



2017

NATIONAL  
HEALTHCARE  
QUALITY  
AND DISPARITIES  
REPORT



**AHRQ**  
Agency for Healthcare  
Research and Quality

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# 2017 NATIONAL HEALTHCARE QUALITY AND DISPARITIES REPORT

**U.S. DEPARTMENT OF  
HEALTH AND HUMAN SERVICES**  
Agency for Healthcare Research and Quality  
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Rockville, MD 20857  
[www.ahrq.gov](http://www.ahrq.gov)

**AHRQ Publication No. 18-0033-EF**  
**July 2018**  
[www.ahrq.gov/research/findings/nhqrdr/index.html](http://www.ahrq.gov/research/findings/nhqrdr/index.html)



## ACKNOWLEDGMENTS

The National Healthcare Quality and Disparities Report (QDR) 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:

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**Data Support Contractors:** Social & Scientific Systems (SSS).

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# EXECUTIVE SUMMARY

## Key Findings

- **Access:** An estimated 43% of access measures showed improvement (2000-2016), 43% did not show improvement, and 14% showed worsening. For example, from 2000 to 2017, there were significant gains in the percentage of people who reported having health insurance.
- **Quality:** Quality of healthcare improved overall from 2000 through 2014-2015 but the pace of improvement varied by priority area:
  - **Person-Centered Care:** Almost 70% of person-centered care measures were improving overall.
  - **Patient Safety:** More than two-thirds of patient safety measures were improving overall.
  - **Healthy Living:** More than half of healthy living measures were improving overall.
  - **Effective Treatment:** More than half of effective treatment measures were improving overall.
  - **Care Coordination:** Half of care coordination measures were improving overall.
  - **Care Affordability:** Eighty percent of care affordability measures did not change overall.
- **Disparities:** Overall, some disparities were getting smaller from 2000 through 2014-2015, but disparities persist, especially for poor and uninsured populations in all priority areas.
  - Trends show that about 55% percent of quality measures are improving overall for Blacks.<sup>i</sup> However, most recent data in 2014-2015 show that about 40% of quality measures were worse for Blacks compared with Whites.
  - Trends show that about 60% of quality measures are improving overall for Asians. However, most recent data in 2014-2015 show that 20% of quality measures were worse for Asians compared with Whites.
  - Trends show that almost 35% of quality measures are improving overall for American Indians/Alaska Natives (AI/ANs). However, most recent data in 2014-2015 show that about 30% of quality measures were worse for AI/ANs compared with Whites.
  - Trends show that about one-quarter of quality measures are improving overall for Native Hawaiians/Pacific Islanders (NHPIs). However, most recent data in 2014-2015 show that nearly one-third of quality measures were worse for NHPIs compared with Whites.
  - Trends show that about 60% of quality measures are improving overall for Hispanics, but in 2014-2015, nearly one-third of quality measures were worse for Hispanics compared with non-Hispanic Whites.
  - Variation in care persisted across the urban-rural continuum in 2014-2016, especially in access to care and care coordination.

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<sup>i</sup> Throughout this report and its appendixes, “Blacks” refers to Blacks or African Americans, and “Hispanics” refers to Hispanics or Latinos. More information is available in the Reporting Conventions section of the Introduction and Methods.

## About the National Healthcare Quality and Disparities Report

For the 15th year in a row, AHRQ is reporting on healthcare quality and disparities. The annual *National Healthcare Quality and Disparities Report* (QDR) is mandated by Congress to provide a comprehensive overview of the quality of 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. Selected findings in each priority area are shown in this report, as are examples of large disparities, disparities worsening over time, and disparities showing improvement. A U.S. Department of Health and Human Services (HHS) Interagency Work Group (IWG)<sup>ii</sup> that supports the reports selected the measures for tracking based on their importance, scientific soundness, and feasibility.

In 2015, the National Academy of Medicine published *Vital Signs: Core Metrics for Health and Health Care Progress*. This consensus-based report laid out a broad framework for assessing health and healthcare in the United States. As the *National Healthcare Quality and Disparities Report* works to provide an indepth look at healthcare quality in the United States, the Vital Signs framework can be used as a guide.

It is recognized that coordination and collaboration beyond the health sector is necessary to achieve the best possible outcomes for health and well-being for all Americans. A comparison of the QDR core measures with the Vital Signs core metrics illustrates how findings from the QDR can be used to fill in details needed to inform a broader discussion of health and well-being in the United States (see Appendix E).

## OVERVIEW OF QUALITY AND ACCESS IN THE U.S. HEALTHCARE SYSTEM

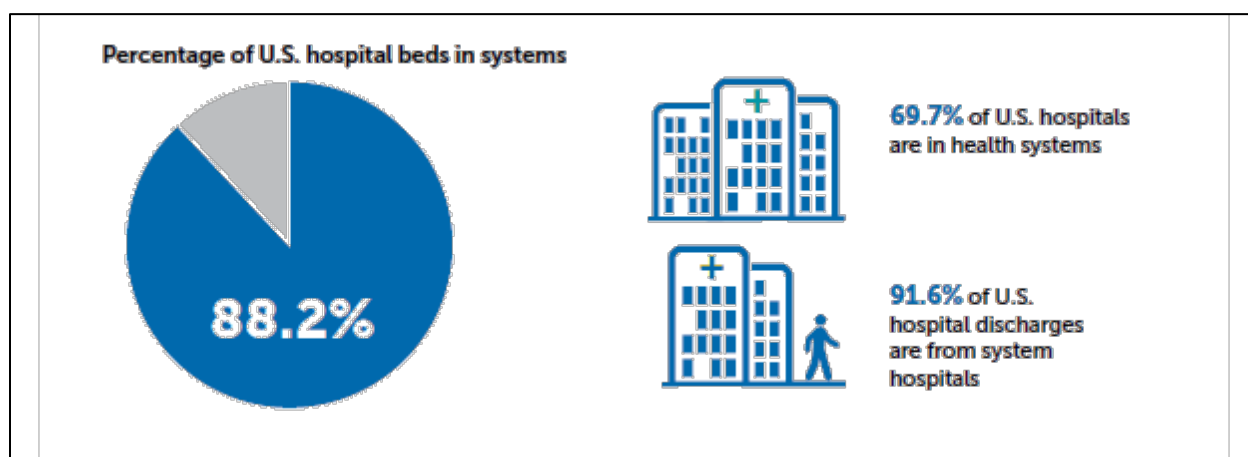
Healthcare in the United States is complex. The healthcare industry employs millions of workers providing billions of services each year. In 2016, there were 626 health systems in the United States (Figure 1).

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<sup>ii</sup> 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, Health Resources and Services Administration, Indian Health Service, and National Institutes of Health.



**Figure 1. U.S. hospitals in health systems**



**Source:** Agency for Healthcare Research and Quality, Snapshot of U.S. Health Systems, 2016 Data Highlight No.1 (<https://www.ahrq.gov/sites/default/files/wysiwyg/snapshot-of-us-health-systems-2016v2.pdf>).

**Note:** The hospital figures represent all nonfederal general acute care hospitals in the United States. A health system is an organization that includes at least one hospital and at least one group of physicians that provides comprehensive care (including primary and specialty care) and is connected with each other and with the hospital through common ownership or joint management.

The QDR 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.

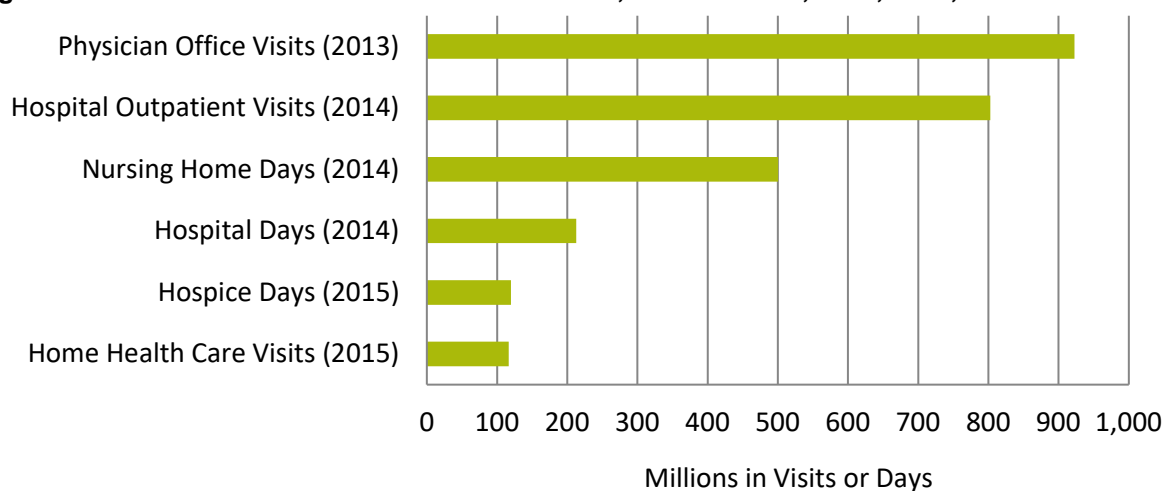
Improving care requires facility administrators and providers to work together to expand access, enhance quality, and reduce disparities. It also requires coordination between the healthcare sector and other sectors for social welfare, education, and economic development. For example, Healthy People 2020 includes 33 social determinants of health objectives for federal programs and interventions.<sup>iii</sup>

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.

<sup>iii</sup> For more information, refer to Healthy People 2020 midcourse review. Chapter IV: Leading Health Indicators. Hyattsville, MD; National Center for Health Statistics; 2016.

<https://www.cdc.gov/nchs/data/hpdata2020/HP2020MCR-B04-LHI.pdf>. Also refer to Chapter 39: Social Determinants of Health (SDOH). <https://www.cdc.gov/nchs/data/hpdata2020/HP2020MCR-C39-SDOH.pdf>.

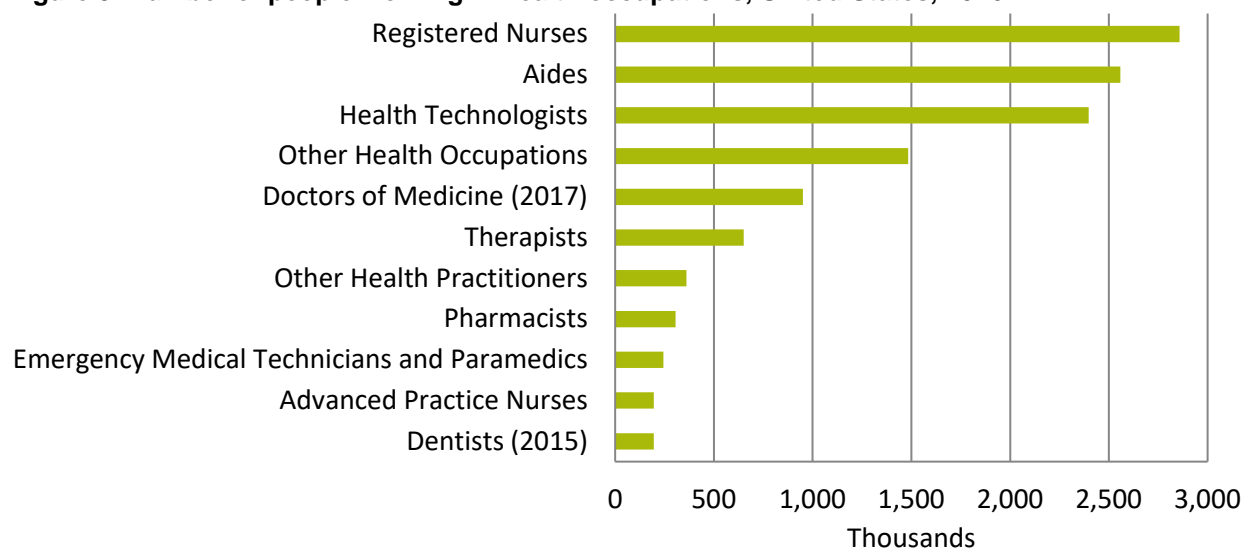
**Figure 2. Number of healthcare service encounters, United States, 2013, 2014, 2015**



**Source:** National Center for Health Statistics (NCHS), *Health, United States, 2016* (physician [Table 76] and hospital outpatient visits and hospital days [Table 82]) (<https://www.cdc.gov/nchs/data/abus/abus16.pdf>); NCHS, Long-term care providers and services users in the United States: data from the National Study of Long-Term Care Providers, 2013-2014 ([https://www.cdc.gov/nchs/data/series/sr\\_03/sr03\\_038.pdf](https://www.cdc.gov/nchs/data/series/sr_03/sr03_038.pdf)) (nursing home days); Medicare Payment Advisory Commission (MedPAC), *Health care spending and the Medicare Program: a data book*, June 2017 ([http://medpac.gov/docs/default-source/data-book/jun17\\_databookentirereport\\_sec.pdf](http://medpac.gov/docs/default-source/data-book/jun17_databookentirereport_sec.pdf)) (home health [Chart 8-9]) and hospice data [Chart 11-7]).

- In 2013, there were 923 million physician office visits, including visits to physicians in health centers (Figure 2).
- In 2014, there were 803 million hospital outpatient visits.
- In 2014, patients spent 500 million days in nursing homes and 213 million days in hospitals.
- In 2015, patients spent 120 million days in hospice.
- In 2015, there were 117 million home health visits.

**Figure 3. Number of people working in health occupations, United States, 2016**



**Source:** National Center for Health Statistics, *Health, United States, 2016*

(<https://www.cdc.gov/nchs/data/abus/abus16.pdf>) (dentists); The Henry J. Kaiser Family Foundation, *State Health Facts, Provider and Service Use, 2017* (<https://www.kff.org/state-category/providers-service-use/>) (doctors); and Bureau of Labor Statistics Occupational Employment Statistics (<https://www.bls.gov/oes/>), 2016 (all other occupations).

**Note:** Doctors of Medicine includes 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.

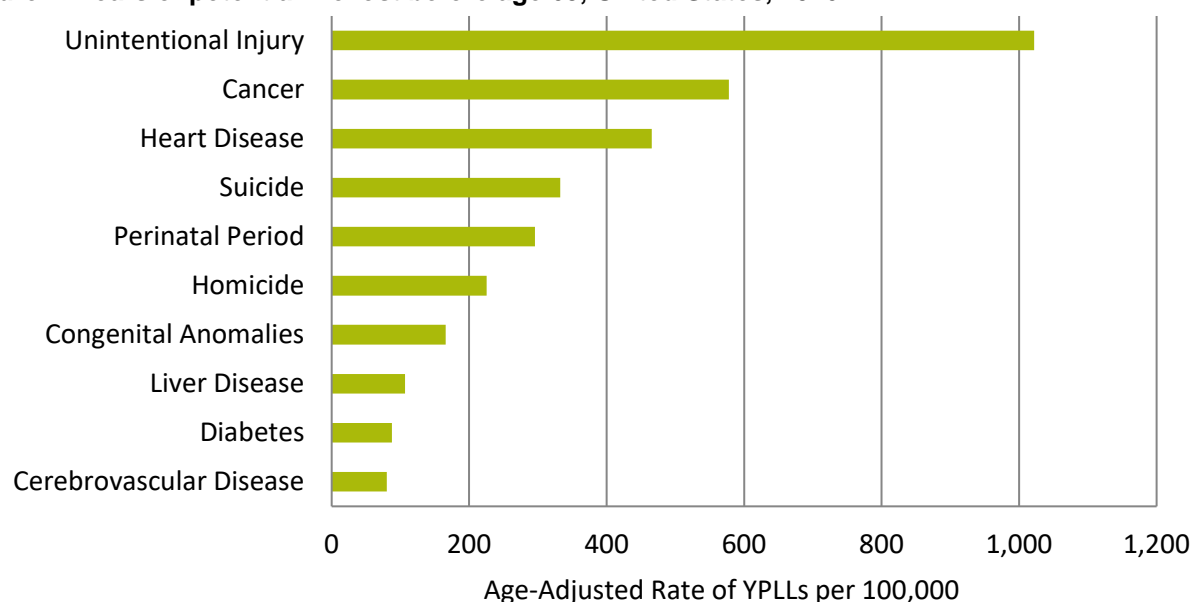
- In 2017, there were 951,000 active medical doctors in the United States, which include doctors of medicine and doctors of osteopathy (Figure 3).
- In 2015, there were 196,000 dentists.
- In 2016, there were also 2.9 million registered nurses, 2.4 million health technologists, and 2.6 million nursing and other aides.
- In 2016, 361,000 other health practitioners provided care, including more than 104,000 physician assistants.

## OVERVIEW OF DISEASE BURDEN IN THE UNITED STATES

The aim of a healthcare system is to mitigate the effects of the leading causes of morbidity and mortality. The QDR tracks care for most of these conditions. 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 (Gardner & Sanborn, 1990).

