017.

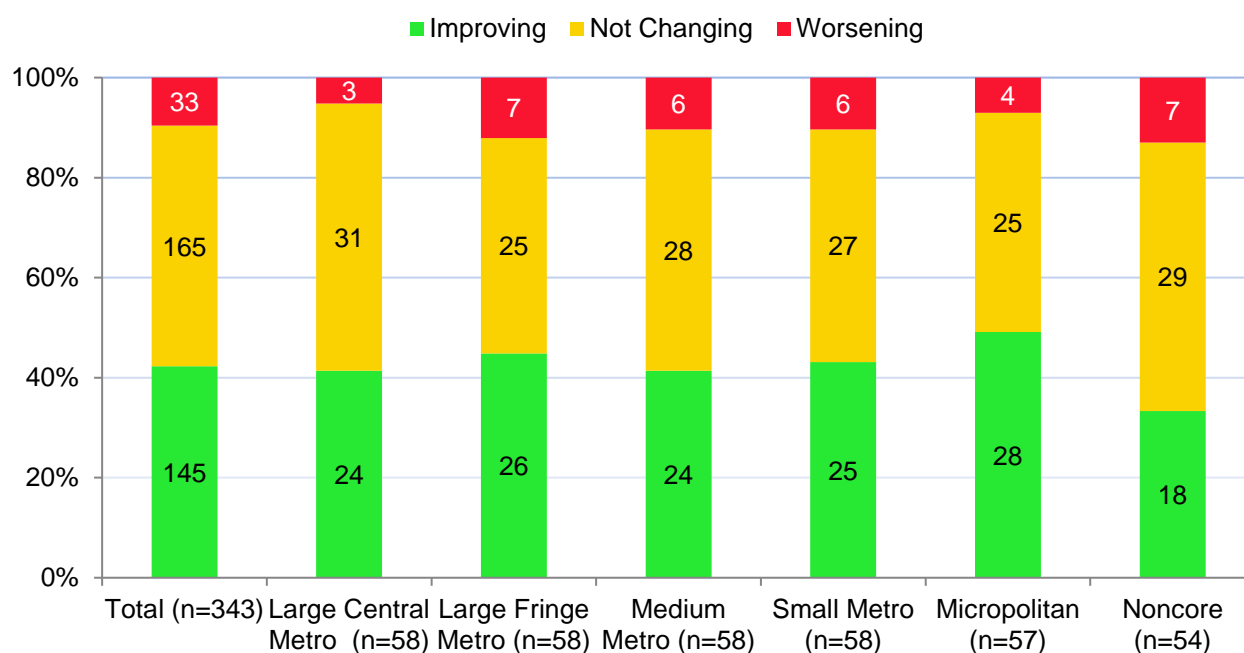
Note: For this measure, lower rates are better.

- In 2017, the percentage of adults who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never listened carefully to them was higher in small metro areas (10.4%) compared with large fringe metro areas (6.4%) (Figure 83).

Changes in Quality of Care by Residence Location

Nearly half of quality measures for micropolitan areas showed improvement over time but only a third of noncore measures showed improvement.

Figure 84. Number and percentage of all quality measures that were improving, not changing, or worsening over time, total and by residence location, from 2002 through 2016, 2017, or 2018



Key: n = number of measures.

Note: For each measure with at least four data points over time, the estimates are realigned to the negative direction. Then, unweighted log-linear regression is used to calculate average annual percent change and to assess statistical significance. Progress on individual measures is determined as follows:

- **Improving:** The average annual percentage change is 1% or greater in the desirable direction, and $p < 0.10$.
- **Not Changing:** The average annual percentage change is $\leq 1\%$ in either the desirable or undesirable direction or $p > 0.10$.
- **Worsening:** The average annual percentage change is 1% or greater in the undesirable direction, and $p < 0.10$.

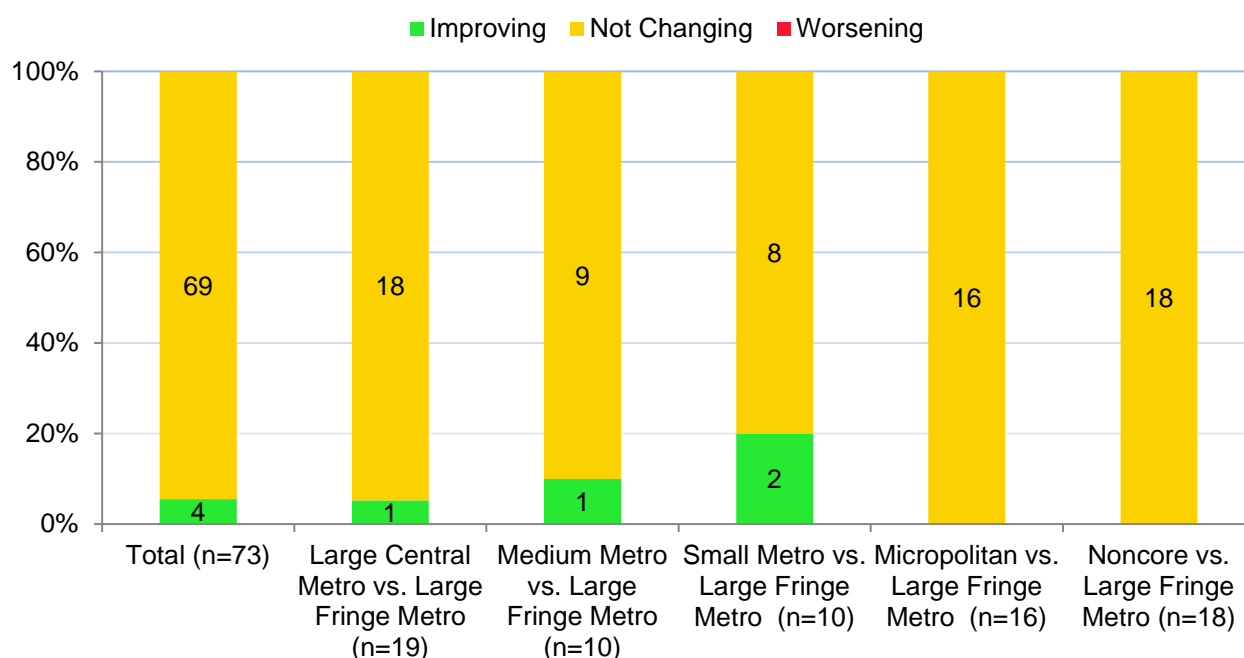
Different data sources have different data years. For example, the most recent data year available for trending from the Medical Expenditure Panel Survey (AHRQ MEPS) is 2016 and from the Centers for Disease Control and Prevention, National Health Interview Survey (CDC NHIS) is 2018.

- Across 58 quality measures, 12% showed worsening for large fringe metro, and 10% showed worsening for medium metro and small metro. Approximately 40% were improving for large central metro, large fringe metro, medium metro, and small metro (Figure 84).
- Micropolitan areas showed the most improvement, with 49% of measures improving.
- Noncore areas had fewer improving measures (33%) and more measures worsening (13%) compared with other areas.

Changes in Disparities by Residence Location

Nonmetropolitan areas showed no improvement in disparities during the most recent data year.

Figure 85. Number and percentage of quality measures with disparity at baseline for which disparities related to residence location were improving or not changing over time, 2002 through 2015, 2016, 2017, or 2018



Key: n = number of measures.

- Disparities by residence location remained unchanged for most quality measures (Figure 85).
- Four measures showed improvement in disparities:
 - One Effective Treatment: Hospital inpatient stays involving opioid-related diagnoses (large central metro)

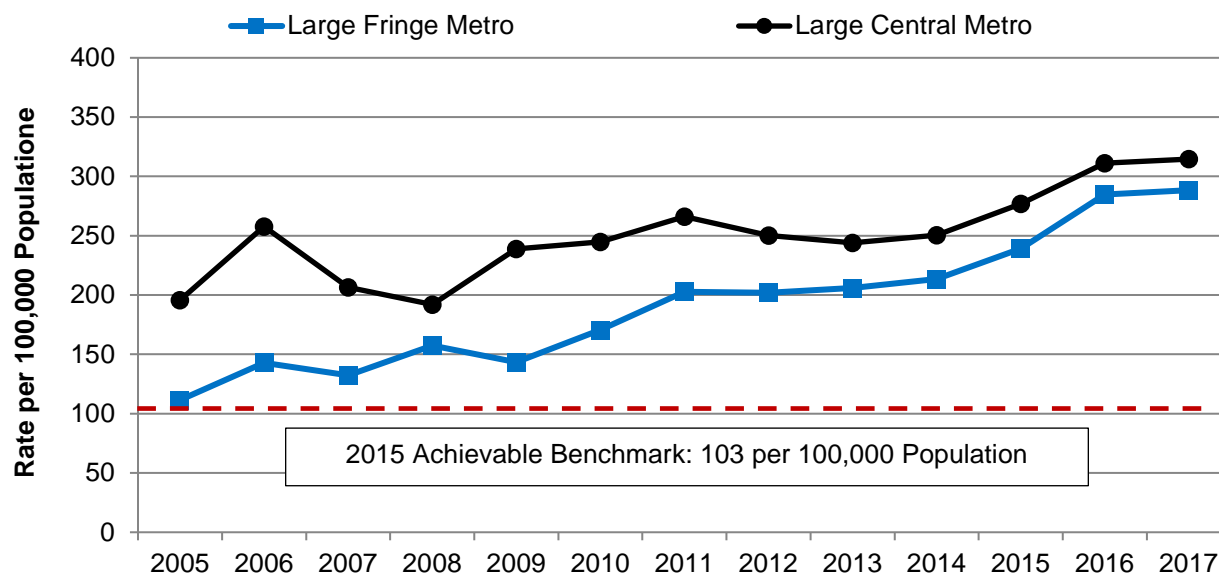
■ Two Affordable Care:

- ♦ People unable to get or delayed in getting needed medical care due to financial or insurance reasons (medium metro, small metro)
- ♦ People unable to get or delayed in getting needed prescription medicines due to financial or insurance reasons (small metro)^{viii}

Inpatient Stays Due to Opioid Use

Increased availability and overuse of opioid medications (both prescription and nonprescription drugs) have contributed to adverse outcomes for patients, including increased risk of opioid use disorder, misuse of medications, and potential overdoses. The rapid and ongoing rise in both numbers of hospitalizations and their costs suggests that the burden of prescription opioid overdoses may threaten the infrastructure and finances of U.S. hospitals.⁹⁶

Figure 86. Hospital inpatient stays involving opioid-related diagnoses per 100,000 population, 2005-2017



Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, 2005-2017.

Note: For this measure, lower rates are better.

- From 2005 to 2017, the gap between people in large fringe metro areas and those in large central metro areas in opioid-related hospital stays narrowed. However, a disparity remained and the rates for both populations were worsening.

^{viii} The figure was not included for this measure because 5 years of data do not meet the criteria for statistical reliability, data quality, or confidentiality.