**Figure 4. Years of potential life lost before age 65, United States, 2016**



**Key:** YPLL = years of potential life lost.

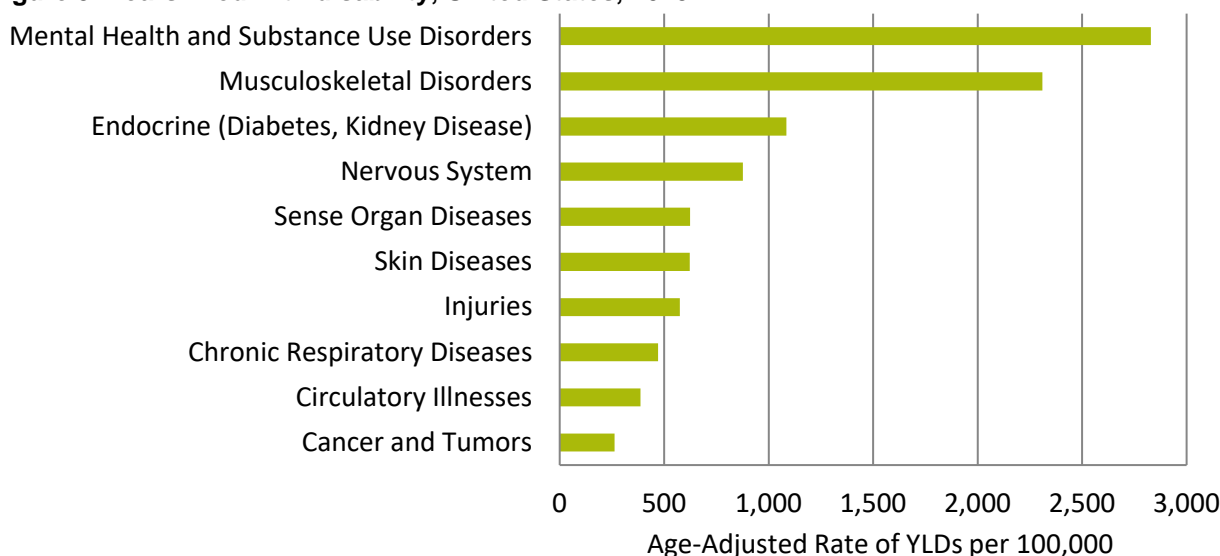
**Source:** Centers for Disease Control and Prevention, [National Center for Injury Prevention and Control](https://webappa.cdc.gov/sasweb/ncipc/ypll.html), Years of Potential Life Lost (YPLL) Reports, 1999–2016. <https://webappa.cdc.gov/sasweb/ncipc/ypll.html>.

**Note:** The perinatal period occurs from 22 completed weeks (154 days) of gestation and ends 7 completed days after birth.<sup>iv</sup>

- The three leading diseases and injuries contributing to years of potential life lost (YPLLs) (unintentional injury, cancer, and heart disease) did not change between 2006 and 2016 (Figure 4).
- From 2006 to 2016, there was a 26% increase in YPLLs caused by suicide, moving its rank from number 5 to number 4.
- From 2006 to 2016, there was a 24% increase in YPLLs caused by liver disease, moving its rank from number 10 to number 8.
- From 2006 to 2016, YPLLs caused by HIV decreased by 65%, moving from 9 to 15 in the ranking (data not shown).
- From 2006 to 2016, diabetes moved from 11 to 9 in the ranking.

<sup>iv</sup> World Health Organization, Maternal and Perinatal Health.  
[http://www.who.int/maternal\\_child\\_adolescent/topics/maternal/maternal\\_perinatal/en/](http://www.who.int/maternal_child_adolescent/topics/maternal/maternal_perinatal/en/).

**Figure 5. Years lived with disability, United States, 2015**

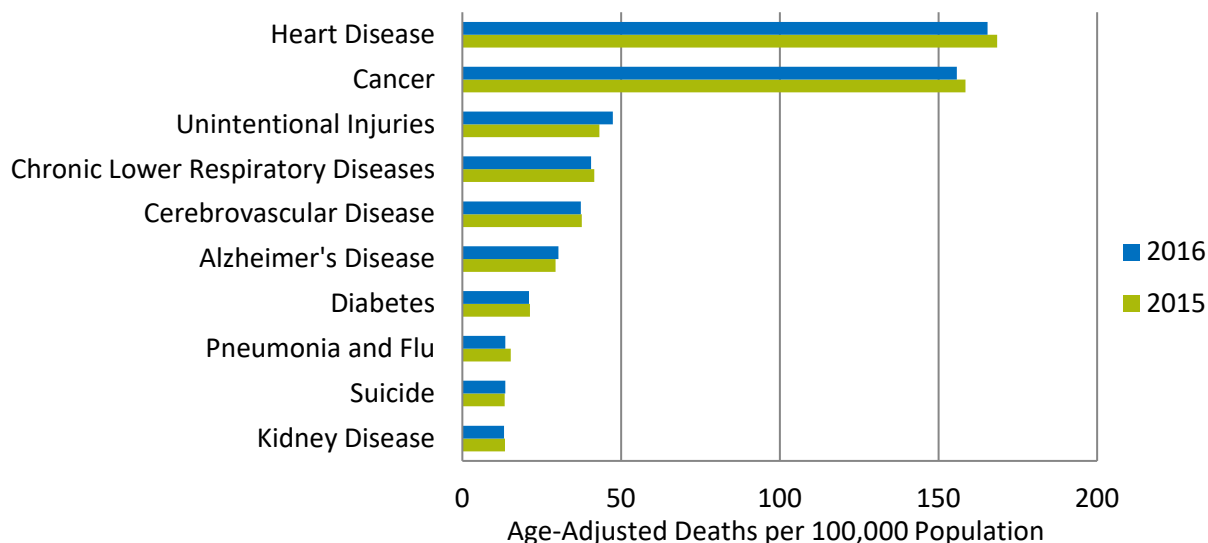


**Key:** YLD = years lived with disability.

**Source:** Kaiser Family Foundation analysis of data from Institute for Health Metrics and Evaluation. Global Burden of Disease Study 2015 (GBD 2015) Data Downloads.

- Years lived with disability (YLD) accounts for the severity of the disability and is typically weighted so that young adult ages are valued higher than infants or very old adults, since young adults are in their years of peak productivity.
- Mental health and substance use disorders (2,829 per 100,000 population), musculoskeletal disorders (2,310 per 100,000 population), and endocrine disorders, including diabetes and kidney disease (1,085 per 100,000 population) accounted for most YLDs in 2015 (Figure 5).
- Cancer and tumors ranked 10<sup>th</sup>, with a rate of 263 per 100,000 population.

**Figure 6. Leading causes of death for the total population, United States, 2015 and 2016**



**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System - Mortality. Mortality in the United States, 2016. <https://www.cdc.gov/nchs/products/databriefs/db293.htm>.

- In 2015 and 2016, heart disease, cancer, unintentional injuries, chronic lower respiratory diseases, cerebrovascular disease, Alzheimer's disease, and diabetes were among the leading causes of death for the overall U.S. population (Figure 6).
- Suicide, the 10<sup>th</sup> leading cause of death in 2015, became the 9<sup>th</sup> leading cause in 2016.
- From 2015 to 2016, age-adjusted death rates decreased for 7 of 10 leading causes of death and increased for 3.
- The rate decreased 1.8% for heart disease, 1.7% for cancer, 2.4% for chronic lower respiratory diseases, 0.8% for cerebrovascular disease, 1.4% for diabetes, 11.2% for pneumonia and flu, and 2.2% for kidney disease.
- The rate increased 9.7% for unintentional injuries, 3.1% for Alzheimer's disease, and 1.5% for suicide.

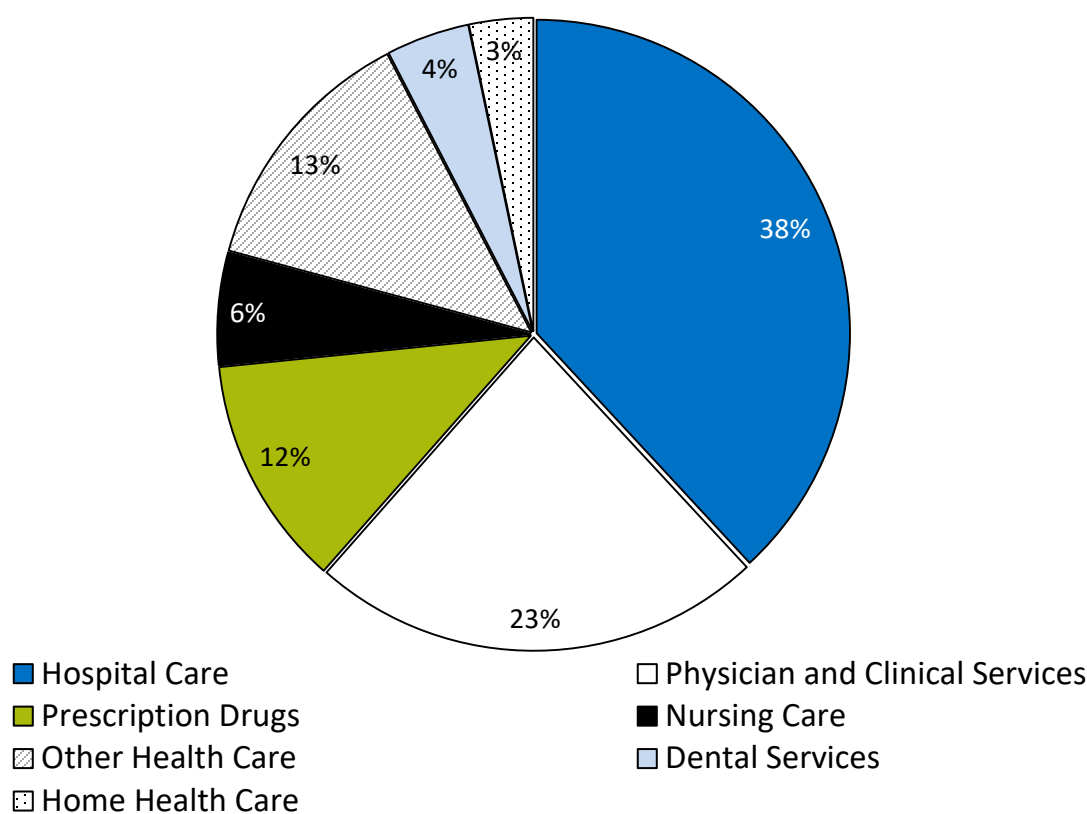
The years of potential life lost, years with disability, and leading causes of death illustrate the burden of disease experienced by the American people. Findings highlighted in the Trends in Quality section of this report attempt to quantify progress made in improving the quality of care, reducing disparities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

## **OVERVIEW OF HEALTHCARE COSTS IN THE UNITED STATES**

The cost of healthcare is an important factor not only for access to healthcare but also for value and efficiency in healthcare, which are considerations when assessing quality of care. In 2015, U.S. healthcare spending increased 5.8% to \$3.2 trillion, or \$9,990 per person. In addition, the overall share of the U.S. economy devoted to healthcare spending increased slightly, from 17.4% in 2014 to 17.8% in 2015 (CMS, 2015).

Expenditures from multiple sources channeled to both the public and private sectors of care make it challenging to control growth in healthcare costs. New delivery system models such as the patient-centered medical home (PCMH) have been developed to coordinate fragmented care across sectors and may promote more efficient healthcare spending.

**Figure 7. Personal healthcare expenditures, by type of expenditure, 2015**

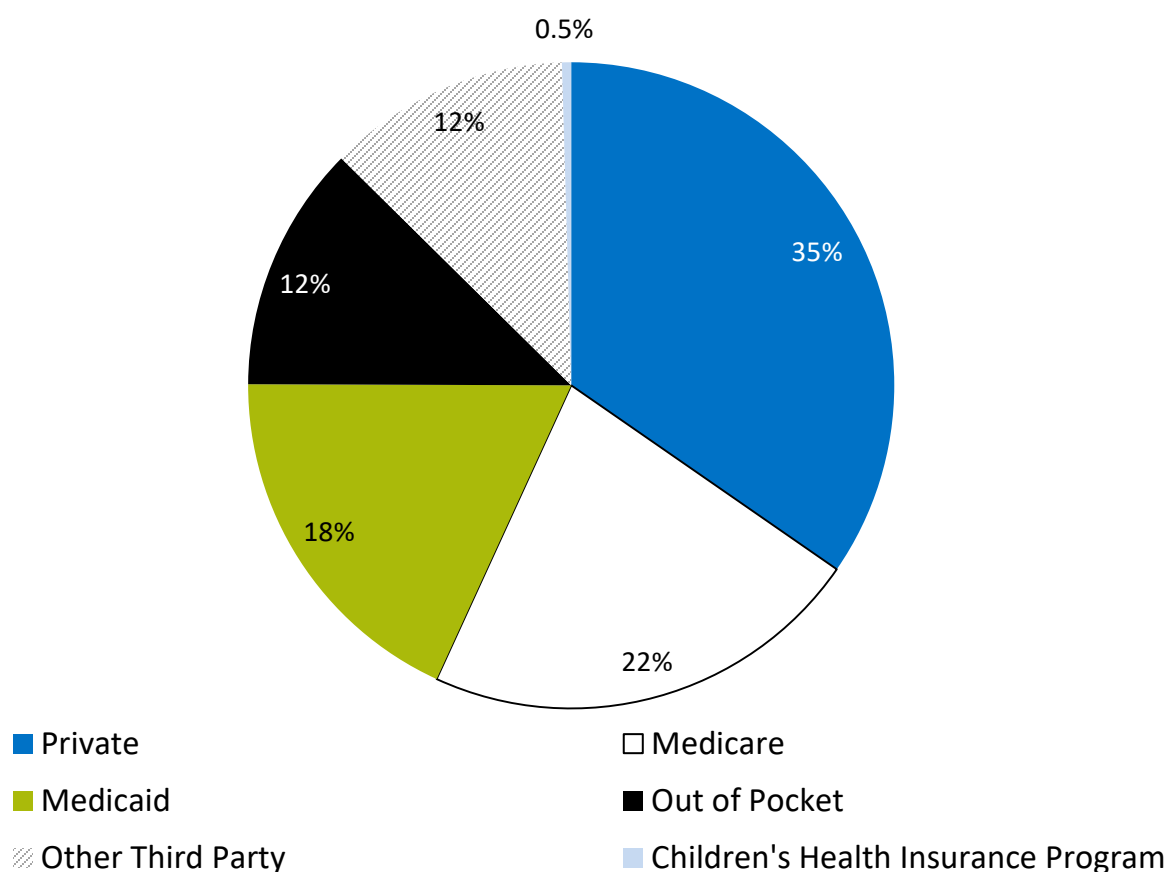


**Source:** Centers for Medicare & Medicaid Services, National Health Expenditures by type of service and source of funds, CY 1960-2015. <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical.html>.

**Note:** 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. More detailed information is available at <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/Downloads/DSM-16.pdf>. Percentages do not add to 100 due to rounding.

- In 2015, hospital care expenditures were \$1.04 trillion, nearly 40% of personal healthcare expenditures (Figure 7).
- Expenditures for physician and clinical services were \$634.9 billion, almost one-fourth of personal healthcare expenditures
- Prescription drug expenditures were \$324.6 billion, 12% of personal healthcare expenditures.
- Expenditures for dental services were \$117.5 billion, 4% of personal healthcare expenditures.
- Nursing care facility expenditures were \$156.8 billion and home healthcare expenditures were \$88.8 billion, 6% and 3% of personal healthcare expenditures, respectively.

**Figure 8. Personal healthcare expenditures, by source of funds, 2015**



**Source:** Centers for Medicare & Medicaid Services, National Health Expenditures Account, as reported in *Health, United States, 2016*. <https://www.cdc.gov/nchs/hus/index.htm>.

**Note:** 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. Percentages do not add to 100 due to rounding.

- In 2015, private insurance accounted for 35% of personal healthcare expenditures, followed by Medicare, Medicaid, and out of pocket (Figure 8).
- Sources of funds varied by type of expenditure (data not shown):
  - Private insurance accounted for 39% of hospital, 43% of physician, 11% of home health, 9% of nursing home, 47% of dental, and 43% of prescription drug expenditures.
  - Medicare accounted for 25% of hospital, 23% of physician, 40% of home health, 24% of nursing home, 0.4% of dental, and 29% of prescription drug expenditures.
  - Medicaid accounted for 18% of hospital, 11% of physician, 36% of home health, 32% of nursing home, 10% of dental, and 10% of prescription drug expenditures.
  - Out-of-pocket payments accounted for 3% of hospital, 9% of physician, 10% of home health, 26% of nursing home, 40% of dental, and 14% of prescription drug expenditures.

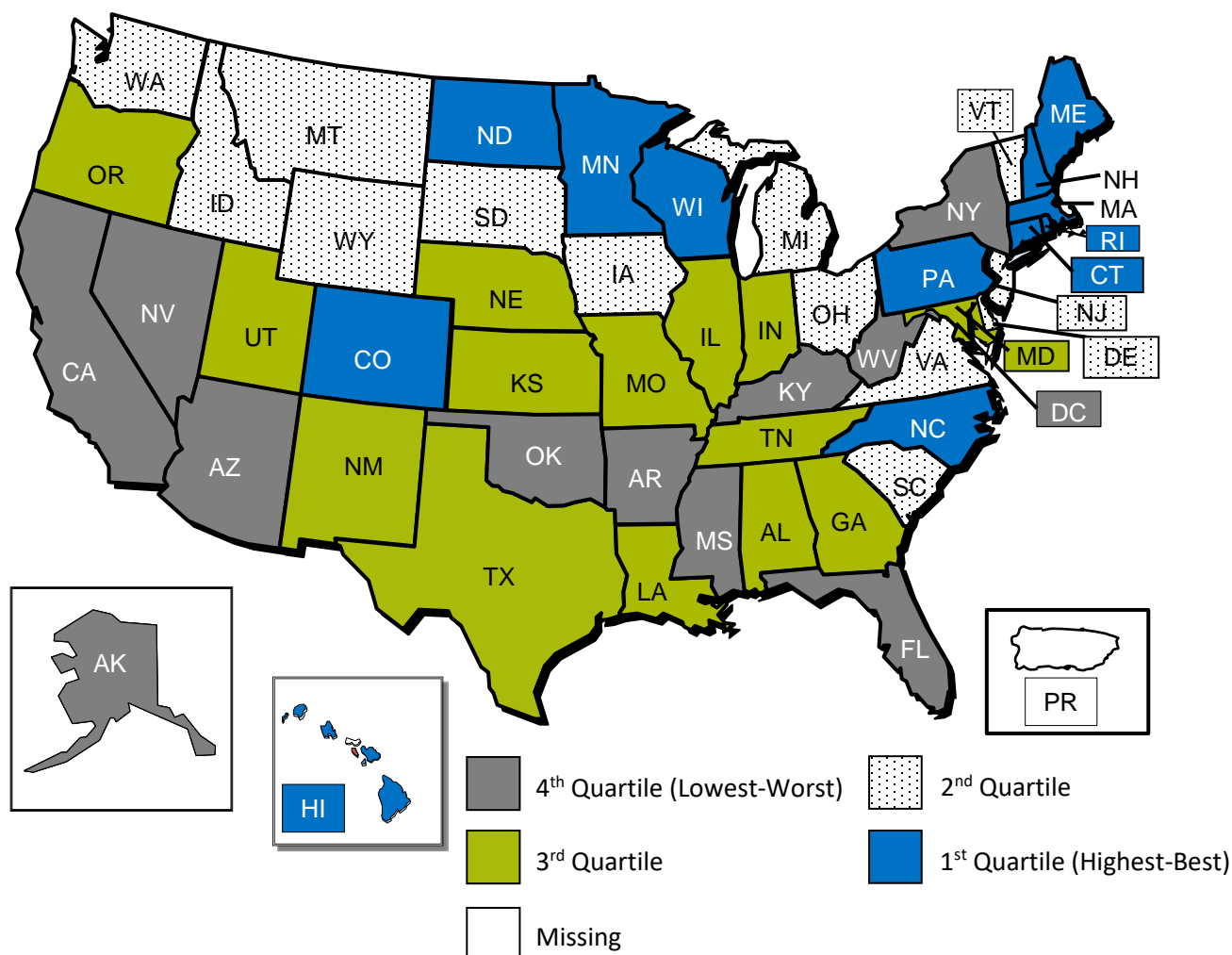
Personal health expenditures illustrate the economic burden of disease and barriers to access to healthcare. Findings from the Access and Disparities in Access to Healthcare section of this report show the progress and opportunities for improvement in overcoming these barriers.



## STATE VARIATION IN HEALTHCARE QUALITY AND DISPARITIES

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 9. Overall quality of care, by state, 2014-2016**

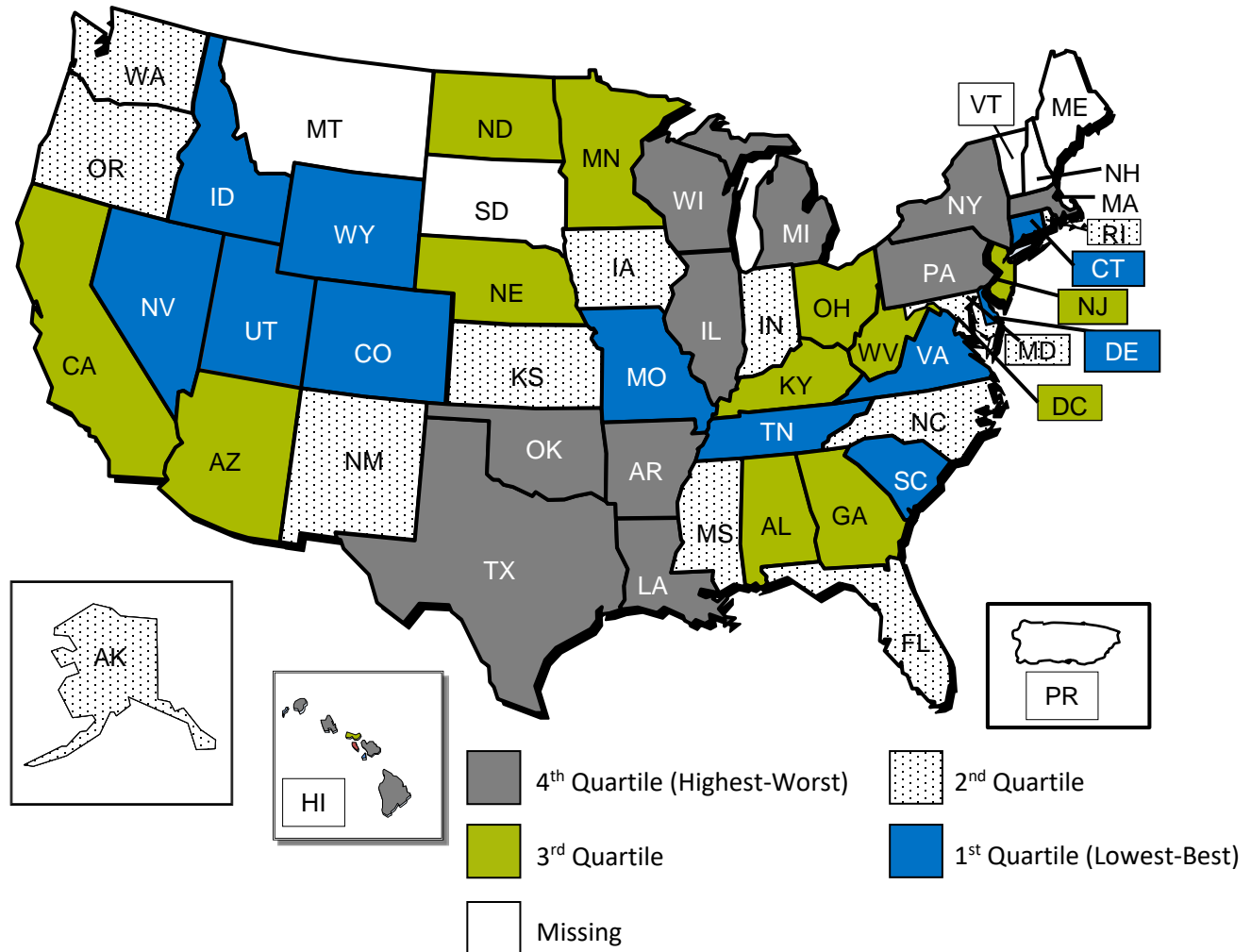


**Note:** All state-level measures with data are used to compute an overall quality score for each state based on the number of quality measures above, at, or below the average across all states. States were ranked and quartiles are shown on the map. The states with the worst quality score are in the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

- Overall quality of care varied across the United States (Figure 9):
  - Some states in the Midwest (Minnesota, North Dakota, and Wisconsin), some in the Northeast (Connecticut, Maine, Massachusetts, New Hampshire, Pennsylvania, and Rhode Island), and Colorado, Hawaii, and North Carolina had the highest overall quality scores. Scores were based on the number of measures that were better, same, or worse than the national average for each measure.

- Many Southern and Southwestern states (Arkansas, District of Columbia, Florida, Kentucky, Mississippi, Oklahoma, and West Virginia), several Western states (Arizona, California, and Nevada), and New York and Alaska had the lowest overall quality scores.

**Figure 10. Average differences in quality of care for Blacks, Hispanics, and Asians compared with Whites, by state, 2015-2016**



**Note:** All measures in this report that had state-level data to assess racial and ethnic disparities were used. Separate quality scores were computed for Whites, Blacks, Hispanics, and Asians. For each state, the average of the Black, Hispanic, and Asian scores was divided by the White score. State-level AI/AN data were not available for analysis. States were ranked on this ratio, and quartiles are shown on the map. The states with the worst disparity score are in the fourth quartile, and states with the best disparity score are in the first quartile. Disparity scores were not risk adjusted for population characteristics in each state, so these findings do not take into account population differences between states. See Appendix B for a list of measures used for this map.

- Racial and ethnic disparities varied across the United States (Figure 10):
  - Some Western and Midwestern states (Colorado, Idaho, Missouri, Nevada, Utah, and Wyoming), several Southern states (Delaware, South Carolina, Tennessee, and Virginia) and Connecticut had the fewest racial and ethnic disparities overall.

- Several Northeastern states (Massachusetts, New York, and Pennsylvania), some Midwestern states (Illinois, Michigan, and Wisconsin), some Southern states (Arkansas, Louisiana, Oklahoma, and Texas), and Hawaii had the most racial and ethnic disparities overall.

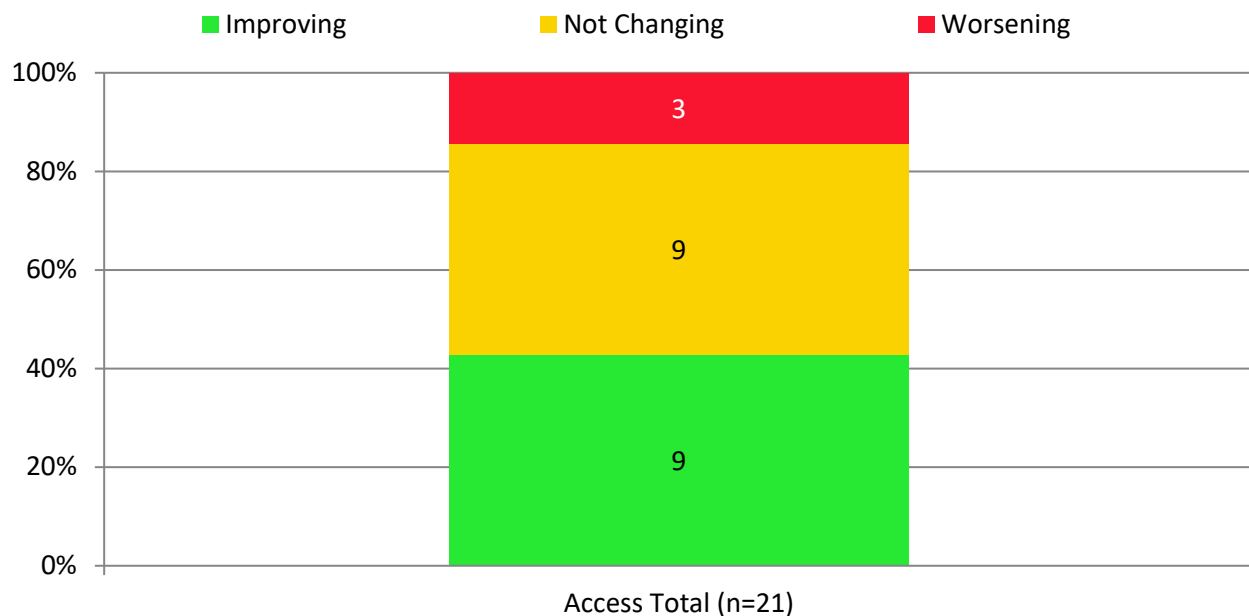
## ACCESS TO HEALTHCARE AND DISPARITIES IN ACCESS

To obtain high-quality care, Americans must first gain entry into the healthcare system. Measures of access to care tracked in the QDR include having health insurance, having a usual source of care, encountering difficulties when seeking care, and receiving care as soon as wanted.

Historically, Americans have experienced variable access to care based on race, ethnicity, socioeconomic status, age, sex, disability status, sexual orientation, gender identity, and residential location.<sup>v</sup> This report discusses findings that showed the largest statistically significant disparities related to some of these variables where data are available.

### Overall Trends in Access

**Figure 11. Number and percentage of access measures for which measure trends were improving, not changing, or worsening, 2000-2016**



**Key:** n = number of measures.

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

<sup>v</sup> Data on measures for these populations are available in the Data Query system. For some categories, such as sexual orientation and gender identity, data are not available. Further data collection efforts may be needed for these areas.

- Overall, some access measures improved (Figure 11). Some of the largest improvements in access include:
  - Children who had any appointments for routine healthcare in the last 12 months who sometimes or never<sup>vi</sup> got an appointment for routine care as soon as needed, which declined from 10.2% in 2002 to 5.2% in 2015 (AHRQ, Medical Expenditure Panel Survey [MEPS]) (Appendix A, [Graph 1](#)).
  - People who were in fair or poor health with a specific source of ongoing care, which increased from 87.5% in 2009 to 90.5% in 2016 (Centers for Disease Control and Prevention [CDC], National Center for Health Statistics [NCHS], National Health Interview Survey [NHIS]) (Appendix A, [Graph 2](#)).
  - People with a specific source of ongoing care, which increased from 85.5% in 2009 to 88.2% in 2016 (CDC, NCHS, NHIS). (Appendix A, [Graph 3](#)).
- Some measures got worse, including:
  - 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, which increased from 4.2% in 2008 to 4.8% in 2015 (AHRQ, MEPS) (Appendix A, [Graph 4](#)).

## Trends in Access Disparities

Most disparities in access to care showed no statistically significant changes, with a few exceptions. The following access measures showed that disparities over time improved (the difference between the comparison group and reference group decreased) from the baseline data year to the most recent data year<sup>vii</sup>:

- From 2002 to 2015, disparities between AI/ANs and Whites decreased for the percentage of people with a usual source of care, excluding hospital emergency rooms, who has office hours at night or on weekends. The percentage for AI/ANs increased (from 35.0% to 45.8%) while the percentage did not change significantly for Whites (from 45.3% to 41.0%) (AHRQ, MEPS, 2015) (Appendix A, [Graph 5](#)).
- From 2008 to 2015, disparities between uninsured and privately insured people decreased for the percentage of adults ages 18-64 who reported that they sometimes or never found it easy to access care, tests, or treatment. The percentage for uninsured people decreased (from 29.7% to 18.5%) while the change for privately insured people (from 7.5% to 6.9%) was not statistically significant (AHRQ, MEPS, 2015) (Appendix A, [Graph 6](#)).

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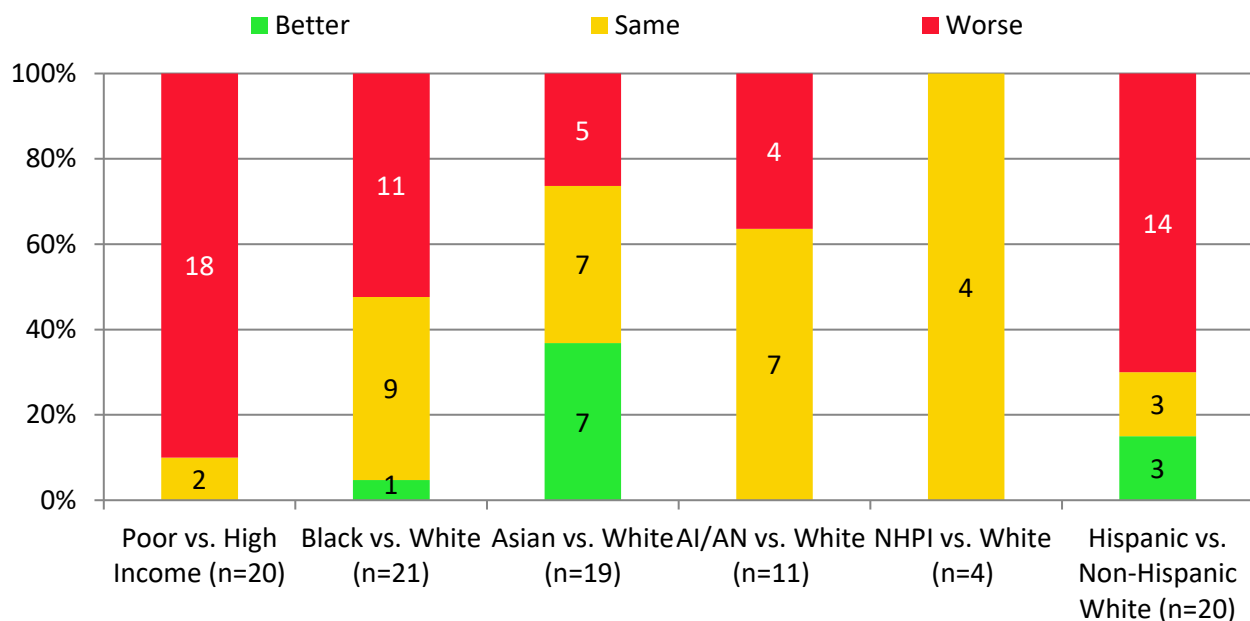
<sup>vi</sup> The wording reflects a Likert-type scale with the following options: Always, Usually, Sometimes, Never. Sometimes or Never is a combined category that is the opposite of Always.

<sup>vii</sup> Trends in disparities are defined as a change in the difference between a comparison group and reference group from the baseline data year to the most recent data year. The change in disparities is the absolute difference in annual percentage of change between the comparison group and reference group. The annual percentage of change is estimated using unweighted linear regression. For more information, see Introduction and Methods.

- From 2008 to 2015, disparities between Asians and Whites decreased for the percentage of adults ages 18-64 who reported that they sometimes or never found it easy to access care, tests, or treatment. The percentage decreased both for Asians (from 21.1% to 8.7%) and for Whites (from 8.2% to 6.7%) (AHRQ, MEPS, 2015) (Appendix A, [Graph 7](#)).

## Snapshot of Disparities in Access

**Figure 12. Number and percentage of access measures for which members of selected groups experienced better, same, or worse access to care compared with reference group, 2014-2016**



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

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

For the most recent data year (2015-2016), findings show that many disparities persist in access to care. Selected findings below show the largest disparities for each population.