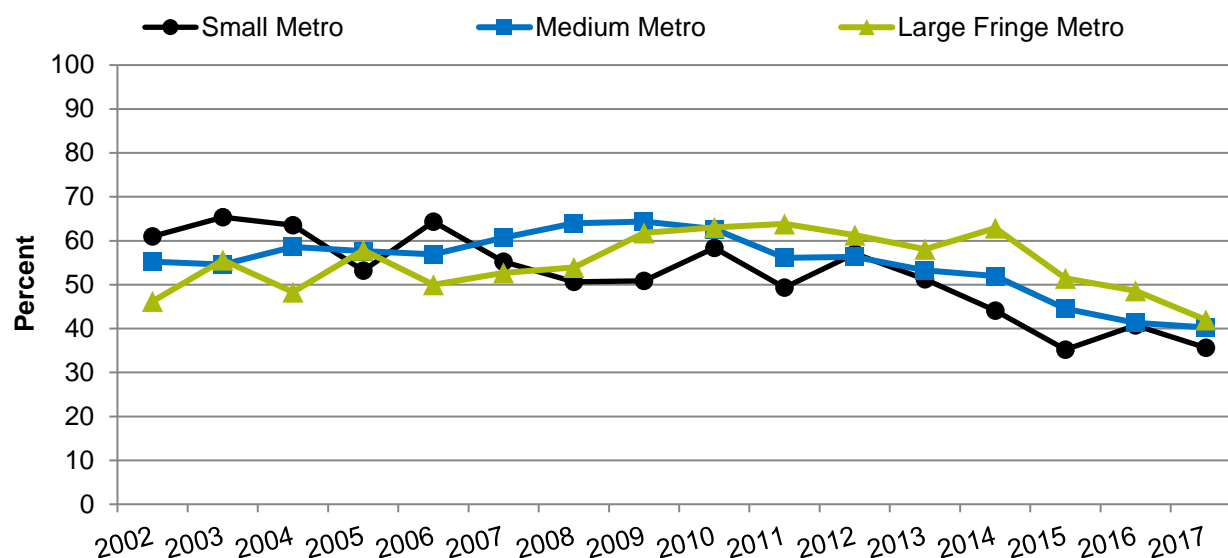
- In 2005, the rate was 111.5 per 100,000 population in large fringe metro areas vs. 195.8 per 100,000 population in large central metro areas. In 2017, both rates had risen, to 288.4 in large fringe metro areas and 314.6 in large central metro areas (Figure 86).
- The 2015 achievable benchmark was 103 per 100,000 population. Neither the large central metropolitan population nor the large fringe metro population has made progress toward the benchmark.
- The top 10% of states and territories that reached the benchmark are Georgia, Iowa, Nebraska, Texas, and Wyoming. In 2016, Georgia, Iowa, Nebraska, South Carolina, South Dakota, Texas, and Wyoming reached the benchmark.

Resources

- In 2017, HHS launched a departmentwide initiative with a five-point strategy to combat the opioid epidemic. Many agencies supported this initiative by establishing specific research opportunities, resources, and data to support providers, patients, and researchers. More information is available at <https://www.hhs.gov/opioids/>.
- The U.S Department of Justice, Office of Justice Programs' Comprehensive Opioid Abuse Program (COAP), provides funding supports to more than 200 state, local, and tribal grantees and provides training and technical assistance. Through grantees in 47 states, COAP provides innovative, systemwide approaches to identify, address, treat, and support people affected by the opioid epidemic.

Delays in Needed Care

Figure 87. People unable to get or delayed in getting needed medical care due to financial or insurance reasons, 2002-2017



Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2017.

Note: For this measure, lower rates are better.

- From 2002 to 2017, the gap narrowed between people in large fringe metro areas and those in small and medium metro areas who were unable to get or delayed in getting needed medical care due to financial or insurance reasons.
- Between 2002 and 2017, for residents of small metro areas, the percentage delaying care decreased from 61% to 35.6%. Among residents of medium metro areas, the percentage decreased from 55.2% to 40.3% (Figure 87).

Resources

- **Healthy Rural Hometown Initiative:** a 5-year multiprogram effort to identify strategies to address the underlying factors that drive growing rural disparities related to heart disease, cancer, unintentional injury, chronic lower respiratory disease, and stroke. In the first phase of this initiative, HRSA is implementing strategies to encourage its rural community-based programs to focus on these disparities. The second phase of this initiative will work across other HHS entities to leverage other programs and research funding streams to ensure the Department's efforts address the underlying factors that drive rural disparities in these causes of potential excess death.
- **Area Health Education Centers (AHECs):** HRSA funded programs that develop and enhance education and training networks within communities, academic institutions, and community-based organizations to increase diversity among health professionals. AHECs also work to broaden the distribution of the health workforce, enhance healthcare quality, and improve healthcare delivery to rural and underserved areas and populations. AHECs provide necessary health literacy initiatives to rural communities, which include literacy initiatives on oral health, through its community-based activities to increase the primary care workforce in rural and underserved sites.

LOOKING FORWARD

The 2019 NHQDR has examined data across more than 25 federal data sources to describe trends and disparities in access measures and quality measures across six domains. The report offers a comprehensive assessment of the best and worst performing quality and access measures over the past year. While trend data are still limited in this year's analysis, it is still clear that disparities exist by race, ethnicity, income, age, insurance status, residence location, and many other variables.

Opportunities for Measurement

The NHQDR measure set is assessed annually to explore whether new clinical areas can be included to provide a more complete representation of clinical, quality, and disparity issues across the United States. Recently, more data on the healthcare workforce and access to healthcare have been added. The NHQDR measure set will continue to be assessed for future reports to maintain its relevance to current quality measurement and quality improvement issues.

Notable Examples of Collaboration for Healthcare Quality

HHS agencies work in collaboration with federal and nonfederal partners to enhance and protect the health and well-being of all Americans, and the following examples intend to support improvements that would influence measures included in future reports.

National Action Plan To Advance Patient Safety

The National Steering Committee for Patient Safety is co-chaired by the Agency for Healthcare Research and Quality and the Institute for Healthcare Improvement. The National Steering Committee for Patient Safety, with members from the healthcare, policy, regulatory, and advocacy communities, is charged with creating a national action plan to guide patient safety efforts across the country in a cohesive and coordinated fashion.

The [National Action Plan To Advance Patient Safety](#) includes 17 recommendations to advance patient safety, with a focus on eliminating inequities at the point of care. Supplemented by both a Self-Assessment Tool and an Implementation Resource Guide, the Plan centers on four foundational and interdependent priority areas:

- **Culture, Leadership, and Governance:** to demonstrate and foster commitments to safety as a core value and promote the development of safety cultures.
- **Patient and Family Engagement:** to instill the practice of codesigning and coproducing care with patients, families, and care partners to ensure their meaningful partnership in all aspects of care design, delivery, and operations.

- **Workforce Safety:** to ensure the safety and resiliency of organizations and workforces as a precondition to advancing patient safety with a unified, total systems-based approach to eliminate harm to both patients and the workforce.
- **Learning System:** to foster networked and continuous learning within and across healthcare organizations at all levels to encourage widespread sharing, learning, and improvement.

For more information on patient safety measures included in the NHQDR, see the [NHQDR Chartbook on Patient Safety](#).

Maternal Morbidity

Addressing disparities in maternal health and birth outcomes is a national priority. [The Surgeon General's Call to Action To Improve Maternal Health](#) and the 2020 U.S. Department of Health and Human Services (HHS) [Healthy Women, Healthy Pregnancies, Healthy Futures: Action Plan To Improve Maternal Health](#) are collaborations across federal agencies and stakeholders for mothers and babies. Both of these efforts are based on the life-course approach.

The Call to Action engages and equips individuals, organizations, agencies, and entire communities with evidence-based actions that will improve women's health prior to, during, and after pregnancy. The HHS Action Plan summarizes the Department's work to ensure the United States is one of the safest countries in the world in which to give birth, realizing this vision goes beyond the federal government.

The supplemental measures in the NHQDR related to maternal morbidity and mortality include:

- **Morbidity measures:**
 - Venous thromboembolism or pulmonary embolism per 1,000 delivery discharges.
 - Hypertensive disorders in pregnancy per 1,000 delivery hospitalizations.
 - Severe postpartum hemorrhage per 1,000 delivery hospitalizations.
 - Severe maternal morbidity per 1,000 delivery hospitalizations.
 - Cesarean deliveries among low-risk first births.
- **Mortality measures:**
 - In-hospital deaths per 100,000 delivery hospitalizations.

These data are available through the online query tool at <https://nhqrnet.ahrq.gov/inhqrdr/data/query> and further analysis and discussion is also featured in the latest [NHQDR Chartbook on Patient Safety](#).

Top Priorities and Tasks at HHS

HHS has refocused efforts on several priorities and tasks. These efforts work to advance scientific research and improve health services for affected populations. In support of these aims, the NHQDR team will continue to explore opportunities to include additional data relevant to these topics in future reports. This section elaborates on how the NHQDR's activities remain relevant to the many ongoing HHS priorities.

COVID-19

While the data in this report predate the COVID-19 pandemic, COVID-19 is significantly affecting several aspects of healthcare. How COVID-19 will influence healthcare disparities and quality is uncertain, but the potential influences are many. For example, people with underlying conditions and older adults are at increased risk for severe illness due to COVID-19 and may experience additional burdens from associated healthcare safety and quality concerns.¹ Similarly, initial data show a disproportionate impact of the pandemic on racial and ethnic groups.² Future versions of the report will track the long-term effects of COVID-19 related to healthcare quality and disparities when data covering 2020 are available.

HIV Research

In 2019, the Administration established an initiative to end the HIV epidemic in the United States, with a goal of reducing new infections by 75% in 5 years and by 90% in 10 years.³ [Ending the HIV Epidemic: A Plan for America](#) (EHE) aims to end the HIV epidemic in the United States by 2030. EHE is the operational plan developed by agencies across HHS to pursue that goal.

The EHE plan leverages critical scientific advances in HIV prevention, diagnosis, treatment, and outbreak response by coordinating the highly successful programs, resources, and infrastructure of many HHS agencies and offices. In its first phase, the initiative is focusing on areas where HIV transmission occurs most frequently, providing 57 geographic focus areas with a rapid infusion of additional resources, expertise, and technology to develop and implement locally tailored EHE plans.

The NHQDR currently tracks four unique HIV-related quality measures, one mortality measure, and five supplemental measures (not shown here).

The core measures in the NHQDR related to HIV include:

- New HIV cases per 100,000 population age 13 and over.
- People age 13 and over living with HIV who know their serostatus.
- People age 13 and over living with diagnosed HIV who had at least two CD4 or viral load tests performed at least 3 months apart during the last year, among reporting jurisdictions.
- People age 13 and over living with diagnosed HIV whose most recent viral load in the last 12 months was under 200 copies/mL.
- HIV infection deaths per 100,000 population.

Among these measures, this report has already highlighted the widening and narrowing disparities experienced by various racial and ethnic groups. These data are available through the online query tool at <https://nhqrnet.ahrq.gov/inhqrdr/data/query>. Moving forward, the NHQDR team will continue to track these measures with our data partners to understand how differences in quality measurement, disparities, and mortality are occurring over time.

Smoking Cessation

Smoking is the leading preventable cause of disease and death in the United States. More than 16 million Americans are living with a disease caused by smoking. Tobacco use causes about 480,000 deaths per year in the United States.⁴

For nearly 60 years, the Office of the Surgeon General has been reporting on the health hazards of smoking. The [32nd Surgeon General's report on smoking and health](#), published in 2014, highlights half a century of progress in controlling and preventing tobacco use in the United States.

The core measures in the NHQDR related to smoking cessation include:

- Adult current smokers who had a doctor's office or clinic visit in the last 12 months who received advice from their providers to quit smoking.
- Children for whom a health provider gave advice within the past 2 years about how smoking in the house can be bad for a child.

Physical Activity and Nutrition

Being physically active is one of the most important actions people can take to improve their health. Based on the latest scientific evidence, the second edition of the [Physical Activity Guidelines for Americans](#) is a resource for health professionals, policymakers, and the general public that provides guidance on how individuals can improve their health through regular physical activity.

The core measures in the NHQDR related to physical activity and nutrition include:

- Physical Activity (Adult and Pediatric Measures):
 - Adults with obesity who ever received advice from a health professional to exercise more.
 - Children ages 2-17 for whom a health provider gave advice within the past 2 years about the amount and kind of exercise, sports, or physically active hobbies they should have.
- Nutrition – Pediatric Measures:
 - Children ages 2-19 years with obesity.
 - Children ages 2-19 years with obesity who had been told by a doctor or health professional that they were overweight.
 - Children ages 2-17 for whom a health provider gave advice within the past 2 years about healthy eating.
- Nutrition – Adult Measures:
 - Adults age 20 and over with obesity who had been told by a doctor or health professional that they were overweight.
 - Adults with obesity who ever received advice from a health professional about eating fewer high-fat or high-cholesterol foods.