### Poor People

Poor people (at or below 100% of the Federal Poverty Level [FPL]) experienced worse access to care compared with high-income people (400% or more of FPL) for 18 of 20 access measures (Figure 12; see Appendix B). Across the QDR measure set for 2015-2016 (most recent data year), the following access measures showed the largest disparities between poor people and high-income people:

- People under age 65 who were uninsured all year (15.5% for poor compared with 4.2% for high income) (AHRQ, MEPS, 2015) (Appendix A, [Graph 8](#)).
- People under age 65 with any period of uninsurance during the year (30.6% for poor compared with 10.2% for high income) (AHRQ, MEPS, 2015) (Appendix A, [Graph 9](#)).

## Blacks

Blacks experienced worse access to care compared with Whites for 52% of the measures and the same access to care for 43% of the measures (Figure 12; see Appendix B). Access measures that showed the largest disparities between Blacks and Whites include:

- 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, which was higher for Blacks compared with Whites (8.8% compared with 4.3%) (AHRQ, MEPS, 2015) (Appendix A, [Graph 10](#)).
- 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, which was higher for Blacks compared with Whites (17.1% compared with 10.5%) (AHRQ, MEPS, 2015) (Appendix A, [Graph 11](#)).

## Asians

Asians experienced worse access to care compared with Whites for 26% of the measures, the same access for 37% of the measures in the QDR measure set, and better access for 37% of the measures (Figure 12; see Appendix B). Access measures that showed the largest disparities between Asians and Whites include:

- 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, which was higher for Asians than for Whites (25.3% compared with 12.6%) (AHRQ, MEPS, 2015) (Appendix A, [Graph 12](#)).
- 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, which was higher for Asians than for Whites (13.0% compared with 4.3%) (AHRQ, MEPS, 2015) (Appendix A, [Graph 13](#)).

## American Indians and Alaska Natives

Among the 11 measures in the QDR measure set that had data for AI/ANs for the most recent data year 2015-2016, 4 showed worse care for AI/ANs compared with Whites, and 7 showed the same access to care for AI/ANs (Figure 12; see Appendix B). Access measures that showed the largest disparities between AI/ANs and Whites include:

- People under age 65 with health insurance, which was lower for AI/ANs than for Whites (74.6% compared with 89.8%) (CDC, NCHS, NHIS, 2016) (Appendix A, [Graph 14](#)).
- People under age 65 who were uninsured all year, which was higher for AI/ANs than for Whites (20.1% compared with 9.6%) (AHRQ, MEPS, 2015) (Appendix A, [Graph 15](#)).

## Native Hawaiians/Pacific Islanders

Only 4 measures in the QDR measure set had data for NHPIs and all 4 showed the same access to care (Figure 12; see Appendix B).

## Hispanics

Hispanics experienced worse access to care compared with non-Hispanic Whites for 70% of the measures in the QDR measure set for the most recent data year 2015-2016, the same access for 15% of the measures, and better access for 15% of the measures (Figure 12; see Appendix B). Access measures that showed the largest disparities between Hispanics and non-Hispanic Whites include:

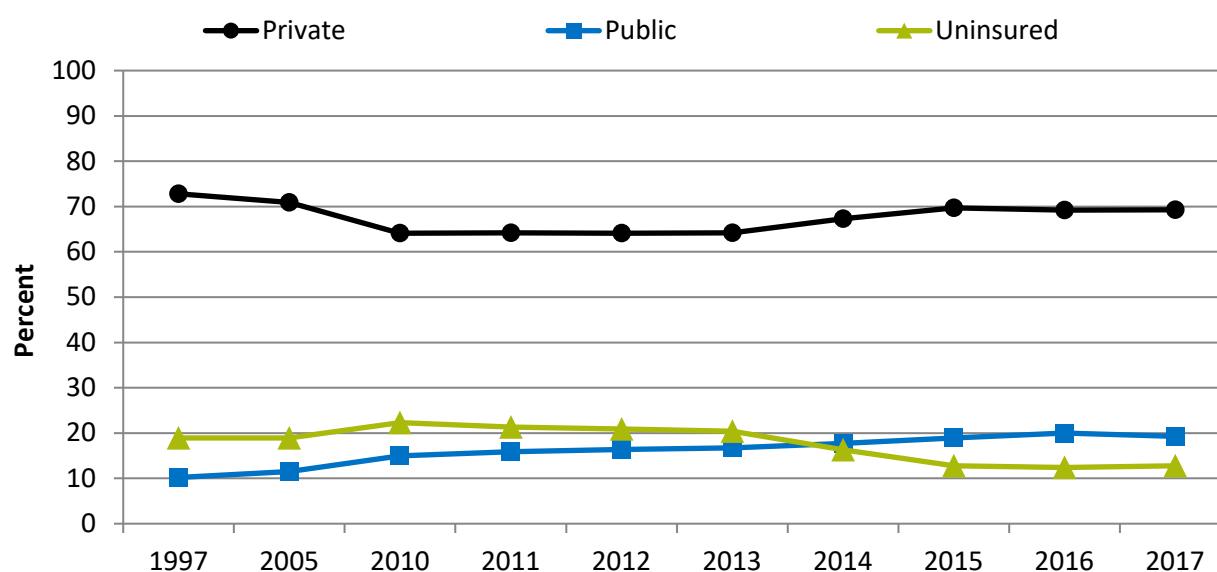
- People under age 65 who were uninsured all year, which was higher for Hispanics compared with non-Hispanic Whites (18.9% compared with 6.5%) (AHRQ, MEPS, 2015) (Appendix A, [Graph 16](#)).
- Children who had any appointments for routine healthcare in the last 12 months who sometimes or never got an appointment for routine care as soon as needed, which was higher for Hispanics than for non-Hispanic Whites (7.7% compared with 3.1%) (AHRQ, MEPS, 2015) (Appendix A, [Graph 17](#)).

## Trends in Health Insurance Coverage

The Early Release Program of the National Health Interview Survey (NHIS) provides timely data on health insurance coverage in the United States. Since these are the latest data published, these data are not included in the summary analyses conducted for this report. However, it is important to note the status of health insurance coverage with the most recent data available at the time this report was released.

Below are findings from the *Health Insurance Coverage: Early Release of Estimates From the National Health Interview Survey, 2017 Report*. More information about the estimates are available on the NHIS website at <https://www.cdc.gov/nchs/nhis.htm>.

**Figure 13. Adults ages 18-64 who were uninsured or had private or public coverage at the time of interview, 1997-2017**

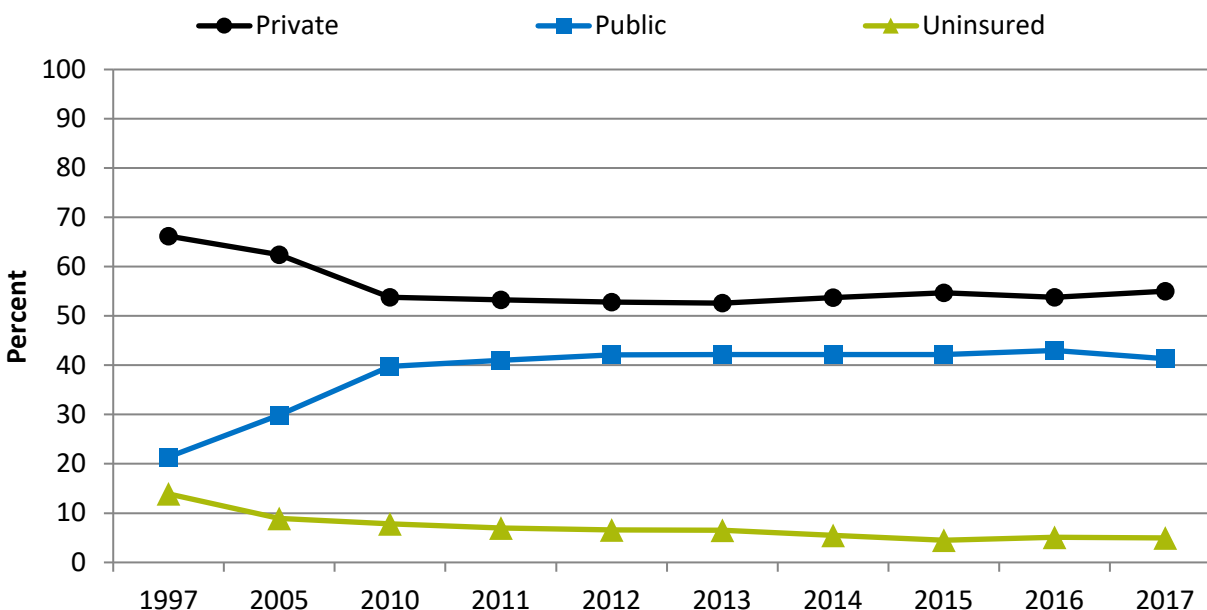


**Source:** National Center for Health Statistics, National Health Interview Survey Early Release Program, 2017. <https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur201805.pdf>.

**Note:** A small number of people were covered by both public and private plans and were included in both categories.

- In 2017, among adults ages 18-64, 69.3% had private health insurance, 19.3% had public coverage, and 12.8% were uninsured at the time of interview (Figure 13).
- After generally increasing, more recently, the percentage of adults ages 18-64 who were uninsured at the time of interview generally decreased.
- Corresponding increases have occurred in both public and private coverage among adults ages 18-64.

**Figure 14. Children ages 0-17 years who were uninsured or had private or public coverage at the time of interview, 1997-2017**



**Source:** National Center for Health Statistics, National Health Interview Survey Early Release Program, 2017.

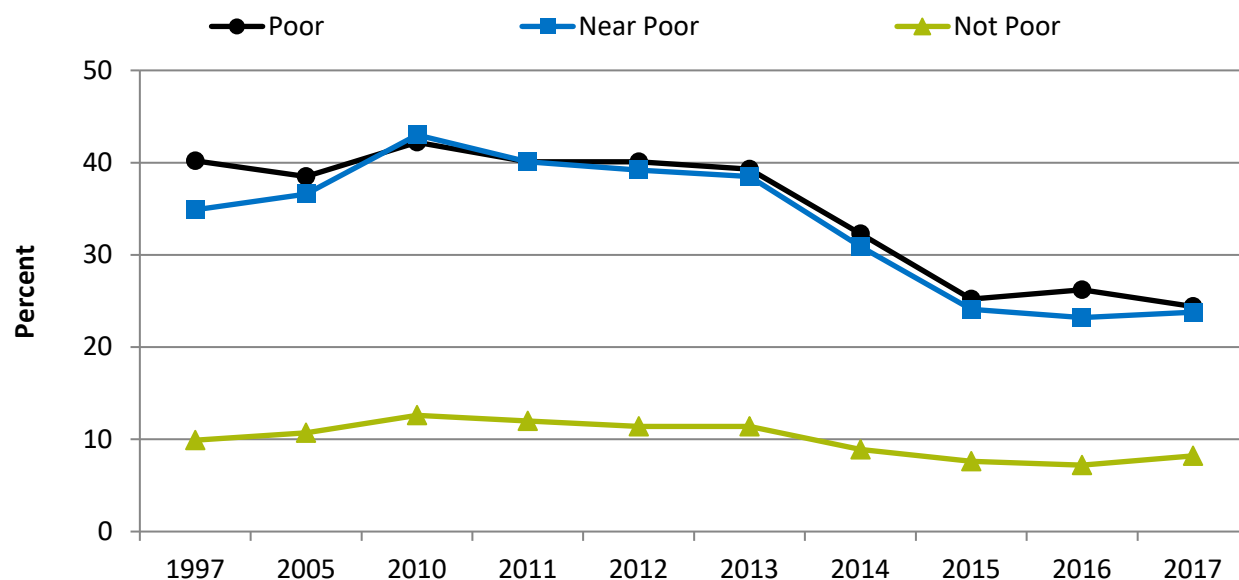
<https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur201805.pdf>.

**Note:** A small number of people were covered by both public and private plans and were included in both categories.

- In 2017, among children ages 0-17 years, 55.0% had private health insurance, 41.3% had public coverage, and 5.0% were uninsured (Figure 14).
- The percentage of children who were uninsured generally decreased over time.
- While the percentage of children with private health insurance coverage has decreased and public coverage has increased over time, the percentage of children with public or private coverage has leveled off in recent years.



**Figure 15. Adults ages 18–64 who were uninsured at the time of interview, by poverty status, 1997-2017**



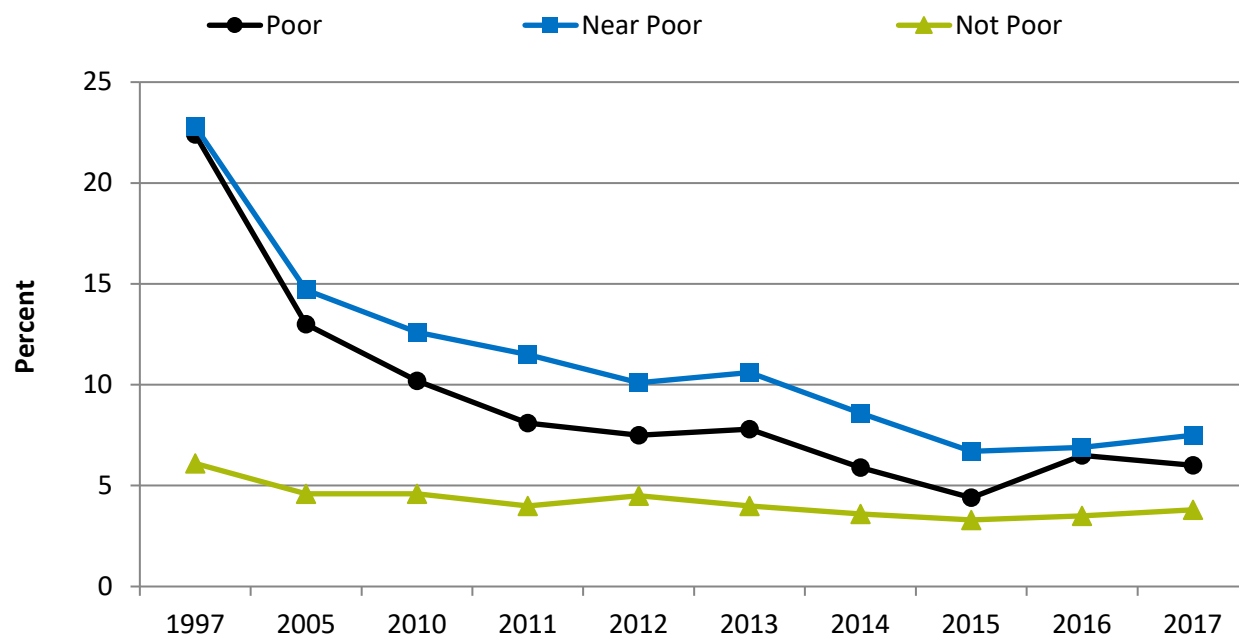
**Source:** National Center for Health Statistics, National Health Interview Survey Early Release Program, 2017.

<https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur201805.pdf>.

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

- In 2017, among adults ages 18-64, 24.4% of those who were poor, 23.8% of those who were near poor, and 8.2% of those who were not poor lacked health insurance coverage at the time of interview (Figure 15).
- A decrease was observed in the percentage of uninsured adults from 2010 through 2017 among all three poverty status groups. However, the greatest decreases in the uninsured rate since 2013 were among adults who were poor or near poor.
- More recently, among adults who were poor, near poor, and not poor, there was no statistically significant change from 2015 through 2017 in the percentage uninsured.

**Figure 16. Children ages 0-17 years who were uninsured at the time of interview, by poverty status, 1997-2017**



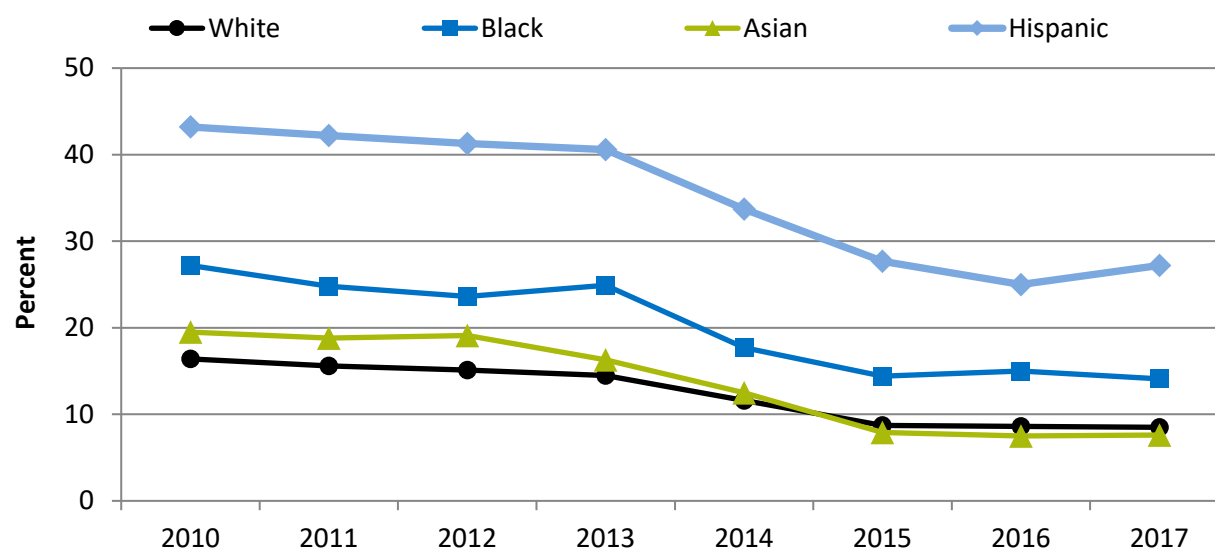
**Source:** National Center for Health Statistics, National Health Interview Survey Early Release Program, 2017.

<https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur201805.pdf>.

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

- In 2017, among children ages 0-17 years, 6.0% of those who were poor, 7.5% of those who were near poor, and 3.8% of those who were not poor lacked health insurance coverage at the time of interview (Figure 16).
- A general decrease in the percentage of uninsured children was observed among poor, near poor, and not poor households from 2010 through 2015.
- From 2015 through 2017, among children who were near poor and not poor, there was no statistically significant change in the percentage who were uninsured.
- Among poor children, the percentage who were uninsured increased from 4.4% in 2015 to 6.5% in 2016. The decline from 6.5% in 2016 to 6.0% in 2017 was not statistically significant.

**Figure 17. Adults ages 18-64 who were uninsured at the time of interview, by race/ethnicity, 2010-2017**



**Source:** National Center for Health Statistics, National Health Interview Survey Early Release Program, 2017.

<https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur201805.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/Alaska Natives are not available for this measure.

- In 2017, among adults ages 18-64, 8.5% of Whites, 14.1% of Blacks, 7.6% of Asians, and 27.2% of Hispanics lacked health insurance coverage at the time of interview (Figure 17).
- Significant decreases in the percentage of uninsured adults were observed from 2013 through 2017 for Whites, Blacks, Asians, and Hispanics.
- Hispanic adults had the greatest percentage point decrease in the uninsured rate from 2013 (40.6%) through 2016 (25.0%).
- The observed increase among Hispanic adults between 2016 (25.0%) and 2017 (27.2%) was not statistically significant; nor were there any statistically significant changes for the other groups during this time.

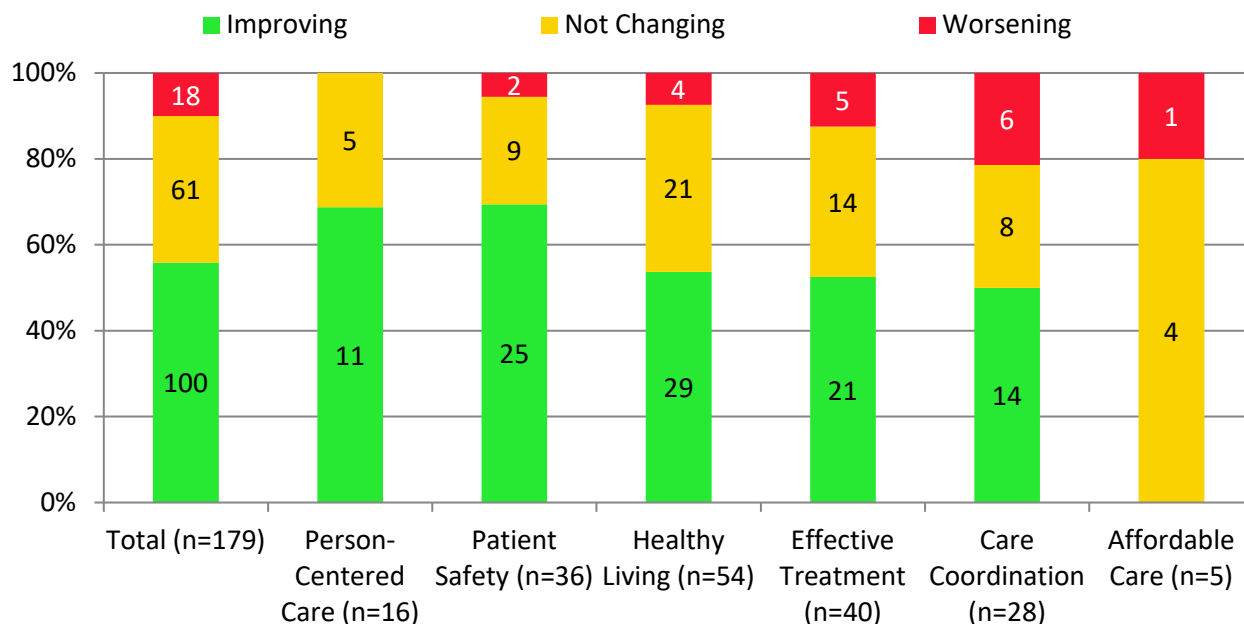
## QUALITY AND DISPARITIES IN QUALITY OF HEALTHCARE

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

### Trends in Quality

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

**Figure 18. Number and percentage of all quality measures that were improving, not changing, or worsening, total and by priority area, from 2000 through 2016**



**Key:** n = number of measures.

**Note:** Most measures are tracked from 2000 through 2016. For more information, review Appendix B.

### Trends in Person-Centered Care

Person-centered care means defining success not just by the resolution of clinical symptoms but also by whether patients achieve their desired outcomes. Almost 70% of person-centered care measures were improving overall (Figure 18).

- For example, overall trends from 2002 to 2015 showed significant improvement in provider-patient communication for adults who had doctor visits in the past 12 months who reported their health provider sometimes or never listened carefully (10.3% compared with 6.7%) (Appendix A, [Graph 18](#)).

### Trends in Patient Safety

Ensuring patient safety means providing care free from accidental injury due to medical care or medical errors (Kohn, et al., 2000). The QDR tracks a number of patient safety measures organized by the major healthcare settings responsible for measuring, understanding, and improving healthcare. Measures include healthcare-associated infections, pressure ulcers in nursing homes, inappropriate prescription medications, and hospital readmissions.

More than two-thirds of patient safety measures were improving overall (Figure 18), including:

- Hospital admissions with central venous catheter-related bloodstream infections, which declined from 1.9 per 1,000 discharges in 2008 to 0.67 per 1,000 discharges in 2015 (AHRQ, Healthcare Cost and Utilization Project [HCUP], Nationwide Inpatient Sample [NIS], 2008-2011; State Inpatient Databases [SID], 2012-2015; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 19](#)).

- Adult patients receiving hip joint replacement due to degenerative conditions who had adverse events, which improved from 4.0% in 2009 to 1.7% in 2015 (AHRQ and Centers for Medicare & Medicaid Services [CMS], Medicare Patient Safety Monitoring System [MPSMS]) (Appendix A, [Graph 20](#)).
- Adult patients receiving knee replacement who had adverse events, which improved from 3.3% in 2009 to 1.7% in 2015 (AHRQ and CMS, MPSMS) (Appendix A, Graph Section 8) (Appendix A, [Graph 21](#)).

Two patient safety measures worsened:

- Postoperative physiologic and metabolic derangements per 1,000 elective-surgery admissions, adults age 18 and over, which increased from 1.22 in 2000 to 1.51 in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 22](#)).<sup>viii</sup>
- Adults who reported the provider asked to see all the prescription and over-the-counter medicines they were taking when they initiated home healthcare, which decreased from 78.8% in 2012 to 77.6% in 2016 (CMS, Home Health Consumer Assessment of Healthcare Providers and Systems [HCAHPS]). (Appendix A, [Graph 23](#)).

## Trends in Healthy Living

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

More than half of healthy living measures were improving overall (Figure 18), including adolescent vaccinations and influenza vaccinations:

- From 2008 to 2015, the percentage of adolescents ages 13-15 and 16-17 who received Tdap<sup>ix</sup> vaccine since age 10 increased from 46.7% to 87.1% and from 31.9% to 85.3%, respectively (CDC, National Center for Immunizations and Respiratory Diseases [NCIRD] and National Center for Health Statistics [NCHS], National Immunization Survey - Teen) (Appendix A, [Graph 24](#) and [Graph 25](#)).
- Hospital patients who received influenza vaccination increased from 87.2% in 2012 to 94.1% in 2015 (CMS Clinical Data Warehouse) (Appendix A, [Graph 26](#)).

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<sup>viii</sup> Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, including states, and special handling of 2015 data, see the HCUP Methods Series Report, *Methods Applying AHRQ Quality Indicators to Healthcare Cost and Utilization Project (HCUP) Data for the 2017 National Healthcare Quality and Disparities Report (QDR)* at <https://www.hcup-us.ahrq.gov/reports/methods/methods.jsp>.

<sup>ix</sup> Tdap = tetanus, diphtheria, and acellular pertussis.

About 7% of all healthy living measures showed worsening performance, including one women's health measure and one children's health measure.

- Hospital admissions for immunization-preventable influenza per 100,000 population age 65 and over, which increased from 77.5 in 2000 to 259.8 in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 27](#)).
- Women ages 21-65 who received a Pap test in the last 3 years, which decreased from 87.5% in 2000 to 81.2% in 2015 (CDC, NCHS, NHIS) (Appendix A, [Graph 28](#)).
- Adolescents ages 12-19 with obesity, which increased from 16.0% in 1999-2002 to 20.5% in 2011-2014 (CDC, NCHS, National Health and Nutrition Examination Survey [NHANES]) (Appendix A, [Graph 29](#)).

### **Trends in Effective Treatment**

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

More than half of Effective Treatment measures were improving (Figure 18), including improvements in cancer care and pneumonia:

- Patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined, which increased from 60.9% in 2005 to 91.2% in 2014 (National Cancer Data Base [NCDB]) (Appendix A, [Graph 30](#)).
- Women under age 70 treated for breast cancer with breast-conserving surgery who received radiation therapy to the breast within 1 year of diagnosis, which increased from 85.3% in 2005 to 92.5% in 2013 (NCDB) (Appendix A, [Graph 31](#)).
- Deaths per 1,000 adult hospital admissions with pneumonia, which declined from 73.2 in 2000 to 17.5 in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 32](#)).

However, several areas show no statistically significant changes overall, including diabetes care and treatment for mental health and substance use overall.

Worsening performance overall in Effective Treatment measures were observed for:

- Hemodialysis patients whose hemoglobin level is less than 10 g/dL, which increased from 1.7% in 2006 to 16.8% in 2015 (University of Michigan Kidney Epidemiology and Cost Center, Dialysis Facility Reports) (Appendix A, [Graph 33](#)).

- Emergency department visits involving opioid-related diagnoses per 100,000 population, which increased from 89.1 in 2005 to 209.0 in 2015 (AHRQ, HCUP, NIS and Nationwide Emergency Department Sample [NEDS], and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 34](#)).<sup>x</sup>
- Hospital inpatient stays involving opioid-related diagnoses per 100,000 population, which increased from 136.8 in 2005 to 251.3 in 2015 (AHRQ, HCUP, SID, and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 35](#)).<sup>xi</sup>
- Suicide deaths among people age 12 and over per 100,000 population, which increased from 10.4 in 2000 to 16.0 in 2015 (CDC, NCHS, National Vital Statistics System [NVSS] - Mortality) (Appendix A, [Graph 36](#)).
- People with current asthma who are now taking preventive medicine daily or almost daily (either oral or inhaler), which decreased from 29.6% in 2003 to 23.0% in 2015 (AHRQ, MEPS) (Appendix A, [Graph 37](#)).

### Trends in Care Coordination

Care coordination is a conscious effort to ensure that all key information needed to make care decisions is available to healthcare consumers and providers. Care coordination is defined as the deliberate organization of patient care activities between two or more participants involved in a person's care to facilitate appropriate delivery of healthcare services (Shojania, et al., 2007).

Coordinating basic patient information among providers is essential so that important information is not ignored, lost, or never communicated. Incomplete or inaccurate information and lack of followup care lead to confusion, higher costs, and misuse of medications, tests, and therapies for all patients, which result in poor outcomes (Carney Moore, et al., 2015).

Half of Care Coordination measures were improving overall (Figure 18), including:

- Potentially avoidable hospital admissions for angina per 100,000 population, adults age 18 and over, which fell from 81.5 in 2000 to 11.8 in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 38](#)).
- Potentially avoidable hospital admissions for pediatric gastroenteritis per 100,000 population, children ages 3 months to 17 years, which fell from 169.4 in 2000 to 50.8 in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 39](#)).

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<sup>x</sup> These statistics are based on a comprehensive set of all-listed (principal and secondary) diagnoses of opioid abuse, dependence, poisoning, and adverse effects. Therefore, the opioid-related hospital admissions and emergency department visits summarized here encompass a broader range of issues than effective care for opioid misuse. However, such measures of utilization do indicate the need for acute care for individuals with opioid-related diagnoses.

<sup>xi</sup> Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9th Revision coding. For more information on the sampling approach, including states, and special handling of 2015 data, see the HCUP Methods Series Report, *Methods Applying AHRQ Quality Indicators to Healthcare Cost and Utilization Project (HCUP) Data for the 2017 National Healthcare Quality and Disparities Report (QDR)*, at <https://www.hcup-us.ahrq.gov/reports/methods/methods.jsp>.

- Adult hospital patients who did not receive good communication about discharge information, which fell from 15.8% in 2009 to 10.5% in 2016 (CMS, Hospital Consumer Assessment of Healthcare Providers and Systems [HCAHPS]) (Appendix A, [Graph 40](#)).

However, nearly one-quarter of Care Coordination measures showed worsening overall, including:

- Emergency department visits with a principal diagnosis related to substance abuse only, per 100,000 population, which increased from 438.0 in 2007 to 713.0 in 2015 (AHRQ, HCUP, NEDS) (Appendix A, [Graph 41](#)).
- Emergency department visits with a principal diagnosis related to co-occurring mental health, alcohol abuse, and substance abuse, per 100,000 population, which increased from 27.0 in 2007 to 43.9 in 2015 (AHRQ, HCUP, NEDS) (Appendix A, [Graph 42](#)).
- Potentially avoidable hospital admissions for short-term complications of diabetes per 100,000 population, adults age 18 and over, which worsened from 50.8 in 2000 to 85.8 in 2015 (AHRQ, HCUP) (Appendix A, [Graph 43](#)).

### **Trends in Affordable Care**

Health insurance is designed to protect individuals from the burden of high healthcare costs. However, even with health insurance, the financial burden of healthcare can be high and is increasing (Banthin & Bernard, 2006).

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

Data presented in this report show that 4 of 5 care affordability measures had no statistically significant changes overall (Figure 18). One measure of care affordability worsened overall:

- People without a usual source of care who indicated a financial or insurance reason for not having a source of care, which increased from 2002 (15.6%) until 2013 (24%) and then decreased through 2015 (14.9%) (AHRQ, MEPS) (Appendix A, [Graph 44](#)).

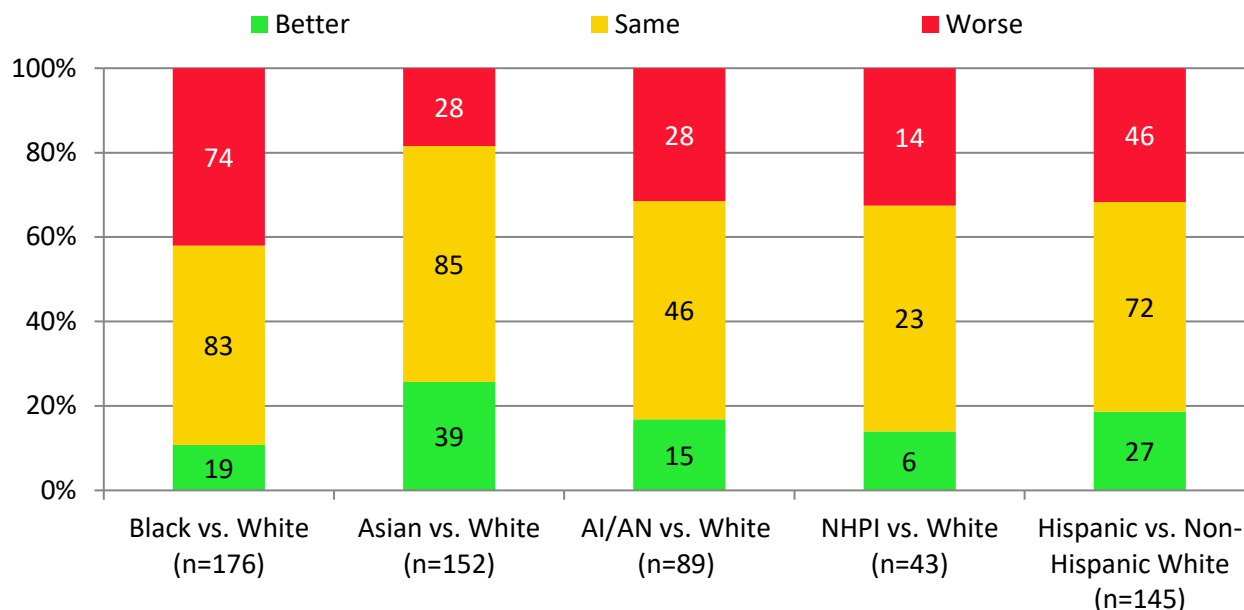
### **Trends in Disparities**

**Although some gaps are getting smaller, disparities remain.**

Measures in this report were analyzed by comparing race/ethnicity, income, and insurance status with their reference groups in order to show disparities that may exist between these groups. Figure 19 shows disparities between racial/ethnic groups and Whites, and Figure 20 shows changes in the gaps between racial/ethnic groups and Whites.