Among these measures, the data show that obesity affects populations disparately. These data are available through the online query tool at <https://nhqrnet.ahrq.gov/inhqdr/data/query>. Moving forward, the NHQDR team will continue to track these measures with our data partners to understand how differences in quality measurement and disparities are occurring over time.

Opioids

In 2017, HHS identified the opioid epidemic as an urgent national priority⁵ and outlined a five-point strategy to combat the epidemic,⁶ including:

- Improving access to treatment and recovery services,
- Promoting use of overdose-reversing drugs,
- Strengthening our understanding of the epidemic through better public health surveillance,
- Providing support for cutting-edge research on pain and addiction, and
- Advancing better practices for pain management.

In June 2018, SAMHSA published the Opioid Overdose Prevention Toolkit in [English](#) and [Spanish](#) that offers strategies to healthcare providers, communities, and local governments for developing practices and policies to help prevent opioid-related overdoses and deaths.

The NHQDR continues to track data for eight opioid-related measures and will add new measures as better data become available:

- Hospital inpatient stays related to opioid use per 100,000 population.
- Emergency department visits involving opioid-related diagnoses per 100,000 population.
- Percentage and population estimates of past-year opioid (either prescription opioid or heroin) use disorder among people age 12 and over.
- Rate per 100,000 population of deaths from drug overdoses involving opioids.
- Rate per 100,000 population of deaths from drug overdoses involving natural and semisynthetic opioids (e.g., oxycodone, hydrocodone, or morphine).
- Rate per 100,000 population of deaths from drug overdoses involving synthetic opioids other than methadone (e.g., prescription and illicit fentanyl, tramadol).
- Adults who filled an outpatient opioid prescription in the calendar year.
- Adults who filled four or more outpatient opioid prescriptions in the calendar year.

The NHQDR team with the Substance Abuse Mental Health Administration (SAMHSA) produced a data spotlight in 2020 to examine disparities in opioid mortality. The [data spotlight](#) and [infographic](#) show that Blacks are experiencing fast-rising rates of overdose deaths involving synthetic opioids other than methadone.

SAMHSA is further exploring how the opioid crisis is disproportionately affecting vulnerable racial and ethnic populations, including Hispanics and Blacks. In April 2020, SAMHSA published an issue brief titled “[The Opioid Crisis and the Black/African American Population: An Urgent Issue](#)” and in July and October 2020, SAMHSA published “The Opioid Crisis and the Hispanic/Latino Population: An Urgent Issue” in [English](#) and [Spanish](#). Both documents detail additional resources to combat the opioid crisis.

SAMHSA has also published a Behavioral Health Treatment Services Locator. This tool is a confidential and anonymous source of information for people seeking treatment facilities in the United States or U.S. territories for substance use, addiction, or mental health issues. The locator is available online at <https://findtreatment.samhsa.gov/>.

Value-Based Care

Americans deserve better quality, affordable healthcare. Value based care (VBC) rewards healthcare providers and organizations with incentive payments for delivering high-quality care and better patient health outcomes. HHS is working to transform our system from one that pays for procedures and sickness (volume-based care) to one that pays for outcomes and health (VBC). The Department seeks to do so by focusing on four areas:

- Maximizing the promise of health information technology, including by promoting interoperability.
- Boosting transparency around price and quality.
- Pioneering bold new models in Medicare and Medicaid.
- Removing government burdens and barriers, especially those impeding care coordination.⁷

The Centers for Medicare & Medicaid Services (CMS) operates multiple VBC programs. These programs are continually monitored and include:

- End-Stage Renal Disease Quality Incentive Program ([ESRD QIP](#)) (2012).
- Hospital Value-Based Purchasing ([HVBP](#)) Program (2012).
- Hospital Readmission Reduction Program ([HRRP](#)) (2012).
- Hospital Acquired Conditions ([HAC](#)) Reduction Program (2014).
- Home Health Value-Based Purchasing ([HHVBP](#)) Model (2016; implemented in nine states).
- Skilled Nursing Facility Value-Based Program ([SNFVBP](#)) (2018).⁸

In January 2017, CMS implemented another VBC program, the Quality Payment Program. This program consists of two tracks: participation in Advanced Alternative Payment Models (Advanced APMs) and the Merit-based Incentive Payment Systems (MIPS) programs. Clinicians must select one of the two tracks to participate in based on their practice size, specialty, location, or patient population.

Both the Advanced APM track and the MIPS track commit clinicians to practice VBC. MIPS provides performance-based Medicare payment adjustments for care given to Medicare patients. The Advanced APM track offers a customized payment approach to providers delivering high-quality care. More information is available in the CMS Quality Payment Program Overview at <https://qpp.cms.gov/about/qpp-overview>.

Future Research and Work

Readers can use this report and related NHQDR products including [Chartbooks](#) and [Data Spotlights](#) to learn more about the nation's progress in improving healthcare and to explore emerging topics. The report helps identify opportunities to improve quality and reduce disparities. Ongoing disparities in care by race, ethnicity, income, residence location, and other socioeconomic factors underscore that while we have made important strides in quality and accessibility of healthcare, these outcomes are not equitably experienced across the United States and much work remains.

REFERENCES

Overview

1. Gardner JW, Sanborn JS. Years of potential life lost (YPLL)--what does it measure? *Epidemiology* 1990;1:322-9. <https://www.ncbi.nlm.nih.gov/pubmed/2083312> [abstract]. Accessed December 3, 2020.
2. Zhang X, Lin D, Pforsich H, et al. Physician workforce in the United States of America: forecasting nationwide shortages. *Hum Resour Health* 2020;18(1):8. <https://pubmed.ncbi.nlm.nih.gov/32029001/>. Accessed December 3, 2020.
3. Snyder CR, Frogner BK, Skillman SM. Facilitating racial and ethnic diversity in the health workforce. *J Allied Health* 2018;47(1):58-65. <https://pubmed.ncbi.nlm.nih.gov/29504021/>. Accessed December 3, 2020.
4. Brown T, Liu JX, Scheffler RM. Does the under- or overrepresentation of minority physicians across geographical areas affect the location decisions of minority physicians? *Health Serv Res* 2009;44:1290-1308. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2739029/>. Accessed December 3, 2020.
5. Day JC, Christnacht C. Women hold 76% of all health care jobs, gaining in higher-paying occupations. Suitland, MD: U.S. Census Bureau; August 14, 2019. <https://www.census.gov/library/stories/2019/08/your-health-care-in-womens-hands.html>. Accessed December 3, 2020.
6. Greenwood BN, Carnahan S, Huang L. Patient–physician gender concordance and increased mortality among female heart attack patients. *PNAS* 2018 Aug 21;115(34):8569-74. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6112736/>. Accessed December 3, 2020.
7. Peabody MR, Eden AR, Douglas M, et al. Board certified family physician workforce: progress in racial and ethnic diversity. *J Am Board Fam Med* 2018 Nov;31(6):842-3. <https://www.jabfm.org/content/31/6/842>. Accessed December 3, 2020.
8. Malhotra J, Rotter D, Tsui J, et al. Impact of patient-provider race, ethnicity, and gender concordance on cancer screening: findings from Medical Expenditure Panel Survey. *Cancer Epidemiol Biomarkers Prev* 2017;26(12):1804-11. <https://cebp.aacrjournals.org/content/26/12/1804.long>. Accessed December 3, 2020.
9. Garcia RI, Blue Spruce G, Sinkford JC, et al. Workforce diversity in dentistry - current status and future challenges. *J Public Health Dent* 2017 Mar;77(2):99-104. Epub 2017 May 12. <https://pubmed.ncbi.nlm.nih.gov/28497850/>. Accessed December 3, 2020.
10. Phillips JM, Malone B. Increasing racial/ethnic diversity in nursing to reduce health disparities and achieve health equity. *Public Health Rep* 2014;129 Suppl 2(Suppl 2):45-50. <https://pubmed.ncbi.nlm.nih.gov/24385664/>. Accessed December 3, 2020.
11. Health Resources and Services Administration, National Center for Health Workforce Analysis. Sex, Race, and Ethnic Diversity of U.S. Health Occupations (2011-2015). Rockville, MD: U.S. Department of Health and Human Services; August 2017. <https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/diversityushealthoccupations.pdf>. Accessed December 3, 2020.
12. Bush AA. A conceptual framework for exploring the experiences of underrepresented racial minorities in pharmacy school. *Am J Pharm Educ* 2020 Jan;84(1):7544. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7055416/>. Accessed December 3, 2020.
13. O’Neil E, Dower C. Primary care health workforce in the United States. *Synth Proj Res Synth Rep* 2011;(22):72579. <https://pubmed.ncbi.nlm.nih.gov/22041996/>. Accessed December 3, 2020.
14. Naylor MD, Kurtzman ET. The role of nurse practitioners in reinventing primary care. *Health Aff (Millwood)* 2010;29(5):893-9. <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2010.0440?>

- [url_ver=Z39.88-2003&rft_id=ori:rid:crossref.org&rft_dat=cr_pub%20%20pubmed](#). Accessed December 3, 2020.
15. Crowe RP, Krebs W, Cash RE, et al. Females and minority racial/ethnic groups remain underrepresented in emergency medical services: a ten-year assessment, 2008-2017. *Prehosp Emerg Care* 2020 Mar-Apr;24(2):180-7. Epub 2019 Jul 24. <https://pubmed.ncbi.nlm.nih.gov/31225772/>. Accessed December 3, 2020.
 16. Beck AJ, Manderscheid RW, Buerhaus P. The future of the behavioral health workforce: optimism and opportunity. *Am J Prev Med* 2018;54(6):S187-S189. [https://www.ajpmonline.org/article/S0749-3797\(18\)31627-1/fulltext](https://www.ajpmonline.org/article/S0749-3797(18)31627-1/fulltext). Accessed December 3, 2020.
 17. Health Resources and Services Administration, National Center for Health Workforce Analysis; Substance Abuse and Mental Health Services Administration, Office of Policy, Planning, and Innovation. National Projections of Supply and Demand for Behavioral Health Practitioners: 2013-2015. Rockville, MD: U.S. Department of Health and Human Services; 2015. <https://bhw.hrsa.gov/sites/default/files/bhw/health-workforce-analysis/research/projections/behavioral-health2013-2025.pdf>. Accessed December 3, 2020.
 18. Olfson M. Building the mental health workforce capacity needed to treat adults with serious mental illnesses. *Health Aff (Millwood)* 2016;35(6):983-90. <https://www.healthaffairs.org/doi/pdf/10.1377/hlthaff.2015.1619>. Accessed December 3, 2020.
 19. Substance Abuse and Mental Health Services Administration. National Survey on Drug Use and Health: 2018. https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/Assistant-Secretary-nsduh2018_presentation.pdf. Accessed December 3, 2020.
 20. Substance Abuse and Mental Health Services Administration. 2018 National Survey on Drug Use and Health: Asians/Native Hawaiian and Other Pacific Islanders (NHOPI). https://www.samhsa.gov/data/sites/default/files/reports/rpt23248/3_Asiatic_NHOPI_2020_01_14.pptx. Accessed December 3, 2020.
 21. Substance Abuse and Mental Health Services Administration. 2018 National Survey on Drug Use and Health: African Americans. https://www.samhsa.gov/data/sites/default/files/reports/rpt23247/2_AfricanAmerican_2020_01_14.pptx. Accessed December 3, 2020.
 22. Substance Abuse and Mental Health Services Administration. 2018 National Survey on Drug Use and Health: Hispanics, Latino or Spanish Origin or Descent. https://www.samhsa.gov/data/sites/default/files/reports/rpt23249/4_Hispanic_2020_01_14.pptx. Accessed December 3, 2020.
 23. Eylem O, de Wit L, van Straten A, et al. Stigma for common mental disorders in racial minorities and majorities a systematic review and meta-analysis. *BMC Public Health* 2020;20(1):1-20. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7278062/>. Accessed December 3, 2020.
 24. Substance Abuse and Mental Health Services Administration, Center for Mental Health Services; National Institute of Mental Health. Mental Health: Culture, Race, and Ethnicity: A Supplement to Mental Health: A Report of the Surgeon General. Washington, DC: Department of Health and Human Services, Public Health Service, Office of the Surgeon General; August 2001. <https://www.ncbi.nlm.nih.gov/books/NBK44243/>. Accessed December 3, 2020.
 25. Wahowiak L. Addressing stigma, disparities in minority mental health: access to care among barriers. *Nation's Health* 2015 Feb;45 (1):1-20. <https://thenationshealth.aphapublications.org/content/45/1/1.3>. Accessed December 3, 2020.
 26. Santiago CD, Miranda J. Progress in improving mental health services for racial-ethnic minority groups: a ten-year perspective. *Psychiatr Serv* 2014;65(2):180-5. <https://ps.psychiatryonline.org/doi/pdfplus/10.1176/appi.ps.201200517>. Accessed December 3, 2020.