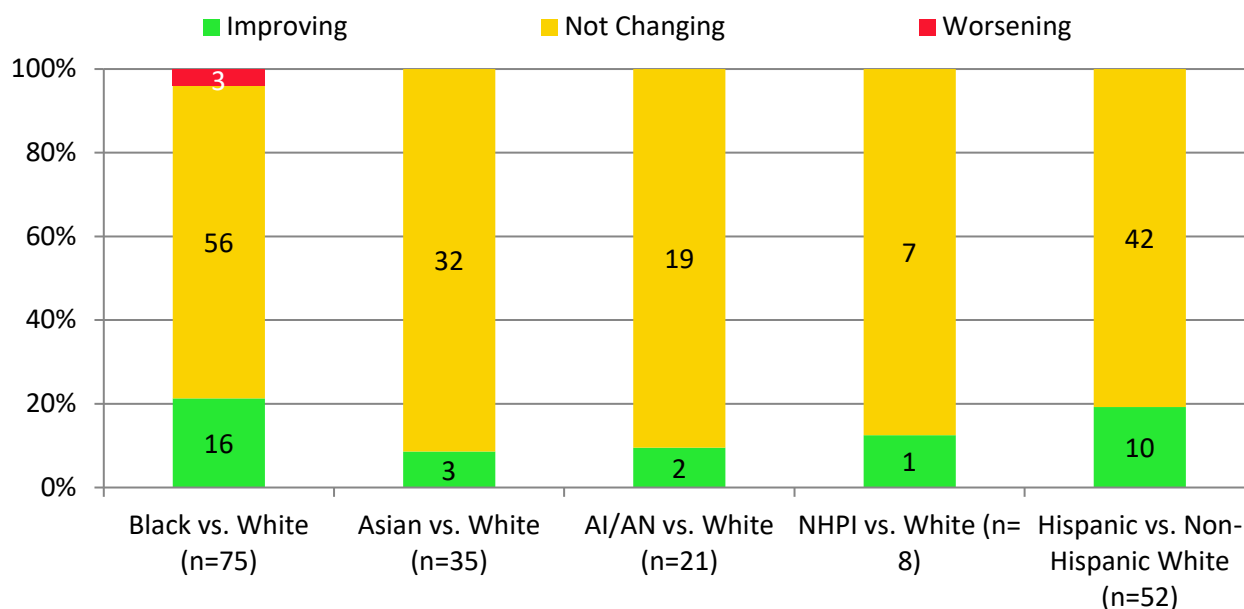


**Figure 19. Number and percentage of quality measures for which members of selected groups experienced better, same, or worse quality of care compared with reference group (White) in 2014-2016**



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

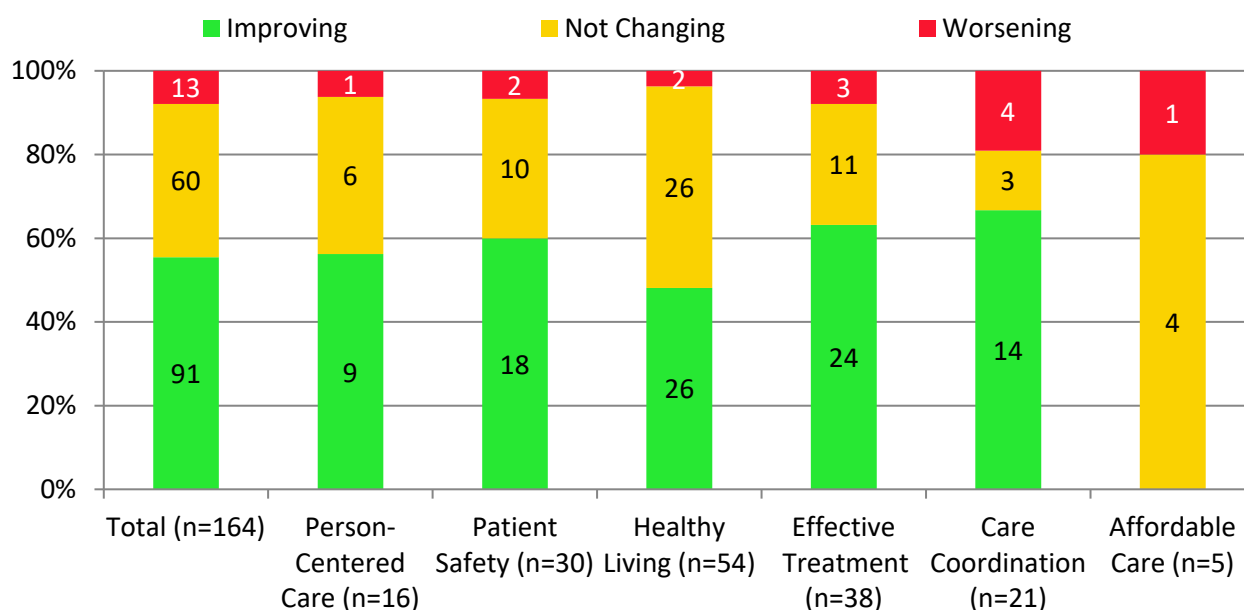
**Figure 20. Number and percentage of quality measures with disparity at baseline for which disparities related to race and ethnicity were improving, not changing, or worsening, 2000 through 2014-2016**



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

## Disparities for Blacks

**Figure 21. Number and percentage of all quality measures that were improving, not changing, or worsening, total for Blacks and by priority area, from 2000 through 2016**



Data for the most recent year show that disparities remain for about 40% of quality measures for Blacks (Figure 19).<sup>xii</sup> The largest disparities for Blacks compared with Whites include the following:

- In 2016, the rate of new HIV cases per 100,000 population age 13 and over was worse for Blacks compared with Whites (52.9 compared with 6.0, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention [NCHHSTP], Division of HIV/AIDS [DHAP], National HIV/AIDS Surveillance System [NHSS]) (Appendix A, [Graph 45](#)).
- In 2015, the rate of HIV infection deaths per 100,000 population was worse for Blacks compared with Whites (7.9 compared with 1.1, CDC, NVSS-Mortality) (Appendix A, [Graph 46](#)).
- In 2015, the rate of adults with potentially avoidable hospital admissions for hypertension per 100,000 population was worse for Blacks than for Whites (170.3 admissions per 100,000 compared with 33.9 admissions per 100,000, AHRQ, HCUP, SID, 2001-2015; and AHRQ Quality Indicators, version 4.4)<sup>xiii</sup> (Appendix A, [Graph 47](#)).

<sup>xii</sup> The following measure is not included in Figure 19 due to unreliable data for Blacks: Live-born infants with low birth weight (less than 2,500 g).

<sup>xiii</sup> Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, including states, and special handling of 2015 data, see the HCUP Methods Series Report, *Methods Applying AHRQ Quality Indicators to Healthcare Cost and Utilization Project (HCUP) Data for the 2017 National Healthcare Quality and Disparities Report (QDR)* at <https://www.hcup-us.ahrq.gov/reports/methods/methods.jsp>.

Trends show about 55% of quality measures improving overall for Blacks (Figure 21). Largest improvements include the following:

- From 2012 to 2015, the percentage of Black hospital patients who received influenza vaccination improved from 84.9% to 93.5% (CMS Clinical Data Warehouse) (Appendix A, [Graph 48](#)).
- From 2008 to 2015, the percentage of Black adolescents ages 16-17 who received 1 or more doses of the Tdap vaccine improved from 26.5% to 84.1% (CDC, NCIRD and NCHS, National Immunization Survey - Teen) (Appendix A, [Graph 49](#)).

The gap between Blacks and Whites remained the same for 75% of measures (Figure 20). Three measures showed an increasing gap between Blacks and Whites:

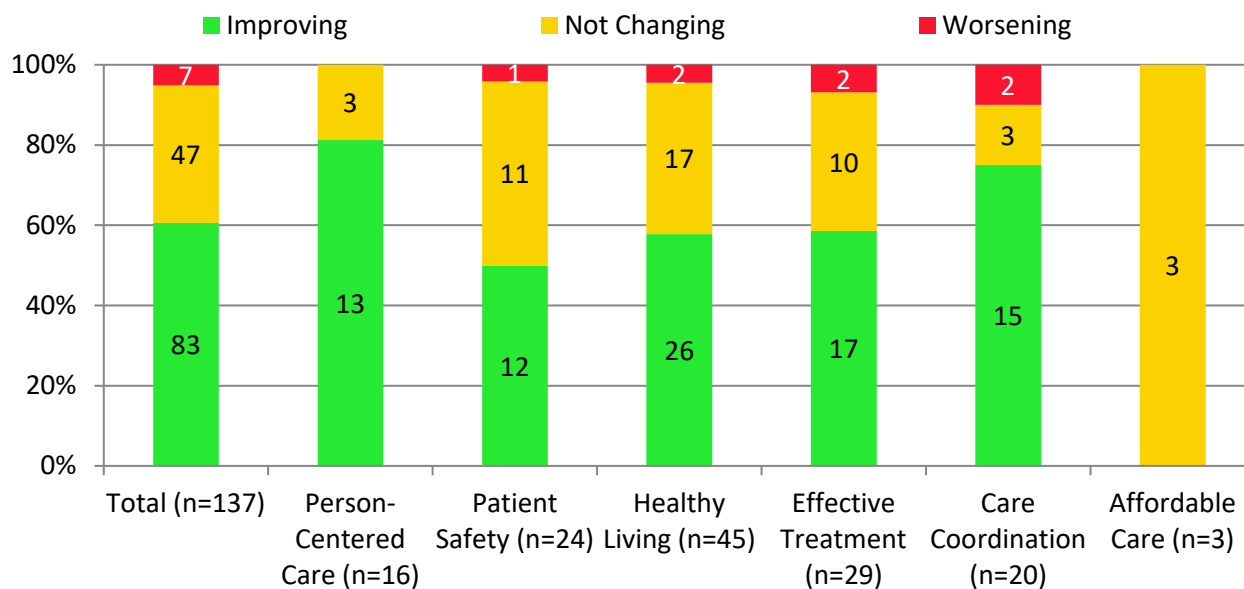
- Children ages 2-19 who visited the emergency department for asthma. In 2006-2008, the rate was 220.8 and in 2012-2014, the rate was 252.5 for Blacks. In 2006-2008, the rate was 60.0 and in 2012-2014, the rate was 76.0 for Whites (CDC, NCHS, National Hospital Ambulatory Medical Care Survey) (Appendix A, [Graph 50](#)).
- In 2001, Blacks had a rate of 156.7 per 100,000 population of potentially avoidable hospital admissions with hypertension compared with Whites, who had a rate of 33.2 per 100,000 population. In 2015, this disparity was increasing as Blacks had a rate of 170.3 and Whites had a rate of 33.9 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators, version 4.4)<sup>xiv</sup> (Appendix A, [Graph 51](#)).
- In 2009, 24.2% of Black infants received exclusive breastfeeding through 3 months compared with 39.6% of White infants. In 2014, this disparity had increased. Fewer Black infants (28.9%) received breastfeeding exclusively through 3 months compared with White infants (51.6%) (CDC, NCIRD and NCHS, National Immunization Survey) (Appendix A, [Graph 52](#)).

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<sup>xiv</sup> Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, including states, and special handling of 2015 data, see the HCUP Methods Series Report, *Methods Applying AHRQ Quality Indicators to Healthcare Cost and Utilization Project (HCUP) Data for the 2016 National Healthcare Quality and Disparities Report (QDR)* at <https://www.hcup-us.ahrq.gov/reports/methods/methods.jsp>.

## Disparities for Asians

**Figure 22. Number and percentage of all quality measures that were improving, not changing, or worsening, total for Asians and by priority area, from 2000 through 2016**



Data for the most recent year show that disparities remain for about 20% of quality measures for Asians (Figure 19).<sup>xv</sup> Largest disparities for Asians compared with Whites were in patient safety and person-centered care:

- In 2015, the percentage of hospital patients with an anticoagulant-related adverse drug event with heparin was higher for Asians than for Whites (11.4% compared with 2.7%, AHRQ and CMS, MPSMS) (Appendix A, [Graph 53](#)).
- In 2015, the percentage of adults with limited English proficiency and a usual source of care (USC) whose USC had language assistance was lower for Asians than for Whites (78.3% compared with 92.3%, AHRQ, MEPS) (Appendix A, [Graph 54](#)).

Trends show 60% of quality measures improving overall for Asians (Figure 22). Largest improvements over time for Asians were observed in:

- Asian hospital patients who received influenza vaccination, which improved from 83.3% to 95.1% from 2012 to 2015 (CMS Clinical Data Warehouse) (Appendix A, [Graph 55](#)).
- Asian hospital patients who received pneumococcal immunization, which improved from 85.7% to 94.9% from 2012 to 2015 (CMS Clinical Data Warehouse) (Appendix A, [Graph 56](#)).
- Asian adolescents ages 16-17 who received 1 or more doses of the Tdap vaccine from 2008 to 2015, which improved from 38.4% to 87.5% (CDC, NCIRD and NCHS, National Immunization Survey - Teen) (Appendix A, [Graph 57](#)).

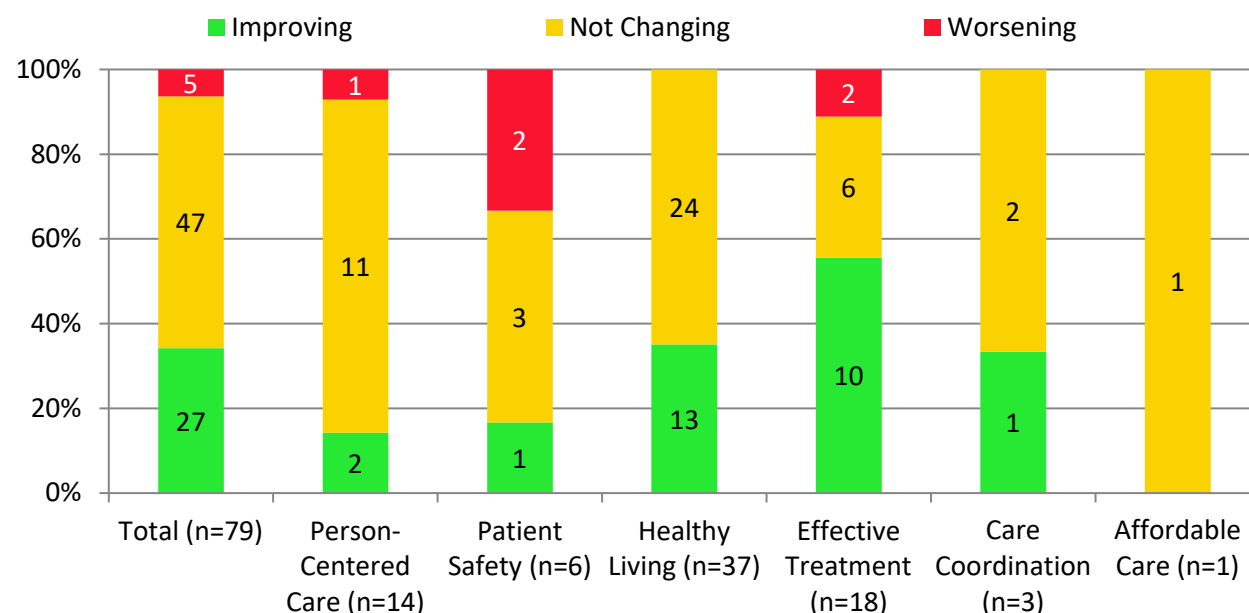
<sup>xv</sup> The following measure is not included in Figure 19 due to unreliable data for Asians: HIV infection deaths per 100,000 population.

Disparities persist for Asians, with the gap between Asians and Whites remaining the same for about 90% of measures (Figure 20). Three quality measures showed a decreasing gap between Asians and Whites over time:

- From 2012 to 2015, the gap decreased between Asian and White hospital patients who received pneumococcal immunization. In 2012, 85.7% of Asians and 90% of Whites received this immunization. In 2015, 94.9% of Asians and 88.4% of Whites were immunized (CMS, Clinical Data Warehouse) (Appendix A, [Graph 58](#)).
- In 2005, Asians and Whites had a rate of 165.7 and 136.7, respectively, for deaths per 1,000 elective-surgery admissions having developed specified complications of care during hospitalization.<sup>xvi</sup> In 2015, the gap between these populations decreased, and the mortality rates were 122.4 per 1,000 and 108.1 per 1,000 for Asians and Whites, respectively (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators, version 4.4<sup>xvii</sup> (Appendix A, [Graph 59](#)).
- In 2010, 72.2% of Asian and 85.9% of White people living with HIV knew their serostatus. In 2014, this gap decreased, with 80.4% of Asian people and 87.7% of White people living with HIV knowing their serostatus (NCHHSTP, DHAP, NHSS) (Appendix A, [Graph 60](#)).

### Disparities for American Indians/Alaska Natives

**Figure 23. Number and percentage of all quality measures that were improving, not changing, or worsening, total for American Indians and Alaska Natives and by priority area, from 2000 through 2016**



<sup>xvi</sup> Ages 18-89 or obstetric admissions.

<sup>xvii</sup> Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, including states, and special handling of 2015 data, see the HCUP Methods Series Report, *Methods Applying AHRQ Quality Indicators to Healthcare Cost and Utilization Project (HCUP) Data for the 2016 National Healthcare Quality and Disparities Report (QDR)* at <https://www.hcup-us.ahrq.gov/reports/methods/methods.jsp>.

Data for the most recent year show that disparities remain for about 30% of quality measures for AI/ANs (Figure 19). Largest disparities between AI/ANs and Whites include:

- Hospital patients who received influenza vaccination (85.2% compared with 94.7%, CMS Clinical Data Warehouse) (Appendix A, [Graph 61](#)).
- Adults who had a doctor's office or clinic visit in the last 12 months who rated their healthcare as poor<sup>xviii</sup> (26.0% compared with 10.3%, AHRQ, MEPS) (Appendix A, [Graph 62](#)).
- Infant mortality<sup>xix</sup> per 1,000 live births in 2014 (3.9 compared with 1.8, CDC, NCHS, NVSS - Linked Birth and Infant Death Data) (Appendix A, [Graph 63](#)).