27. Alegria M, Roter DL, Valentine A, et al. Patient-clinician ethnic concordance and communication in mental health intake visits. *Patient Educ Couns* 2013 Nov;93(2):188-96. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3800470/>. Accessed December 15, 2020.
28. U.S. Bureau of Labor Statistics. Occupational Outlook Handbook: Psychologists. Last modified September 1, 2020. <https://www.bls.gov/ooh/life-physical-and-social-science/psychologists.htm>. Accessed December 3, 2020.
29. Centers for Medicare & Medicaid Services. National Health Expenditures by Type of Service and Source of Funds, CY 1960-2017. Last modified December 17, 2019. <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.html>. Accessed December 3, 2020.
30. Centers for Medicare & Medicaid Services. National Health Expenditure Accounts: Methodology Paper, 2018: Definitions, Sources, and Methods. <https://www.cms.gov/files/document/definitions-sources-and-methods.pdf>. Accessed December 3, 2020.

Access to Healthcare and Disparities in Access

1. Institute of Medicine, Committee on Monitoring Access to Personal Health Care Services. Access to Health Care in America. Millman M, ed. Washington, DC: National Academies Press; 1993. <https://www.ncbi.nlm.nih.gov/books/NBK235882/>. Accessed December 3, 2020.
2. Office of Disease Prevention and Health Promotion. HealthyPeople.gov. Access to Health Services. <https://www.healthypeople.gov/2020/topics-objectives/topic/Access-to-Health-Services>. Accessed December 3, 2020.
3. National Academies of Science, Engineering, and Medicine. Communities in Action: Pathways to Health Equity. Washington, DC: National Academies Press; 2017. <https://pubmed.ncbi.nlm.nih.gov/28418632/>. Accessed December 3, 2020.
4. Sommers BD, Maylone B, Blendon RJ, et al. Three-year impacts of the Affordable Care Act: improved medical care and health among low-income adults. *Health Aff* 2017;36(6): 1119-28. <https://pubmed.ncbi.nlm.nih.gov/28515140/>. Accessed December 3, 2020.
5. Oral Health in America: A Report of the Surgeon General. Rockville, MD: National Institute of Dental and Craniofacial Research, National Institutes of Health; 2000. <https://www.nidcr.nih.gov/research/data-statistics/surgeon-general>. Accessed December 3, 2020.
6. Stephens MB, Wiedemer JP, Kushner GM. Dental problems in primary care. *Am Fam Physician* 2018;98(11):654-60. <https://www.aafp.org/afp/2018/1201/p654.html>. Accessed August 13, 2020.
7. Fullerton CA, Witt WP, Chow CM, et al. Impact of a usual source of care on health care use, spending, and quality among adults with mental health conditions. *Adm Policy Ment Health* 2018 May;45(3):462-71. <https://pubmed.ncbi.nlm.nih.gov/29189994/>. Accessed December 3, 2020.
8. Committee on Optimizing Scheduling in Health Care; Institute of Medicine. Kaplan K, Hamilton Lopez M, McGinnis JM, eds. Transforming Health Care Scheduling and Access: Getting to Now. Washington, DC: National Academies Press; 2015. <https://www.ncbi.nlm.nih.gov/books/NBK316132/>. Accessed December 3, 2020.
9. Brunner J, Rose DE, Chuang E, et al. The role of healthcare system hassles in delaying or forgoing care. *Healthc (Amst)* 2020 Feb 29;100411. <https://pubmed.ncbi.nlm.nih.gov/32127306/>. Accessed December 3, 2020.
10. Sommers BD, Gawande AA, Baicker K. Health insurance coverage and health –what the recent evidence tells us. *N Engl J Med* 2017;377;6:586-93. <https://pubmed.ncbi.nlm.nih.gov/28636831/>. Accessed December 3, 2020.

11. Chen J, Vargas-Bustamante A, Mortensen K, et al. Racial and ethnic disparities in health care access and utilization under the Affordable Care Act. *Med Care* 2016;54:140-6. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4711386/>. Accessed December 3, 2020.
12. Centers for Disease Control and Prevention. Oral Health Surveillance Report: Trends in Dental Caries and Sealants, Tooth Retention, and Edentulism, United States, 1999–2004 to 2011–2016. Atlanta, GA: U.S. Department of Health and Human Services; 2019. <https://www.cdc.gov/oralhealth/publications/OHSR-2019-index.html>. Accessed December 3, 2020.
13. Neuman P, Jacobson GA. Medicare Advantage checkup. *N Engl J Med* 2018 Nov 29;379(22):2163-72.
14. Data Book: Beneficiaries Dually Eligible for Medicare and Medicaid. Washington, DC: Medicare Payment Advisory Commission and Medicaid and CHIP Payment and Access Commission; January 2018. <https://www.macpac.gov/wp-content/uploads/2020/07/Data-Book-Beneficiaries-Dually-Eligible-for-Medicare-and-Medicaid-January-2018.pdf>. Accessed December 3, 2020.
15. Arnett MJ, Thorpe RJ Jr, Gaskin DJ, et al. Race, medical mistrust, and segregation in primary care as usual source of care: findings from the Exploring Health Disparities in Integrated Communities Study. *J Urban Health* 2016 Jun;93(3):456-67. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4899337/>. Accessed December 3, 2020.
16. Blewett LA, Johnson PJ, Lee B, et al. When a usual source of care and usual provider matter: adult prevention and screening services. *J Gen Intern Med* 2008 Sep; 23(9):1354-60. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2518015/>. Accessed December 3, 2020.
17. Institute of Medicine. Coverage Matters: Insurance and Health Care. Washington, DC: National Academy Press; 2001. <https://www.nap.edu/catalog/10188/coverage-matters-insurance-and-health-care>. Accessed December 3, 2020.

Quality in Healthcare

1. Chassin MR, Galvin RW. The urgent need to improve health care quality. Institute of Medicine National Roundtable on Health Care Quality. *JAMA* 1998;280(11):1000-5.
2. Corrigan JM, Donaldson MS, Kohn LT, et al. Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, DC: Institute of Medicine, National Academy of Sciences, National Academies Press; 2001. <https://www.nap.edu/catalog/10027/crossing-the-quality-chasm-a-new-health-system-for-the>. Accessed December 3, 2020.
3. Institute of Medicine. Envisioning the National Health Care Quality Report. Washington, DC: National Academy Press; 2001. <https://www.nap.edu/catalog/10073/envisioning-the-national-health-care-quality-report>. Accessed December 3, 2020.
4. DiMatteo MR. The role of the physician in the emerging health care environment. *West J Med* 1998;168(5):328-33. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1304975/>. Accessed December 3, 2020.
5. Stewart M, Brown JB, Donner A, et al. The impact of patient-centered care on outcomes. *J Fam Pract* 2000;49(9):796-804. <https://www.ncbi.nlm.nih.gov/pubmed/11032203> [abstract]. Accessed December 3, 2020.
6. 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;323(7318):908-11. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC58543/>. Accessed December 3, 2020.
7. Anderson EB. Patient-centeredness: a new approach. *Nephrol News Issues* 2002;16(12):80-2. <https://www.ncbi.nlm.nih.gov/pubmed/12452113> [abstract]. Accessed December 3, 2020.
8. Beck RS, Daughtridge R, Sloane PD. Physician-patient communication in the primary care office: a systematic review. *J Am Board Fam Pract* 2002;15(1):25-38. <https://www.jabfm.org/content/15/1/25.long>. Accessed December 3, 2020.

9. Rhoades DR, McFarland KF, Finch WH, et al. Speaking and interruptions during primary care office visits. *Fam Med* 2001;33(7):528-32. <https://www.ncbi.nlm.nih.gov/pubmed/11456245> [abstract]. Accessed December 3, 2020.
10. Weiner SJ, Schwartz A, Sharma G, et al. Patient-centered decision making and health care outcomes. *Ann Intern Med* 2013;158(8):573-9. <https://www.ncbi.nlm.nih.gov/pubmed/23588745>. Accessed December 3, 2020.
11. Okunrintemi V, Spatz ES, Di Capua P, et al. Patient-provider communication and health outcomes among individuals with atherosclerotic cardiovascular disease in the United States: Medical Expenditure Panel Survey 2010 to 2013. *Circ Cardiovasc Qual Outcomes* 2017 Apr;10(4). https://www.ahajournals.org/doi/full/10.1161/CIRCOUTCOMES.117.003635?url_ver=Z39.88-2003&rft_id=ori%3Arid%3Acrossref.org&rft_dat=cr_pub%3Dpubmed. Accessed December 3, 2020.
12. National Academies of Sciences, Engineering, and Medicine. Improving Diagnosis in Health Care. Washington, DC: The National Academies Press; 2015. <https://www.nap.edu/catalog/21794/improving-diagnosis-in-health-care>. Accessed December 3, 2020.
13. Chou C. Time to start using evidence-based approaches to patient engagement. *NEJM Catalyst* 2018 Mar 28. <https://catalyst.nejm.org/evidence-based-patient-provider-communication/>. Accessed December 3, 2020.
14. Øvretveit, J. Do Changes to Patient-Provider Relationships Improve Quality and Save Money? A Review of the Evidence About Value Improvements Made by Changing Communication, Collaboration, and Support for Self-Care. London, UK: The Health Foundation; 2012. <https://www.bl.uk/collection-items/do-changes-to-patientprovider-relationships-improve-quality-and-save-money-a-review-of-evidence-about-value-improvements-made-by-changing-communication-collaboration-and-support-for-selfcare>. Accessed December 3, 2020.
15. Bertakis KD, Azari R. Patient-centered care is associated with decreased health care utilization. *J Am Board Fam Med* 2011 May-Jun;24(3):229-39. <https://www.jabfm.org/content/24/3/229.long>. Accessed December 3, 2020.
16. Epstein RM, Franks P, Shields CG, et al. Patient-centered communication and diagnostic testing. *Ann Fam Med* 2005;3(5):415-21. <http://www.annfammed.org/content/3/5/415.long>. Accessed December 3, 2020.
17. Posner KL, Severson J, Domino KB. The role of informed consent in patient complaints: reducing hidden health system costs and improving patient engagement through shared decision making. *J Healthc Risk Manag* 2015 Sep;35(2):38-45. <https://www.ncbi.nlm.nih.gov/pubmed/26418139>. Accessed December 3, 2020.
18. Ponce NA, Hays RD, Cunningham WE. Linguistic disparities in health care access and health status among older adults. *J Gen Intern Med* 2006 Jul;21(7):786-91. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1924691/>. Accessed December 3, 2020.
19. Zong J, Batalova J. Language diversity and English proficiency in the United States. *Migration Information Source* 2016 Nov 11. <https://www.migrationpolicy.org/article/language-diversity-and-english-proficiency-united-states-2015>. Accessed December 15, 2020.
20. Institute of Medicine. Race, Ethnicity, and Language Data: Standardization for Health Care Quality Improvement. Washington, DC: The National Academies Press; 2009. 4. Defining language need and categories for collection. <https://www.ahrq.gov/research/findings/final-reports/iomracereport/reldata4.html>. Accessed December 3, 2020.
21. Limited English Proficiency: A Federal Interagency Website. Frequently Asked Questions. <https://www.lep.gov/faqs/faqs.html>. Accessed December 3, 2020.

22. Kutner M, Greenberg E, Jin Y, et al. 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 2006-483. https://nces.ed.gov/pubs2006/2006483_1.pdf. Accessed February 6, 2019. This survey is the only national assessment of health literacy to date.
23. Institute of Medicine. Health literacy: a prescription to end confusion. Washington, DC: National Academies Press; 2004. <https://www.nap.edu/catalog/10883/health-literacy-a-prescription-to-end-confusion>. Accessed December 3, 2020.
24. Schillinger D, Piette J, Grumbach K, et al. Closing the loop: physician communication with diabetic patients who have low health literacy. *Arch Intern Med* 2003;163(1):83-90.
25. Data Spotlights. AHRQ Publication No. 18(19)-0033-8-EF. Content last reviewed March 2019 Agency for Healthcare Research and Quality, Rockville, MD. <https://www.ahrq.gov/research/findings/nhqrdp/data-spotlights/index.html>.
26. Boulware LE, Cooper LA, Ratner LE, et al. Race and trust in the health care system. *Public Health Rep* 2003; 118: 358-65.
27. Kohn LT, Corrigan JM, Donaldson MS, eds; Committee on Quality of Health Care in America, Institute of Medicine. To Err Is Human: Building a Safer Health System. Washington, DC: National Academy Press; 2000. <http://www.nap.edu/catalog/9728.html>. Accessed December 3, 2020.
28. Sunshine JE, Meo N, Kassebaum NJ, et al. Association of adverse effects of medical treatment with mortality in the United States: a secondary analysis of the Global Burden of Diseases, Injuries, and Risk Factors Study. *JAMA Netw Open* 2019;2(1):e187041. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6484545/>. Accessed December 3, 2020.
29. AHRQ National Scorecard on Hospital-Acquired Conditions: Updated Baseline Rates and Preliminary Results 2014-2017. <https://www.ahrq.gov/sites/default/files/wysiwyg/professionals/quality-patient-safety/pfp/hacreport-2019.pdf>. Accessed July 20, 2020.
30. Bailey MK, Weiss AJ, Barrett ML, et al. Characteristics of 30-day readmissions, 2010-2016. HCUP Statistical Brief #248. Rockville, MD: Agency for Healthcare Research and Quality; February 2019. www.hcup-us.ahrq.gov/reports/statbriefs/sb248-Hospital-Readmissions-2010-2016.pdf. Accessed December 3, 2020.
31. Gajic-Veljanoski O, Phua CW, Shah PS, et al. Effects of long-term low-molecular-weight heparin on fractures and bone density in non-pregnant adults: a systematic review with meta-analysis. *J Gen Intern Med* 2016 Aug;31(8):947-57. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4945546/>. Accessed December 3, 2020.
32. A Patient's Guide to Taking Warfarin. American Heart Association. <https://www.heart.org/en/health-topics/arrhythmia/prevention-treatment-of-arrhythmia/a-patients-guide-to-taking-warfarin>. Accessed August. 7, 2020.
33. Genao L, Buhr GT. Urinary tract infections in older adults residing in long-term care facilities. *Ann Longterm Care* 2012 Apr;20(4):33-8. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3573848/>. Accessed December 3, 2020.
34. Bodenheimer T. Coordinating care—a perilous journey through the health care system. *N Engl J Med* 2008 Mar 6;358(10):1064-71. DOI:10.1056/NEJMp0706165. Accessed December 3, 2020.
35. 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/caregap7.html>. Accessed December 3, 2020.
36. Powell-Davies G, Williams AM, Larsen K, et al. Coordinating primary health care: an analysis of the outcomes of a systematic review. *Med J Aust* 2008 Apr 21;188(8 Suppl):S65-8. <https://www.ncbi.nlm.nih.gov/pubmed/18429740> [abstract]. Accessed December 3, 2020.

37. Care Coordination. Content last reviewed August 2018. Agency for Healthcare Research and Quality, Rockville, MD. <https://www.ahrq.gov/ncepcr/care/coordination.html>.
38. Coleman EA, Parry C, Chalmers S, et al. The care transitions intervention: results of a randomized controlled trial. *Arch Intern Med* 2006 Sep 25;166(17):1822-8. <https://www.ncbi.nlm.nih.gov/pubmed/17000937>. Accessed August 2, 2019.
39. Whittington J, Cohen H. OSF Healthcare's journey in patient safety. *Qual Manag Health Care* 2004 Jan-Mar;13(1):53-9. <https://www.ncbi.nlm.nih.gov/pubmed/14976907> [abstract]. Accessed December 3, 2020.
40. Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare Fee-for-Service Program. *N Engl J Med* 2009;360:1418-28. https://www.nejm.org/doi/10.1056/NEJMsa0803563?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%3dwww.ncbi.nlm.nih.gov. Accessed December 3, 2020.
41. Centers for Disease Control and Prevention, National Center for Health Statistics. Asthma. Last reviewed February 20, 2020. <https://www.cdc.gov/nchs/fastats/asthma.htm>. Accessed December 3, 2020.
42. The Asthma and Allergy Foundation and the National Pharmaceutical Council. Ethnic Disparities in the Burden and Treatment of Asthma. January 2005. <https://www.aafa.org/media/1633/ethnic-disparities-burden-treatment-asthma-report.pdf>. Accessed December 3, 2020.
43. Kullgren JT, McLaughlin CG, Mitra N, et al. Nonfinancial barriers and access to care for U.S. adults. *Health Serv Res*. 2012;47(1 Pt 2):462-485. doi:10.1111/j.1475-6773.2011.01308.x.
44. Wilper AP, Woolhandler S, Lasser KE, et al. Health insurance and mortality in US adults. *Am J Public Health*. 2009;99(12):2289-2295. doi:10.2105/AJPH.2008.157685.
45. Institute of Medicine; Committee on the Consequences of Uninsurance. *Care Without Coverage: Too Little, Too Late*. Washington, DC National Academies Press; 2002.
46. National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Board on Health Care Services; Nass SJ, Madhavan G, Augustine NR, et al., eds. *Making Medicines Affordable: A National Imperative*. Washington (DC): National Academies Press (US); 2017.
47. Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. *Chronic Diseases in America*. Last reviewed October 2019. <https://www.cdc.gov/chronicdisease/resources/infographic/chronic-diseases.htm>. Accessed December 3, 2020.
48. Raghupathi W, Raghupathi V. An Empirical Study of Chronic Diseases in the United States: A Visual Analytics Approach. *Int J Environ Res Public Health*. 2018;15(3):431. Published 2018 Mar 1. doi:10.3390/ijerph15030431.
49. Xu J, Murphy SL, Kochanek KD, et al. *Mortality in the United States, 2018*. NCHS Data Brief No. 355, Hyattsville, MD: National Center for Health Statistics; 2020.
50. Centers for Disease Control and Prevention. *Chronic Kidney Disease in the United States, 2019*. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention; 2019.
51. Kenealy T, Arroll B. Antibiotics for the common cold and acute purulent rhinitis. *Cochrane Database Syst Rev* 2013 Jun 4;(6):CD000247. <https://www.ncbi.nlm.nih.gov/pubmed/23733381>. Accessed December 3, 2020.
52. American Cancer Society. *Surgery for Colon Cancer*. Last revised February 21, 2018. <https://www.cancer.org/cancer/colon-rectal-cancer/treating/colon-surgery.html>. Accessed December 3, 2020.

53. 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 Mar 21;99(6):433-41. <https://pubmed.ncbi.nlm.nih.gov/17374833/>. Accessed December 3, 2020.
54. Wong SL. Lymph node counts and survival rates after resection for colon and rectal cancer. *Gastrointest Cancer Res* 2009;3(2 Suppl):S33-S35. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2684729/>. Accessed December 3, 2020.
55. Scholl L, Seth P, Kariisa M, et al. Drug and opioid-involved overdose deaths — United States, 2013–2017. *MMWR Morb Mortal Wkly Rep* 2019;67:1419–27. <http://dx.doi.org/10.15585/mmwr.mm675152e1>. Accessed December 3, 2020.
56. U.S. Department of Health and Human Services. What Is the U.S. Opioid Epidemic? Last reviewed January 2019. <https://www.hhs.gov/opioids/about-the-epidemic/index.html>. Accessed December 3, 2020.
57. Center for Behavioral Health Statistics and Quality. Key Substance Use and Mental Health Indicators in the United States: Results From the 2017 National Survey on Drug Use and Health. Detailed Tables (Table 1.65A). <https://www.samhsa.gov/data/release/2017-national-survey-drug-use-and-health-nsduh-releases>. Accessed December 3, 2020.
58. Lapierre S, Erlangsen A, Waern M, et al. A systematic review of elderly suicide prevention programs. *Crisis* 2011;32(2):88–98. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3728773/>. Accessed December 3, 2020.
59. Owens PL, Fingar KR, Heslin KC, et al. Emergency Department Visits Related to Suicidal Ideation, 2006–2013. *HCUP Statistical Brief #220*. Rockville, MD: Agency for Healthcare Research and Quality; January 2017. <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb220-Suicidal-Ideation-ED-Visits.pdf>. Accessed December 3, 2020.
60. Centers for Disease Control and Prevention. Pregnancy Mortality Surveillance System. Last reviewed August 2018. <https://www.cdc.gov/reproductivehealth/maternalinfanthealth/pregnancy-mortality-surveillance-system.htm>. Accessed December 3, 2020.
61. Building U.S. Capacity To Review and Prevent Maternal Deaths. Report From Nine Maternal Mortality Review Committees. 2018. http://reviewtoaction.org/Report_from_Nine_MMRCs. Accessed December 3, 2020.
62. Geller SE, Rosenberg D, Cox SM, et al. The continuum of maternal morbidity and mortality: factors associated with severity. *Am J Obstetr Gynecol* 2004;191(3):939–44. <https://www.ncbi.nlm.nih.gov/pubmed/15467568>. Accessed December 3, 2020.
63. Howell EA, Zeitlin J. Quality of care and disparities in obstetrics. *Obstetr Gynecol Clin* 2017;44(1):13–25. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5300700/>. Accessed December 3, 2020.
64. Office of the Surgeon General. The Surgeon General’s Call to Action To Improve Maternal Health. Washington, DC: U.S. Department of Health and Human Services; 2020. <https://www.hhs.gov/sites/default/files/call-to-action-maternal-health.pdf>. Accessed December 15, 2020.
65. Zhou F, Santoli J, Messonnier ML, et al. Economic evaluation of the 7-vaccine routine childhood immunization schedule in the United States, 2001. *Arch Pediatr Adolesc Med* 2005 Dec;159(12):1136–44. <https://www.ncbi.nlm.nih.gov/pubmed/16330737>. Accessed December 3, 2020.
66. Centers for Disease Control and Prevention. Influenza Vaccination Information for Health Care Workers. Influenza Facts. Last reviewed December 2019. <https://www.cdc.gov/flu/professionals/healthcareworkers.htm#flu-facts>. Accessed December 3, 2020.
67. Kamiya H, Cho BH, Messonnier ML, Clark TA, et al. Impact and cost-effectiveness of a second tetanus toxoid, reduced diphtheria toxoid, and acellular pertussis (Tdap) vaccine dose to prevent

- pertussis in the United States. *Vaccine* 2016 Apr 4;34(15):1832-8. Epub 2016 Feb 17. <https://pubmed.ncbi.nlm.nih.gov/26899377/>. Accessed December 3, 2020.
68. Nace DA, Archbald-Pannone LR, Ashraf MS, et al. Pneumococcal Vaccination Guidance for Post-Acute and Long-Term Care Settings: Recommendations From AMDA's Infection Advisory Committee. *J Am Med Dir Assoc*. 2017;18(2):99-104. doi:10.1016/j.jamda.2016.11.010.
 69. Leung FW, Schnelle JF. Urinary and fecal incontinence in nursing home residents. *Gastroenterol Clin North Am*. 2008;37(3):697-x. doi:10.1016/j.gtc.2008.06.005.
 70. McDaniel C, Ratnani I, Fatima S, et al. Urinary incontinence in older adults takes collaborative nursing efforts to improve. *Cureus*. 2020 Jul 12;12(7):e9161. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7419143/>. Accessed September 9, 2020.
 71. Noone AM, Howlader N, Krapcho M, et al. SEER Cancer Statistics Review, 1975-2015. Bethesda, MD: National Cancer Institute; 2018. https://seer.cancer.gov/archive/csr/1975_2015/index.html. Accessed December 3, 2020.