Trends show almost 35% of quality measures improving for AI/ANs overall (Figure 23). Largest improvements over time for AI/ANs were observed in:

- Adolescents ages 16-17 who received 1 or more doses of the Tdap vaccine, which improved from 43.7% to 90.6% from 2008 to 2014<sup>xx</sup> (CDC, NCIRD and NCHS, National Immunization Survey - Teen) (Appendix A, [Graph 64](#)).
- Adolescents ages 13-15 who received 1 or more doses of meningococcal conjugate vaccine, which improved from 51.8% to 88.3% from 2008 to 2015 (CDC, NCIRD and NCHS, National Immunization Survey - Teen) (Appendix A, [Graph 65](#)).

Disparities persist for AI/ANs, with the gap between AI/ANs and Whites remaining the same for about 90% of measures (Figure 20). Two quality measures showed the gap between AI/ANs and Whites decreasing over time:

- From 2008 to 2015, the disparities gap between AI/ANs and Whites decreased for the adjusted incident rate of end stage renal disease due to diabetes. For AI/ANs, the rate decreased (from 526 per million population to 275.8 per million) and for Whites did not statistically change (from 133.3 per million to 139.8 per million) (National Institutes of Health [NIH], National Institute on Diabetes and Digestive and Kidney Diseases [NIDDK], U.S. Renal Data System [RDS]) (Appendix A, [Graph 66](#)).
- From 2002 to 2015, the disparities gap between AI/ANs and Whites decreased for the percentage of children ages 2-17 for whom a health provider gave advice within the past 2 years about healthy eating. For AI/ANs the rate increased (from 28.7% to 58.2%) and for Whites the rates also increased (46.8% to 64.7%) (AHRQ, MEPS) (Appendix A, [Graph 67](#)).

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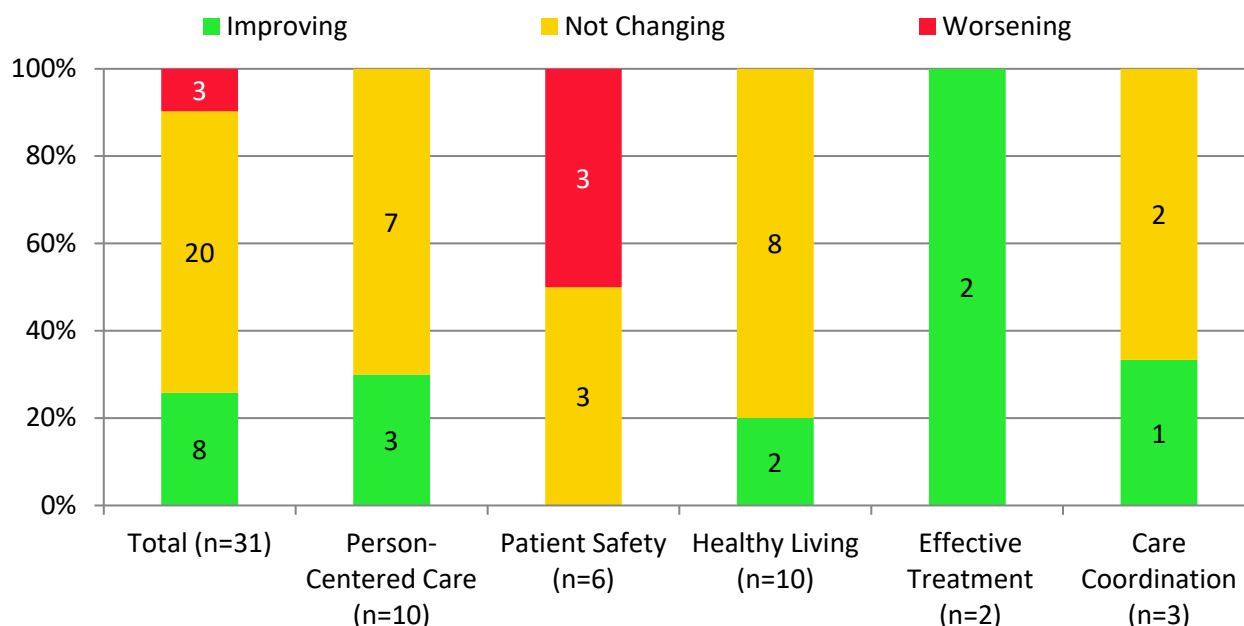
<sup>xviii</sup> Rating of healthcare 0-6 on a scale from 0 to 10 (best grade) by adults who had a doctor's office or clinic visit in the last 12 months.

<sup>xix</sup> Infant mortality per 1,000 live births, birth weight more than 2,499 grams.

<sup>xx</sup> Data do not meet the criteria for statistical reliability, data quality, or confidentiality for AI/AN in 2015.

## Disparities for Native Hawaiians/Pacific Islanders

**Figure 24. Number and percentage of all quality measures that were improving, not changing, or worsening, total for NHPs and by priority area, from 2001 through 2016**



**Note:** Measures of Affordable Care were not available or had statistically unreliable data for NHPs.

Data for the most recent year show that disparities remain for nearly one-third of quality measures for Native Hawaiians/Pacific Islanders (NHPs) (Figure 19). Largest disparities for NHPs compared with Whites include the following:

- In 2014, the percentage of adults who received a blood pressure measurement in the last 2 years and could state whether their blood pressure was normal or high was worse for NHPs than for Whites (84.2% compared with 91.9%, CDC, NCHS, NHIS) (Appendix A, [Graph 68](#)).
- In 2016, the percentage of adults who reported that home health providers always treated them with courtesy and respect in the last 2 months was worse for NHPs than for Whites (88.7% compared with 94.2%, CMS, HHCAHPS) (Appendix A, [Graph 69](#)).

Trends show about 25% of quality measures improving over time for NHPs (Figure 24). Largest improvements include:

- From 2008 to 2011, the percentage of NHP adolescents ages 16-17 who received 1 or more doses of meningococcal conjugate vaccine, which improved from 29.5% to 90.7% (CDC, NCIRD and NCHS, National Immunization Survey - Teen) (Appendix A, [Graph 70](#)).
- From 2008 to 2013, the percentage of NHP adolescents ages 16-17 who received 1 or more doses of the Tdap vaccine, which improved from 41.9% to 92.4% (CDC, NCIRD and NCHS, National Immunization Survey - Teen)<sup>xxi</sup> (Appendix A, [Graph 71](#)).

<sup>xxi</sup> Data statistically unreliable for NHPs for 2012-2015.

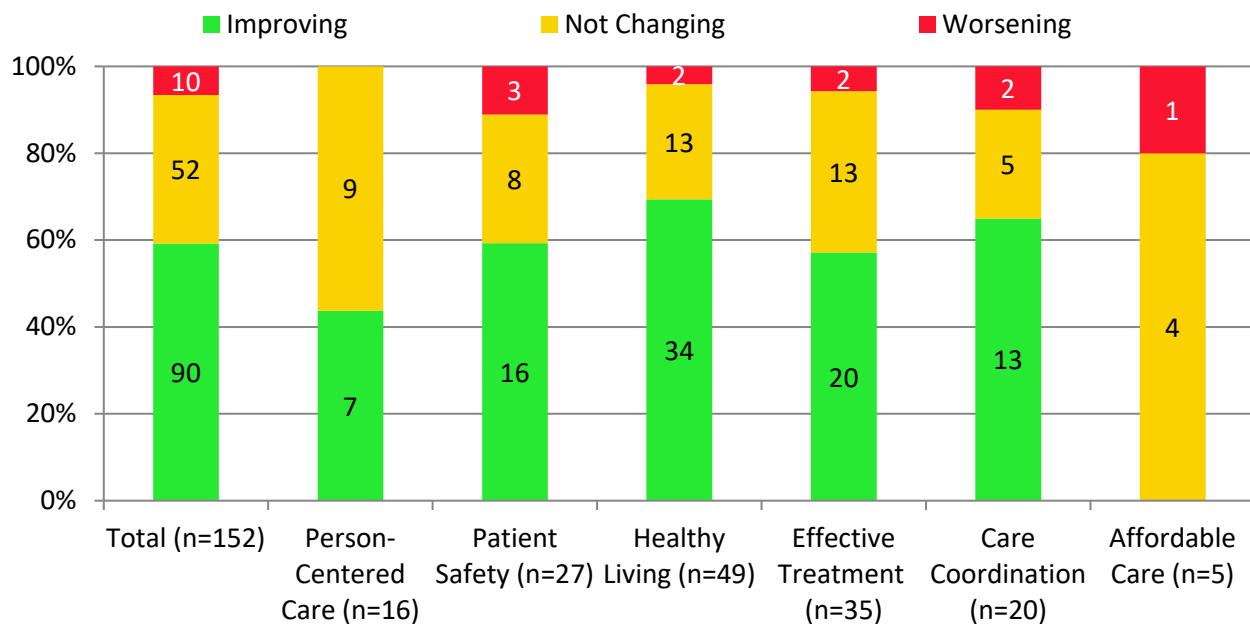
- From 2010 to 2014, the percentage of NHPIs living with HIV who knew their serostatus, which improved from 75.2% to 82.8% (NCHHSTP, DHAP, NHSS) (Appendix A, [Graph 72](#)).

The gap between NHPIs and Whites remained the same for all but one quality measure (Figure 20)<sup>xxii</sup>:

- In 2008, 9.5% of NHPI and 21.3% of White adolescent females ages 16-17 received 3 or more doses of human papillomavirus vaccine. In 2011, the gap improved between NHPIs and Whites (86.7% compared with 42.6%) (CDC, NCIRD and NCHS, National Immunization Survey - Teen) (Appendix A, [Graph 73](#)).

### Disparities for Hispanics

**Figure 25. Number and percentage of all quality measures that were improving, not changing, or worsening, total for Hispanics and by priority area, from 2000 through 2016**



Data for the most recent year show that disparities remain for nearly one-third of quality measures for Hispanics (Figure 19). Largest disparities between Hispanics and non-Hispanic Whites include:

- Children ages 2-5 with obesity in 2011-2014 (15.6% compared with 5.2%, CDC, NCHS, NHANES) (Appendix A, [Graph 74](#)).
- New HIV cases per 100,000 population age 13 and over (23.1 compared with 6.2) (CDC, NCHHSTP, DHAP, NHSS) (Appendix A, [Graph 75](#)).

<sup>xxii</sup> Only quality measures with statistically significant disparities at baseline data year are included. Eight quality measures met this criterion for this analysis of change in disparities over time for NHPIs.



Trends show about 60% of quality measures improving for Hispanics overall (Figure 25). Largest improvements for Hispanics over time were observed in:

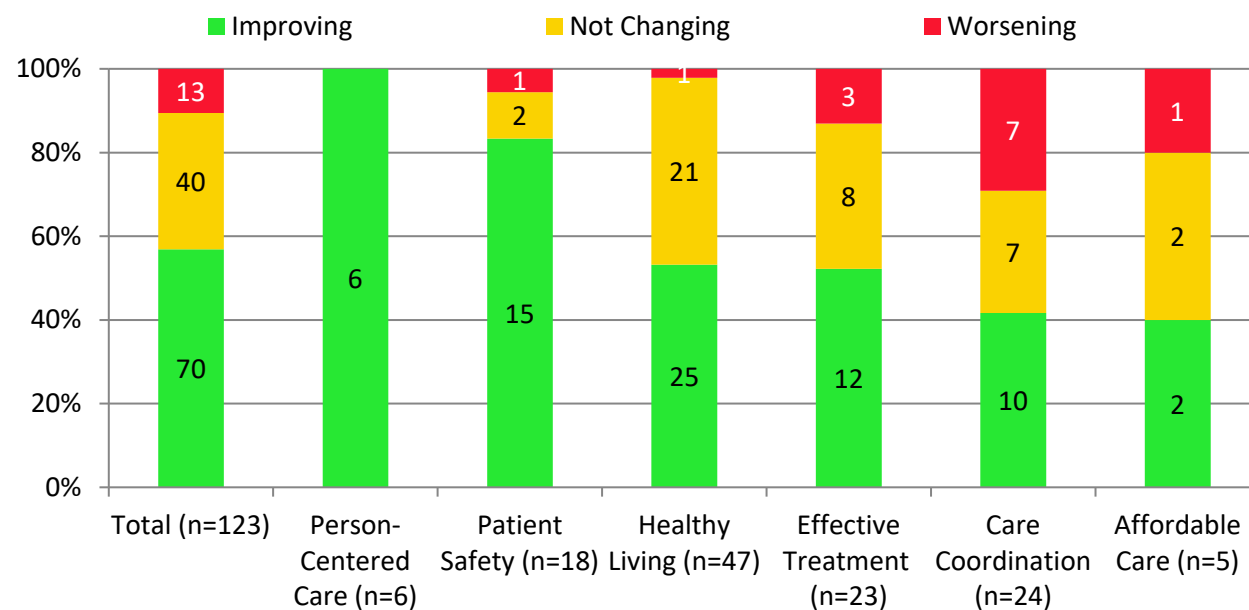
- Adolescents ages 16-17 who received 1 or more doses of the Tdap vaccine, which improved from 29.4% to 81.4% from 2008 to 2015 (CDC, NCIRD and NCHS, National Immunization Survey - Teen) (Appendix A, [Graph 76](#)).
- Adolescents ages 13-15 who received 1 or more doses of the Tdap vaccine, which improved from 48.5% to 87.6% from 2008 to 2015 (CDC, NCIRD and NCHS, National Immunization Survey - Teen) (Appendix A, [Graph 77](#)).

Disparities persist for Hispanics, with the gap between Hispanics and non-Hispanic Whites remaining the same for about 80% of quality measures (Figure 20). The gap is getting smaller over time for about 20% of quality measures, including the following:

- From 2001 to 2015, the gap between Hispanics and non-Hispanic Whites decreased for the rate of potentially avoidable hospital admissions for uncontrolled diabetes. The rate decreased both for Hispanics (from 46.0 per 100,000 to 17.6 per 100,000) and for non-Hispanic Whites (from 17.6 per 100,000 to 8.9 per 100,000). (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 78](#)).
- From 2001 to 2015, the gap between Hispanics and non-Hispanic Whites decreased for the rate of potentially avoidable hospital admissions for short-term complications of diabetes. However, the rate actually increased for both Hispanics (from 51.8 per 100,000 to 64.6 per 100,000) and non-Hispanic Whites (from 42.1 per 100,000 to 75.4 per 100,000) (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 79](#)).
- In 2001, the adjusted incident rates of end stage renal disease (ESRD) due to diabetes per million population for non-Hispanic Whites was 114.5 and for Hispanics was 410.0 per million population. In 2015, the rate for non-Hispanic Whites was 116.8 and for Hispanics, 302.6 per million population (NIH, NIDDK, USRDS) (Appendix A, [Graph 80](#)).
- In 2001, the rate of potentially avoidable hospital admissions for long-term complications of diabetes per 100,000 population was worse for Hispanic adults (206.6) compared with non-Hispanic White adults (96.7). In 2015, this disparity was smaller. Hispanics had a rate of 165.9 per 100,000 population and non-Hispanic Whites had a rate of 88.8 per 100,000 population (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 81](#)).

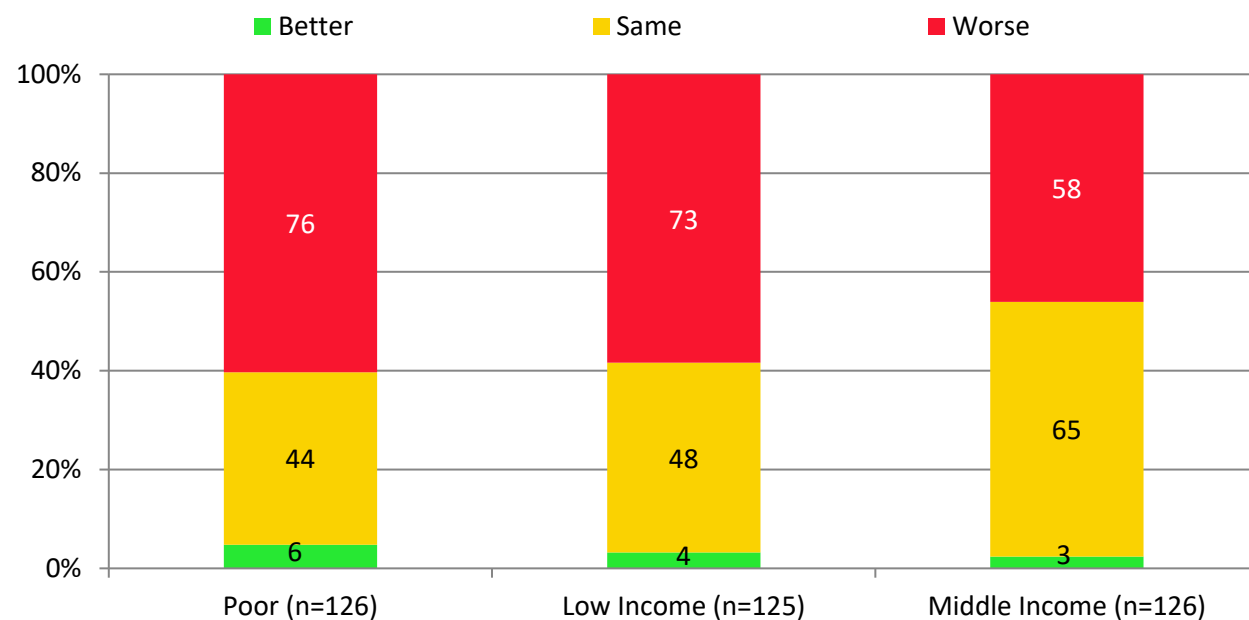
## Disparities by Income and Insurance

**Figure 26. Number and percentage of all quality measures that were improving, not changing, or worsening, total for poor people and by priority area, from 2000 through 2015**



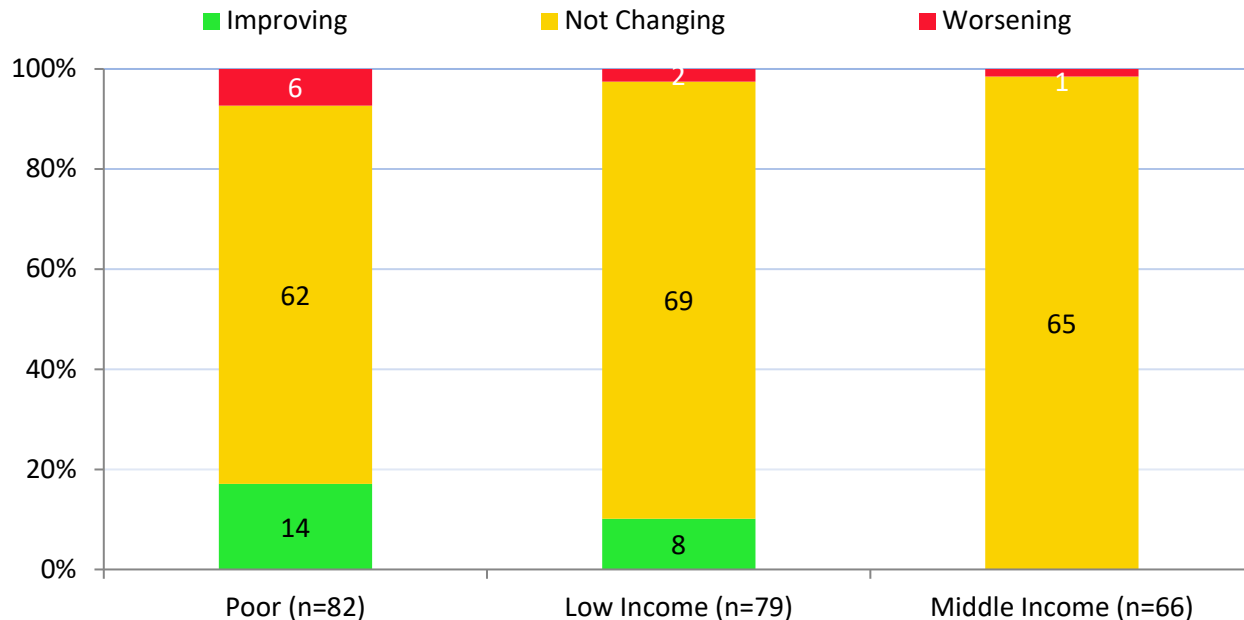
**Key:** n = number of measures.