Disparities in Healthcare

1. Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services. Healthy People 2020. <https://www.healthypeople.gov/>. Accessed December 3, 2020.
2. Orgera K, Artiga S. Issue Brief. Disparities in health and health care: five key questions and answers. Washington, DC: Henry J. Kaiser Family Foundation; August 2018. <https://www.kff.org/disparities-policy/issue-brief/disparities-in-health-and-health-care-five-key-questions-and-answers/>. Accessed December 3, 2020.
3. Institute of Medicine. Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Washington, DC: National Academies Press; 2003. <https://doi.org/10.17226/12875>. Accessed December 3, 2020.
4. Fichtenberg CM, Alley DE, Mistry KB. Improving social needs intervention research: key questions for advancing the field. *Am J Prev Med* 2019 Dec;57(6 Suppl 1):S47-S54. <https://pubmed.ncbi.nlm.nih.gov/31753279/>. Accessed December 3, 2020.
5. Marmot M. The Status Syndrome: How Social Standing Affects Our Health and Longevity. New York, NY: Henry Holt; 2004.
6. U.S. Department of Health and Human Services. Report of the Secretary's Task Force on Black and Minority Health. Washington, DC: Government Printing Office; 1985. <https://minorityhealth.hhs.gov/heckler30/>. Accessed December 3, 2020.
7. Centers for Disease Control and Prevention. CDC health disparities and inequalities report — United States, 2013. *MMWR* 2013;62(Suppl 3):1-187. <https://www.cdc.gov/minorityhealth/CHDIRReport.html>. Accessed December 3, 2020.
8. Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services. Healthy People Foundation Health Measures. Disparities. <https://www.healthypeople.gov/2020/about/foundation-health-measures/Disparities>. Accessed December 3, 2020.
9. Centers for Disease Control and Prevention. HIV and African Americans. <https://www.cdc.gov/hiv/group/raciaethnic/africanamericans/index.html>. Accessed December 3, 2020.
10. Office of Minority Health, U.S. Department of Health and Human Services. HIV/AIDS and African Americans. <https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=4&lvlid=21>. Accessed December 3, 2020.
11. Azar A. Ending the HIV Epidemic: A Plan for America. Washington, DC: U.S. Department of Health and Human Services; February 2019. <https://www.hhs.gov/blog/2019/02/05/ending-the-hiv-epidemic-a-plan-for-america.html>. Accessed December 3, 2020.

12. Centers for Disease Control and Prevention, [National Center for Injury Prevention and Control](https://webappa.cdc.gov/sasweb/ncipc/leadcause.html). Leading Cause of Death, 2017. <https://webappa.cdc.gov/sasweb/ncipc/leadcause.html>. Accessed December 3, 2020.
13. U.S. Department of Health and Human Services. HIV Care and Treatment Activities. Last updated May 2017. <https://www.hiv.gov/federal-response/federal-activities-agencies/hiv-care-and-treatment-activities>. Accessed December 3, 2020.
14. Health Resources and Services Administration. Ryan White HIV/AIDS Program by the Numbers. <https://hab.hrsa.gov/sites/default/files/hab/Publications/infographics/generalaudiencegraphic.pdf>. Accessed December 3, 2020.
15. High-Impact Prevention At-a-Glance. <https://www.cdc.gov/nchhstp/highimpactprevention/docs/HIP-at-a-glance-P.pdf>. Accessed December 3, 2020.
16. Asthma and Allergy Foundation of America. Asthma Facts and Figures. Medical review February 2018; updated June 2019. <https://www.aafa.org/asthma-facts/>. Accessed December 3, 2020.
17. Centers for Disease Control and Prevention. Most Recent National Asthma Data. Last reviewed October 2020. https://www.cdc.gov/asthma/most_recent_national_asthma_data.htm. Accessed December 3, 2020.
18. Centers for Disease Control and Prevention. Asthma. CCARE. Last reviewed October 2019. <https://www.cdc.gov/asthma/ccare.htm>. Accessed December 3, 2020.
19. Glied S, Herzog K, Frank R. Review: the net benefits of depression management in primary care. *Med Care Res Rev* 2010 Jun;67(3):251-74.
20. U.S. Department of Health and Human Services, Office of Minority Health. Diabetes and African Americans. Last modified December 19, 2019. <https://minorityhealth.hhs.gov/omh/browse.aspx?lvl=4&lvlid=18>. Accessed December 3, 2020.
21. Ngo-Metzger Q, Legedza AT, Phillips RS. Asian Americans' reports of their health care experiences. Results of a national survey. *J Gen Intern Med* 2004 Feb;19(2):111-9. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1492145/>. Accessed December 3, 2020.
22. Ponce NA, Hays RD, Cunningham WE. Linguistic disparities in health care access and health status among older adults. *J Gen Intern Med* 2006 Jul;21(7):786-91. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1924691/>. Accessed December 3, 2020.
23. Zong J, Batalova J. Language diversity and English proficiency in the United States. *Migration Information Source* 2016 Nov 11. <https://www.migrationpolicy.org/article/language-diversity-and-english-proficiency-united-states-2015>. Accessed December 15, 2020.
24. Institute of Medicine. Race, Ethnicity, and Language Data: Standardization for Health Care Quality Improvement. Washington, DC: The National Academies Press; 2009. 4. Defining language need and categories for collection. <https://www.ahrq.gov/research/findings/final-reports/iomracereport/reldata4.html>. Accessed December 3, 2020.
25. Limited English Proficiency: A Federal Interagency Website. Frequently Asked Questions. <https://www.lep.gov/faqs/faqs.html>. Accessed December 3, 2020.
26. TeamSTEPPS® Enhancing Safety for Patients With Limited English Proficiency Module. Rockville, MD: Agency for Healthcare Research and Quality; 2012. <https://www.ahrq.gov/teamstepps/lep/index.html>. Accessed December 3, 2020.
27. Agency for Healthcare Research and Quality. Examples of Home Health Care Quality Measures for Consumers. Last updated November 2018. <https://www.ahrq.gov/talkingquality/measures/setting/long-term-care/home-health/examples.html>. Accessed December 3, 2020.
28. Hoover MA, Green HD Jr, Bogart LM, et al. Do people know I'm poz?: factors associated with knowledge of serostatus among HIV-positive African Americans' social network members. *AIDS*

- Behav 2016 Jan;20(1):137-46. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4618789/>. Accessed December 3, 2020.
29. Wolitski R, Fecik N. Knowledge of HIV status is on the rise. Washington, DC: U.S. Department of Health and Human Services; August 2017. <https://www.hiv.gov/blog/knowledge-hiv-status-rise>. Accessed December 3, 2020.
 30. Centers for Disease Control and Prevention. Influenza (Flu). Last reviewed May 2019. <https://www.cdc.gov/flu/index.htm>. Accessed December 3, 2020.
 31. Black CL, Yue X, Ball SW, et al. Influenza vaccination coverage among health care personnel — United States, 2017-18 influenza season. MMWR Morb Mortal Wkly Rep 2018;67:1050-4. <http://dx.doi.org/10.15585/mmwr.mm6738a2..> Accessed November 24, 2020.
 32. Mulpuru S, Li L, Ye L, et al. Effectiveness of influenza vaccination on hospitalizations and risk factors for severe outcomes in hospitalized patients with COPD. Chest 2019 Jan;155(1):69078. [https://journal.chestnet.org/article/S0012-3692\(18\)32725-9/fulltext](https://journal.chestnet.org/article/S0012-3692(18)32725-9/fulltext). Accessed December 3, 2020.
 33. March of Dimes. Low Birthweight. Last reviewed March 2018. <https://www.marchofdimes.org/complications/low-birthweight.aspx>. Accessed June 19, 2020.
 34. Partridge S, Balayla J, Holcroft CA, et al. Inadequate prenatal care utilization and risks of infant mortality and poor birth outcome: a retrospective analysis of 28,729,765 U.S. deliveries over 8 years. Amer J Perinatol 2012;29:787-94. <https://www.ncbi.nlm.nih.gov/pubmed/22836820>. Accessed December 3, 2020.
 35. National Institute of Diabetes and Digestive and Kidney Diseases. Diabetic Kidney Disease. <https://www.niddk.nih.gov/health-information/diabetes/overview/preventing-problems/diabetic-kidney-disease>. Accessed December 3, 2020.
 36. Burrows NR, Zhang Y, Hora I, et al. Sustained lower incidence of diabetes-related end-stage kidney disease among American Indians and Alaska Natives, Blacks, and Hispanics in the U.S., 2000-2016. Diabetes Care 2020 Sep;43(9):2090-7. Epub 2020 Jul 2. <https://pubmed.ncbi.nlm.nih.gov/32616609/>. Accessed December 3, 2020.
 37. Whelton PK, Carey RM, Aronow WS, et al. ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/ NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. Hypertension 2018 Jun;71(6):e13-e115. <https://pubmed.ncbi.nlm.nih.gov/29133356/>. Accessed December 3, 2020.
 38. Centers for Disease Control and Prevention. Prevention Strategies for Seasonal Influenza in Healthcare Settings. Last reviewed October 2018. <https://www.cdc.gov/flu/professionals/infectioncontrol/healthcaresettings.htm>. Accessed December 3, 2020.
 39. Centers for Disease Control and Prevention. Vital Signs: HIV Testing. Last reviewed November 2017. <https://www.cdc.gov/vitalsigns/hiv-testing/>. Accessed December 3, 2020.
 40. Centers for Disease Control and Prevention. HIV Surveillance Report, 2017. Vol. 29. Published November 2018. <https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2017-vol-29.pdf>. Accessed December 3, 2020.
 41. Grohskopf LA, Sokolow LZ, Broder KR, et al. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices-United States, 2018-19 influenza season. MMWR Recomm Rep 2018 Aug 24;67(3):1-20. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6107316/>. Accessed December 3, 2020.
 42. National Institute of Diabetes and Digestive and Kidney Diseases. Diabetic Kidney Disease. <https://www.niddk.nih.gov/health-information/diabetes/overview/preventing-problems/diabetic-kidney-disease>. Accessed December 3, 2020.

43. Institute of Medicine and National Research Council. Improving Access to Oral Health Care for Vulnerable and Underserved Populations. Washington, DC: National Academies Press; 2011. <https://doi.org/10.17226/13116>. Accessed December 3, 2020.
44. Centers for Disease Control and Prevention. Adult Obesity Facts. Last reviewed June 2020. <https://www.cdc.gov/obesity/data/adult.html>. Accessed December 3, 2020.
45. National Institute of Diabetes and Digestive and Kidney Diseases. Talking With Patients About Weight Loss: Tips for Primary Care Providers. <https://www.niddk.nih.gov/health-information/weight-management/talking-adult-patients-tips-primary-care-clinicians>. Accessed December 3, 2020.
46. Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services. U.S. Federal Poverty Guidelines Used To Determine Financial Eligibility for Certain Federal Programs. <https://aspe.hhs.gov/poverty-guidelines>. Accessed December 3, 2020.
47. Khullar D, Chokshi DA. Health Policy Brief. Health, Income, & Poverty: Where We Are & What Could Help. Health Affairs 2018 Oct 4. <https://www.healthaffairs.org/doi/10.1377/hpb20180817.901935/full/>. Accessed December 3, 2020.
48. Larrimore J. Does a higher income have positive health effects? Using the earned income tax credit to explore the income-health gradient. Milbank Q 2011 Dec;89(4):694-727. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3250638/>. Accessed December 3, 2020.
49. Shaw KM, Theis KA, Self-Brown S, et al. Chronic disease disparities by county economic status and metropolitan classification, Behavioral Risk Factor Surveillance System, 2013. Prev Chronic Dis 2016 Sep 1;13:E119. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5008860/>. Accessed December 3, 2020.
50. Bor J, Cohen GH, Galea S. Population health in an era of rising income inequality: USA, 1980-2015. Lancet 2017 Apr 8;389(10077):1475-90. [https://doi.org/10.1016/S0140-6736\(17\)30571-8](https://doi.org/10.1016/S0140-6736(17)30571-8). Accessed December 3, 2020.
51. Shaw KM, Theis KA, Self-Brown S, et al. Chronic disease disparities by county economic status and metropolitan classification, Behavioral Risk Factor Surveillance System, 2013. Prev Chronic Dis 2016 Sep 1;13:E119. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5008860/>. Accessed December 3, 2020.
52. Henry J. Kaiser Family Foundation. Key Facts About the Uninsured Population. December 2018. <https://www.kff.org/uninsured/fact-sheet/key-facts-about-the-uninsured-population/>. Accessed December 3, 2020.
53. Centers for Disease Control and Prevention. Healthy Weight, Nutrition, and Physical Activity. About Child & Teen BMI. Last reviewed June 29, 2020. https://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html. Accessed December 3, 2020.
54. Centers for Disease Control and Prevention. Vaccines and Preventable Diseases. Polio Vaccination. Last reviewed May 4, 2018. <https://www.cdc.gov/vaccines/vpd/polio/index.html>. Accessed December 3, 2020.
55. Centers for Disease Control and Prevention. Vital Signs. Asthma in Children. Last reviewed May 10, 2018. <https://www.cdc.gov/vitalsigns/childhood-asthma/index.html>. Accessed December 3, 2020.
56. Centers for Disease Control and Prevention. National Diabetes Statistics Report 2020: Estimates of Diabetes and Its Burden in the United States. <https://www.cdc.gov/diabetes/pdfs/data/statistics/national-diabetes-statistics-report.pdf>. Accessed December 3, 2020.
57. Organisation for Economic Cooperation and Development. Health at a Glance 2019: OECD Indicators. Diabetes Care. Figure 6.12. Diabetes hospital admission in adults, 2012 and 2017 (or nearest year). <https://www.oecd-ilibrary.org/sites/402e2e10-en/index.html?itemId=/content/component/402e2e10-en>. Accessed December 3, 2020.

58. Zong J, Batalova J. Language diversity and English proficiency in the United States. Migration Information Source 2016 Nov 11. <https://www.migrationpolicy.org/article/language-diversity-and-english-proficiency-united-states-2015>. Accessed December 15, 2020.
59. The Joint Commission. Overcoming the Challenges of Providing Care to LEP Patients. Quick Safety Issue 13; May 2015. https://www.jointcommission.org/-/media/deprecated-unorganized/imported-assets/tjc/system-folders/joint-commission-online/quick_safety_issue_13_may_2015_embargoed_5_27_15pdf.pdf?db=web&hash=390D4DDA38EF28D1243CE53A9C274B1A. Accessed December 3, 2020.
60. Centers for Disease Control and Prevention. Meningococcal Disease. Last reviewed January 21, 2020. <https://www.cdc.gov/meningococcal/>. Accessed December 3, 2020.
61. Centers for Disease Control and Prevention. Vaccines and Preventable Diseases. Meningococcal Vaccination. Last reviewed: July 26, 2019. <https://www.cdc.gov/vaccines/vpd/mening/index.html>. Accessed December 3, 2020.
62. Lebrun-Harris LA, Canto MT, Vodick P. Preventive oral health care use and oral health status among US children: 2016 National Survey of Children's Health. JADA 2019 Apr; 150(4):246-58. <https://pubmed.ncbi.nlm.nih.gov/30922456/>. Accessed December 3, 2020.
63. MacDougall H. Dental disparities among low-income American adults: a social work perspective. Health Soc Work 2016 Aug; 41(3):208-10. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4985883/>. Accessed December 3, 2020.
64. Institute of Medicine Committee on the Consequences of Uninsurance. Care Without Coverage: Too Little, Too Late. Washington, DC: National Academies Press; 2002. 4, The difference coverage could make to the health of uninsured adults. <https://www.ncbi.nlm.nih.gov/books/NBK220633/>. Accessed December 3, 2020.
65. Moore LJ, Moore FA, Todd SR, et al. Sepsis in general surgery: the 2005-2007 National Surgical Quality Improvement Program perspective. Arch Surg 2010 Jul; 145(7):695-700. <https://pubmed.ncbi.nlm.nih.gov/20644134/>. Accessed December 3, 2020.
66. National Heart, Lung, and Blood Institute. High Blood Pressure. Last updated May 2020. <https://www.nhlbi.nih.gov/health-topics/high-blood-pressure>. Accessed December 3, 2020.
67. Centers for Disease Control and Prevention. Influenza (Flu): Diabetes. Last reviewed February 2019. <https://www.cdc.gov/flu/diabetes/index.htm>. Accessed December 3, 2020.
68. Information Series for Adults: What You Need To Know About Diabetes and Adult Vaccines. Atlanta, GA: Centers for Disease Control and Prevention; August 2018. <https://www.cdc.gov/vaccines/hcp/adults/downloads/fs-diabetes-vaccines.pdf>. Accessed December 3, 2020.
69. Horvitz-Lennon M, Volya R, Garfield R, et al. Where you live matters: quality and racial/ethnic disparities in schizophrenia care in four state Medicaid programs. Health Serv Res 2015 Oct; 50(5):1710-29. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4600368/>. Accessed December 3, 2020.
70. Lin YH, McLain AC, Probst JC, et al. Health-related quality of life among adults 65 years and older in the United States, 2011-2012: a multilevel small area estimation approach. Ann Epidemiol 2017 Jan; 27(1):52-58. <https://www.ncbi.nlm.nih.gov/pubmed/27814940>. Accessed December 3, 2020.
71. Trivedi T, Liu J, Probst JC, et al. Obesity and obesity-related behaviors among rural and urban adults in the USA. Rural Remote Health 2015; 15:3267. <https://www.rrh.org.au/journal/article/3267>. Accessed December 3, 2020.
72. Andrilla CHA, Patterson DG, Garberson LA, et al. Geographic variation in the supply of selected behavioral health providers. Am J Prev Med 2018 Jun; 54(6S3):S199-S207. <https://www.ncbi.nlm.nih.gov/pubmed/29779543>. Accessed December 3, 2020.

73. Skinner AC, Slifkin RT. Rural/urban differences in barriers to and burden of care for children with special health care needs. *J Rural Health* 2007 Spring;23(2):150-7. <https://www.ncbi.nlm.nih.gov/pubmed/17397371>. Accessed December 3, 2020.
74. Hale N, Probst J, Robertson A. Rural area deprivation and hospitalizations among children for ambulatory care sensitive conditions. *J Community Health* 2016 Jun;41(3):451-60. <https://www.ncbi.nlm.nih.gov/pubmed/26516019>. Accessed December 3, 2020.
75. Centers for Disease Control and Prevention. NCHS Urban-Rural Classification Scheme for Counties. Last reviewed June 2017. https://www.cdc.gov/nchs/data_access/urban_rural.htm. Accessed December 3, 2020.
76. Agency for Healthcare Research and Quality. National Healthcare Quality and Disparities Report State View. <https://nhqrnet.ahrq.gov/inhqrdtr/state/select>. Accessed December 3, 2020.
77. Johnson LH, Chambers P, Dexheimer JW. Asthma-related emergency department use: current perspectives. *Open Access Emerg Med* 2016;8:47-55. Published online 2016 Jul 13. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4950546/>. Accessed December 3, 2020.
78. Jang H, Ozkaynak M, Ayer T, et al. Factors associated with first medication time for children treated in the emergency department for asthma. *Pediatr Emerg Care* 2018 Oct 2. [Epub ahead of print] <https://www.ncbi.nlm.nih.gov/pubmed/30281550>. Accessed December 3, 2020.
79. Bekmezian A, Fee C, Bekmezian S, et al. Emergency department crowding and younger age are associated with delayed corticosteroid administration to children with acute asthma. *Pediatr Emerg Care* 2013 Oct;29(10):1075-81. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3809097/>. Accessed December 3, 2020.
80. Zahran HS, Bailey CM, Damon SA, et al. Vital Signs: Asthma in children — United States, 2001–2016. *MMWR Morb Mortal Wkly Rep* 2018;67:149-155. <https://www.cdc.gov/mmwr/volumes/67/wr/mm6705e1.htm>. Accessed December 3, 2020.
81. Centers for Disease Control and Prevention. 2017 Archived National Asthma Data. Last reviewed March 2020. https://www.cdc.gov/asthma/archivedata/2017/2017_archived_national_data.html. Accessed December 3, 2020.
82. Wall T, Nasseh K, Vujicic M. Majority of dental-related emergency department visits lack urgency and can be diverted to dental offices. Health Policy Institute Research Brief. Chicago, IL: American Dental Association; August 2014. https://www.ada.org/~media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0814_1.ashx. Accessed December 3, 2020.
83. Centers for Disease Control and Prevention, National Center for Health Statistics. Emergency Department Visits. Last reviewed January 2017. <https://www.cdc.gov/nchs/fastats/emergency-department.htm>. Accessed December 3, 2020.
84. Brown JD, Harnett J, Chambers R, et al. The relative burden of community-acquired pneumonia hospitalizations in older adults: a retrospective observational study in the United States. *BMC Geriatr* 2018 Apr 16;18(1):92. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5902892/>. Accessed December 3, 2020.
85. Rozenbaum MH, Mangen MJ, Huijts SM, et al. Incidence, direct costs, and duration of hospitalization of patients hospitalized with community acquired pneumonia: a nationwide retrospective claims database analysis. *Vaccine* 2015 Jun 22;33(28):3193-9. <https://www.ncbi.nlm.nih.gov/pubmed/25981488>. Accessed December 3, 2020.
86. Centers for Disease Control and Prevention. Pneumococcal Vaccination: Summary of Who and When To Vaccinate. <https://www.cdc.gov/vaccines/vpd/pneumo/hcp/who-when-to-vaccinate.html>. Accessed December 3, 2020.

87. CDC. HIV Surveillance Report, Diagnoses of HIV Infection in the United States and Dependent Areas, 2017. Vol. 29; November 2018. <https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2017-vol-29.pdf>. Accessed December 3, 2020.
88. U.S. Department of Health and Human Services. What is 'Ending the HIV Epidemic: A Plan for America'? Last updated May 2019. <https://www.hiv.gov/federal-response/ending-the-hiv-epidemic/overview>. Accessed December 3, 2020.
89. U.S. Department of Health and Human Services. HIV Prevention Activities. <https://www.hiv.gov/federal-response/federal-activities-agencies/hiv-prevention-activities>. Accessed December 3, 2020.
90. American Academy of Pediatrics. AAP Schedule of Well-Child Care Visits. Last updated October 2018. <https://www.healthychildren.org/English/family-life/health-management/Pages/Well-Child-Care-A-Check-Up-for-Success.aspx>. Accessed December 3, 2020.
91. Peterson-Kaiser Health System Tracker. 30-Day Mortality Following Certain Admissions. <https://www.healthsystemtracker.org/indicator/quality/30-day-mortality-following-certain-admissions/>. Accessed December 3, 2020.
92. Agency for Healthcare Research and Quality PSNet. Readmissions and Adverse Events After Discharge. <https://psnet.ahrq.gov/primers/primer/11/Readmissions-and-Adverse-Events-After-Discharge>. Accessed December 3, 2020.
93. Shanmugam VK, Fernandez SJ, Evans KK, et al. Postoperative wound dehiscence: predictors and associations. *Wound Repair Regen* 2015 Mar-Apr;23(2):184-90. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4587566/>. Accessed December 3, 2020.
94. Gachabayov M, You K, Sullivan R, et al. A retrospective cohort study to determine predictive factors for abdominal wound disruption following colorectal surgery. *Ostomy Wound Manage* 2018 Apr;64(4):22-29. <https://www.ncbi.nlm.nih.gov/pubmed/29718814>. Accessed December 3, 2020.
95. Chou C. Time to start using evidence-based approaches to patient engagement. *NEJM Catalyst* 2018 Mar 28. <https://catalyst.nejm.org/evidence-based-patient-provider-communication/>. Accessed December 3, 2020.
96. Hsu DJ, McCarthy EP, Stevens JP, et al. Hospitalizations, costs, and outcomes associated with heroin and prescription opioid overdoses in the United States 2001-12. *Addiction* 2017 Sep;112(9):1558-64. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5544564/>. Accessed December 3, 2020.

Looking Forward

1. Centers for Disease Control and Prevention. Older Adults. Last reviewed June 2020. <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-increased-risk.html>. Accessed December 3, 2020.
2. Webb Hooper M, Nápoles AM, Pérez-Stable EJ. COVID-19 and racial/ethnic disparities. *JAMA* 2020;323(24):2466-7. doi:10.1001/jama.2020.8598.
3. U.S. Department of Health and Human Services, Minority HIV/AIDS Fund. Federal Response. Last reviewed June 2020. <https://www.hiv.gov/federal-response>. Accessed December 3, 2020.
4. U.S. Department of Health and Human Services. The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2014. Printed with corrections, January 2014. https://www.cdc.gov/tobacco/data_statistics/sgr/50th-anniversary/index.htm. Accessed December 3, 2020.
5. U.S. Department of Health and Human Services. Secretary Priorities. Last reviewed July 2018. <https://www.hhs.gov/about/leadership/secretary/priorities/index.html>. Accessed December 3, 2020.

References

6. U.S. Department of Health and Human Services. 5-Point Strategy To Combat the Opioid Crisis. Last reviewed August 2018. <https://www.hhs.gov/opioids/about-the-epidemic/hhsresponse/index.html>. Accessed December 3, 2020.
Secretary Priorities: Value-Based Care. Content last reviewed July 23, 2018. Assistant Secretary for Public Affairs, Washington, D.C. <https://www.hhs.gov/about/leadership/secretary/priorities/index.html#value-based-healthcare>. Accessed December 11, 2020.
7. Centers for Medicare & Medicaid Services. What Are the Value-Based Programs? Last reviewed January 6, 2020. <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/Value-Based-Programs>. Accessed December 3, 2020.

APPENDIX A. DATA SOURCES USED FOR 2019 REPORT

The *National Healthcare Quality and Disparities Report* (NHQDR) is a comprehensive national overview of quality of healthcare in the United States. The report also examines disparities in healthcare 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)
- 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

Centers for Medicare & Medicaid Services and Agency for Healthcare Research and Quality

- Home Health Consumer Assessment of Healthcare Providers and Systems (HHCAHPS)
- Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)
- Medicare Patient Safety Monitoring System (MPSMS)

Academic Institutions

University of Michigan

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

Professional Organizations and Associations

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 NHQDR. 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,ⁱ 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

ⁱ For purposes of the NHQDR, the District of Columbia is treated as a state.

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 and 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 and 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 B. DEFINITIONS AND ABBREVIATIONS USED IN 2019 REPORT

Definitions

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 (AI/AN).** 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” 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/Pacific Islander (NHPI).** 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:

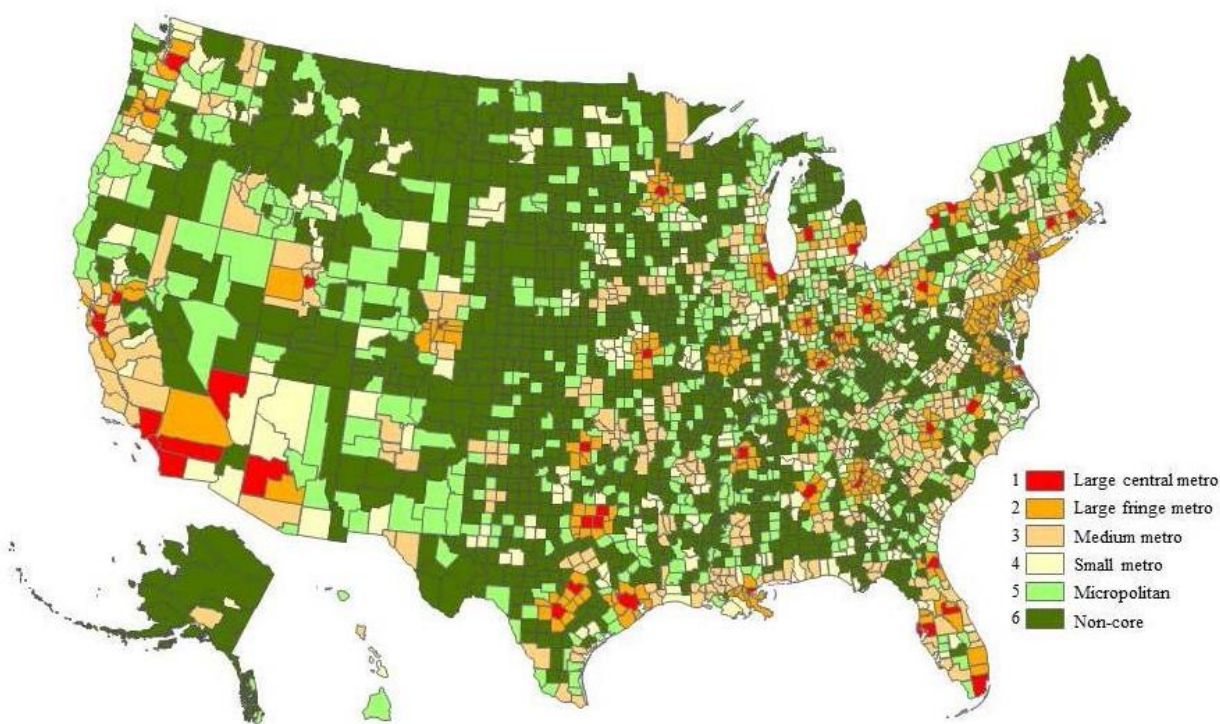
- Poor: Less than 100% of FPL
- Low income: 100% to less than 200% of FPL
- Middle income: 200% to less than 400% of FPL
- High income: 400% or more of FPL

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.

Figure B-1. Map Showing 2013 NCHS Urban-Rural County Classifications in the United States



- Metropolitan counties:
 - Large central metro counties in metropolitan statistical area (MSA) of 1 million or more 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: Counties in a micropolitan statistical area.
 - Noncore: Nonmetropolitan counties that are not in a micropolitan statistical area.

More information 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 NHQDR, 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.

Abbreviations Used in the NHQDR

- AAA: abdominal aortic aneurysm
- ACS NSQIP: American College of Surgeons National Surgical Quality Improvement Program
- AD: Alzheimer’s disease
- ADE: adverse drug event
- AI/AN: American Indian or Alaska Native
- AJCC: American Joint Committee on Cancer
- API: Asian and Pacific Islander
- BMI: body mass index
- CAP: community-acquired pneumonia
- CCQM-PC: Care Coordination Quality Measure for Primary Care
- COPD: chronic obstructive pulmonary disease
- DALY: disability-adjusted life year
- ED: emergency department
- FPL: Federal Poverty Level
- HCUP: Healthcare Cost & Utilization Project
- HHCAHPS: Home Health Consumer Assessment of Healthcare Providers and Systems
- HPV: human papillomavirus

- ICD-9: International Classification of Diseases, Ninth Revision
- ICD-10: International Classification of Diseases, Tenth Revision
- IMRT: intensity-modulated radiation therapy
- IOM: Institute of Medicine
- IWG: Interagency Work Group
- LAP: Language Access Plan
- LEP: limited English proficiency
- LMWH: low-molecular-weight heparin
- LN: lymph node
- MedPAC: Medicare Payment Advisory Commission
- MEPS: Medical Expenditure Panel Survey
- MPSMS: Medicare Patient Safety Monitoring System
- MSA: metropolitan statistical area
- NAMCS: National Ambulatory Medical Care Survey
- NCDB: National Cancer Data Base
- NEDS: National Emergency Department Sample
- NHAMCS: National Hospital Ambulatory Medical Care Survey
- NHANES: National Health and Nutrition Examination Survey
- NHIS: National Health Interview Survey
- NHSS: National HIV/AIDS Surveillance System
- NHPI: Native Hawaiian/Pacific Islander
- NHQDR: National Healthcare Quality and Disparities Report
- NIS: National Immunization Survey
- NVSS: National Vital Statistics System
- OCR: Office for Civil Rights
- SID: State Inpatient Databases
- THA: total hip arthroplasty
- UM-KECC: University of Michigan Kidney Epidemiology and Cost Center
- USC: usual source of care
- USRDS: U.S. Renal Data System
- YPLL: years of potential life lost

Agencies and Offices in the U.S. Department of Health and Human Services

- AHRQ: Agency for Healthcare Research and Quality
 - CEPI: Center for Evidence and Practice Improvement
 - CFACT: Center for Financing, Access, and Cost Trends
 - CQuIPS: Center for Quality Improvement and Patient Safety
 - OC: Office of Communications
 - OEREP: Office of Extramural Research, Education, and Priority Populations
- ACL: Administration for Community Living
- ASPE: Office of the Assistant Secretary for Planning and Evaluation
- CDC: Centers for Disease Control and Prevention
 - ACIP: Advisory Committee on Immunization Practices
 - NCHHSTP DHAP: National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of HIV/AIDS Prevention
 - NCHS: National Center for Health Statistics
 - NCIRD: National Center for Immunizations and Respiratory Diseases
 - NPCR: National Program of Cancer Registries
 - NCCDPHP-ONDIEH: National Center for Chronic Disease Prevention and Health Promotion, Office of Noncommunicable Diseases, Injury, and Environmental Health
- CMS: Centers for Medicare & Medicaid Services
 - QIO: Quality Improvement Organization Program
- FDA: Food and Drug Administration
- HRSA: Health Resources and Services Administration
 - RWHAP: Ryan White HIV/AIDS Program
- IHS: Indian Health Service

- NIH: National Institutes of Health
 - NCI: National Cancer Institute
 - NHLBI: National Heart, Lung, and Blood Institute
 - NIDDK: National Institute of Diabetes and Digestive and Kidney Diseases
 - NIMHD: National Institute on Minority Health and Health Disparities
 - OD/ORWH: Office of the Director/Office of Research on Women's Health
- OASH: Office of the Assistant Secretary for Health
- SAMHSA: Substance Abuse and Mental Health Services Administration

Other Federal Agencies

- VHA: Veterans Health Administration