**Figure 27. Number and percentage of quality measures for which income groups experienced better, same, or worse quality of care compared with reference group (high income), 2014-2015**



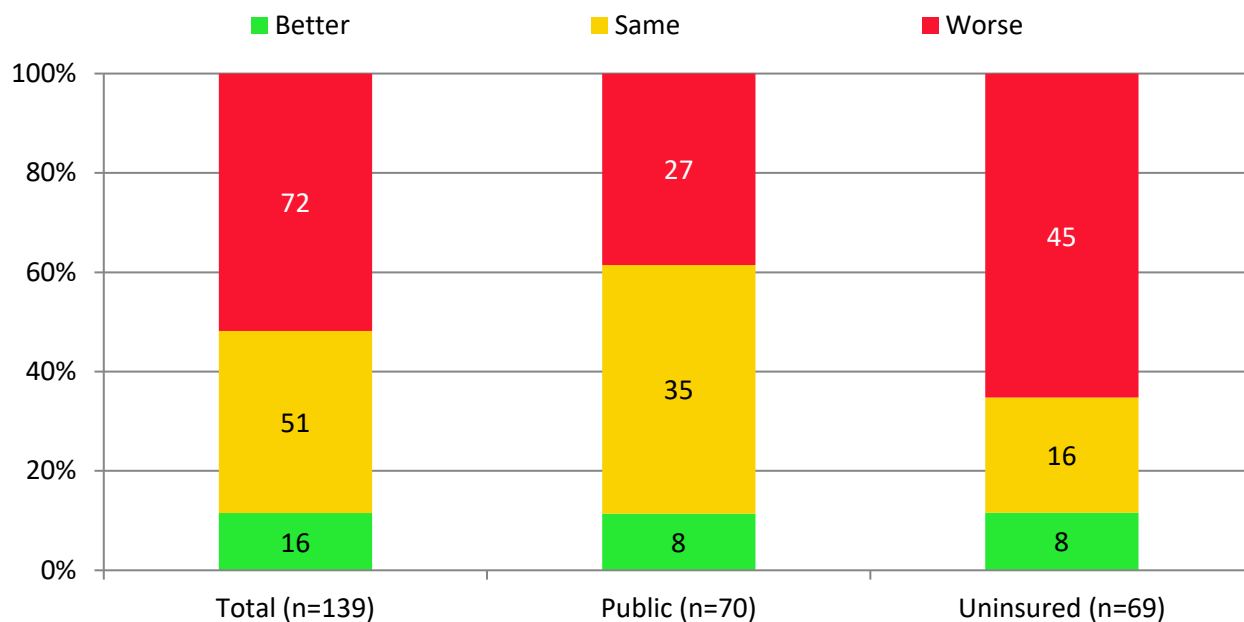
**Key:** n = number of measures.

**Figure 28. Number and percentage of quality measures with disparity at baseline for which disparities related to income were improving, not changing, or worsening, 2000 through 2015**



**Key:** n = number of measures.

**Figure 29. Number and percentage of quality measures for which insurance groups experienced better, same, or worse quality of care compared with reference group (privately insured), 2014-2015**



**Key:** n = number of measures.

- There were significant disparities for poor and uninsured populations in all priority areas. Figures 26-29 show that overall, while some disparities were getting smaller from 2000<sup>xxiii</sup> through 2014-2015, disparities persist, especially among people in poor and low-income households and uninsured people.

### **Variation in care persisted across the urban-rural continuum in 2014-2016.**

This report uses the 2006 National Center for Health Statistics (NCHS) classification for analyzing healthcare quality and disparities by geographic location (Ingram & Franco, 2012). The NCHS scheme includes six urbanization categories, including:

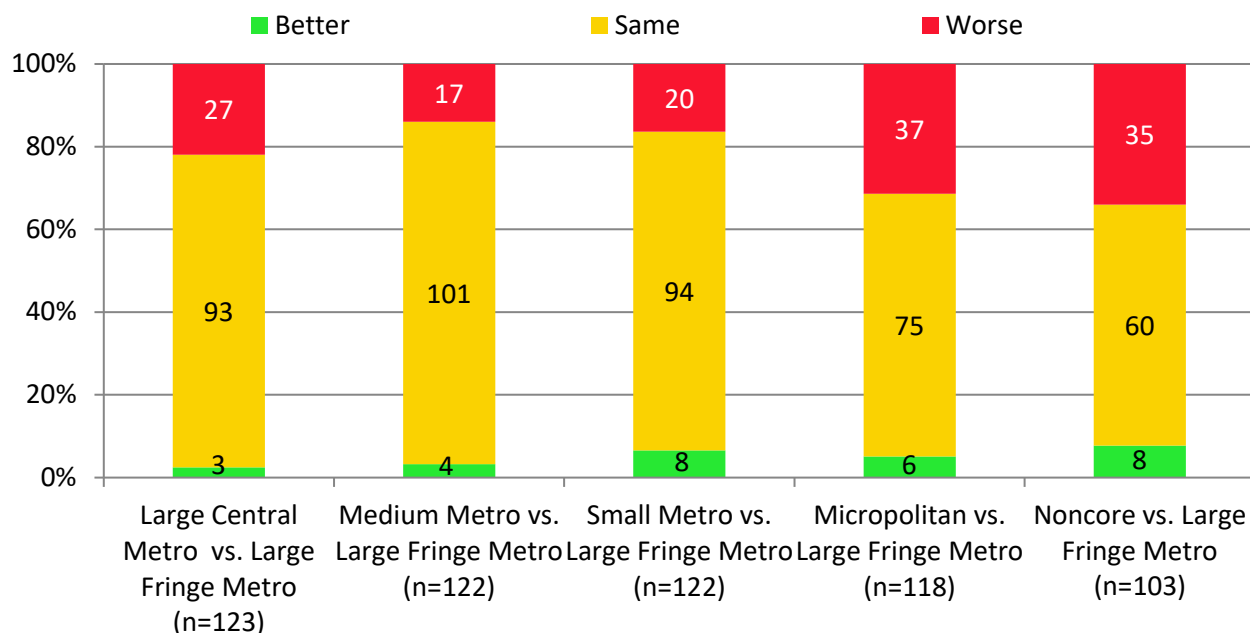
- Four metropolitan county designations:
  - Large Central Metropolitan: Large central metropolitan counties in a metropolitan statistical area (MSA) of 1 million or more population:
    1. That contain the entire population of the largest principal city of the MSA, or
    2. Whose entire population resides in the largest principal city of the MSA, or
    3. That contain at least 250,000 of the population of any principal city in the MSA.
  - Large Fringe Metropolitan: Counties in an MSA of 1 million or more population that do not qualify as large central.<sup>xxiv</sup>
  - Medium Metropolitan: Counties in an MSA of 250,000 to 999,999 population.
  - Small Metropolitan: Counties in an MSA of 50,000 to 249,999 population.
- Two nonmetropolitan county designations:
  - Micropolitan: Counties in a micropolitan statistical area.
  - Noncore: Counties not in a micropolitan statistical area.

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<sup>xxiii</sup> Most of the data collection for this set of measures began in 2000. Two CDC/NHIS measures have data from 1998: Adults who received a blood cholesterol measurement in the last 5 years and Adults who received a blood pressure measurement in the last 2 years and can state whether their blood pressure was normal or high.

<sup>xxiv</sup> For comparisons across geographic areas, residents of 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.

**Figure 30. Number and percentage of quality and access measures for which members of selected groups experienced better, same, or worse quality of care compared with reference group (large fringe metro) in 2014-2016, by geographic location**



**Key:** n = number of measures.

**Note:** The measures represented in this chart are available in Appendix B. Definitions of geographic locations are available at [https://www.cdc.gov/nchs/data\\_access/urban\\_rural.htm](https://www.cdc.gov/nchs/data_access/urban_rural.htm) and in [Appendix D](#).

### Large Central Metropolitan Areas

Areas categorized as large central metropolitan areas include areas such as Denver County, Colorado; Washington, DC; and Cook County, Illinois. Performance for most quality measures was not significantly different from that in large fringe metropolitan areas (reference group) (Figure 30). Some improvements over time in healthcare quality have been observed in large central metropolitan areas in patient safety and care coordination:

- Hospital admissions with central venous catheter-related bloodstream infection declined from a rate of 2.26 per 1,000 discharges in 2008 to 0.71 per 1,000 discharges in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015 NIS; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 82](#)).
- Potentially avoidable hospital admissions for angina per 100,000 population declined from 79.4 in 2000 to 12.9 in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015 NIS; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 83](#)).
- Hospital admissions for pediatric gastroenteritis per 100,000 population, children ages 3 months to 17 years, improved from 164.3 in 2000 to 52.8 in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015 NIS; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 84](#)).

However, some disparities persist in the areas of care coordination and access to care:

- In 2015, the rate of potentially avoidable hospital admissions for asthma was worse for children ages 2-17 in large central metropolitan areas (125.9 per 100,000 population) compared with children ages 2-17 in large fringe metropolitan areas (73.0 per 100,000 population) (AHRQ, HCUP) (Appendix A, [Graph 85](#)).
- In 2015, the percentage of 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 services was worse for residents in large central metropolitan areas (8.8%) compared with residents in large fringe metropolitan areas (5.6%) (AHRQ, MEPS) (Appendix A, [Graph 86](#)).

### Medium Metropolitan Areas

Areas categorized as medium metropolitan areas include Scott County, Kentucky; York County, Maine; and Douglas County, Nebraska. Performance for most quality measures was not significantly different from that in large fringe metropolitan areas. Some improvements over time in healthcare quality have occurred in medium metropolitan areas in patient safety and care coordination, including:

- Hospital admissions with central venous catheter-related bloodstream infection, which declined from a rate of 1.9 per 1,000 discharges in 2008 to 0.69 per 1,000 discharges in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015 NIS; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 87](#)).
- Potentially avoidable hospital admissions for angina per 100,000 population, which declined from 51.4 per 100,000 in 2000 to 9.7 per 100,000 in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015 NIS; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 88](#)).
- Hospital admissions for pediatric gastroenteritis per 100,000 population, children ages 3 months to 17 years, which improved from 144.4 in 2000 to 45.2 in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015 NIS; and AHRQ Quality Indicators, version 4.4) (Appendix A, [Graph 89](#)).

However, some disparities persist in obesity prevention, patient safety, and access to care:

- In 2015, the percentage of children who had their height and weight measured by a health provider within the past 2 years was worse for children in medium metropolitan areas (92.8%) compared with children in large fringe metropolitan areas (95.4%) (AHRQ, MEPS) (Appendix A, [Graph 90](#)).
- In 2015, the rate of accidental puncture or laceration during procedure for children was worse in medium metropolitan areas (0.64 per 1,000 medical and surgical admissions) than in large fringe metropolitan areas (0.41 per 1,000 medical and surgical admissions) (AHRQ, HCUP, SID, and AHRQ Quality Indicators version 4.4) (Appendix A, [Graph 91](#)).
- In 2015, the percentage of people under 65 with any private insurance was lower for residents of medium metropolitan areas (65%) compared with residents of large fringe metropolitan areas (73.7%) (CDC, NCHS, NHIS) (Appendix A, [Graph 92](#)).

## Small Metropolitan Areas

Areas categorized as small metropolitan areas include Allen County, Ohio; Wayne County, North Carolina; and Carson City County, Nevada. Performance for most quality measures was not significantly different from that in large fringe metropolitan areas. Some improvements over time in small metropolitan areas include measures in effective care for cancer, care coordination, and patient safety:

- The percentage of patients with colon cancer who received surgical resection of colon cancer improved from 60.2% in 2005 to 90.5% in 2014 (National Cancer Database [NCDB]) (Appendix A, [Graph 93](#)).
- The rate of potentially avoidable hospital admissions for angina for adults improved from 60.7 per 100,000 population in 2000 to 11.5 per 100,000 population in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators version 4.4) (Appendix A, [Graph 94](#)).
- The rate of hospital admissions with central venous catheter-related bloodstream infection declined from 1.53 per 1,000 discharges in 2008 to 0.57 per 1,000 discharges in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators version 4.4) (Appendix A, [Graph 95](#)).

However, some disparities have persisted in patient safety, healthy living, and access to care.

- In 2015, deaths per 1,000 hospital admissions with expected low mortality was worse for residents of small metropolitan areas (0.45) compared with residents of large fringe metropolitan areas (0.25) (AHRQ, HCUP) (Appendix A, [Graph 96](#)).
- In 2014, infant mortality per 1,000 live births where birth weight was more than 2,499 grams was higher for small metropolitan areas (2.4) compared with large fringe metropolitan areas (1.7) (CDC, NVSS-Linked Birth and Infant Death Data) (Appendix A, [Graph 97](#)).
- In 2016, the percentage of people under 65 with any private insurance was lower for residents of small metropolitan areas (61.2%) compared with residents of large fringe metropolitan areas (72.9%) (CDC, NHIS) (Appendix A, [Graph 98](#)).

## Micropolitan

Areas categorized as micropolitan areas include Love County, Oklahoma; Cherokee County, South Carolina; and Harrison County, West Virginia. Performance for most quality measures was not significantly different from that in large fringe metropolitan areas. Some improvements over time in micropolitan areas include measures in effective care for cancer, care coordination, and patient safety:

- Patients with colon cancer who received surgical resection of colon cancer improved from 53.8% in 2005 to 89.9% in 2014 (NCDB) (Appendix A, [Graph 99](#)).
- Potentially avoidable hospital admissions for angina for adults improved from 113.1 per 100,000 population in 2000 to 14.1 per 100,000 population in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators version 4.4) (Appendix A, [Graph 100](#)).

- Hospital admissions with central venous catheter-related bloodstream infection declined from 1.37 per 100,000 population in 2008 to 0.57 per 100,000 population in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators version 4.4) (Appendix A, [Graph 101](#)).

However, some disparities persist in care coordination, patient safety, and access to care:

- In 2015, the rate of emergency department visits with a principal diagnosis related to dental conditions was worse for residents of micropolitan and noncore areas combined (496.7 per 100,000 population) compared with residents of large fringe metropolitan areas (238.2 per 100,000 population) (AHRQ, HCUP, NEDS) (Appendix A, [Graph 102](#)).
- In 2015, the rate of accidental puncture or laceration during procedure per 1,000 medical and surgical admissions for children was worse in micropolitan areas (0.74) compared with large fringe metropolitan areas (0.41) (AHRQ, HCUP, SID; and AHRQ Quality Indicators version 4.4) (Appendix A, [Graph 103](#)).
- In 2016, the percentage of people under age 65 with any private health insurance was worse in micropolitan areas (58.0%) compared with large fringe metropolitan areas (72.9%) (CDC, NCHS, NHIS) (Appendix A, [Graph 104](#)).

## Noncore

Areas categorized as noncore areas include Wallowa, Oregon; Bedford, Pennsylvania; and Crane, Texas. Performance for most quality measures was not significantly different from that in large fringe metropolitan areas. Some improvements over time in noncore areas include measures in effective care for cancer, care coordination, and patient safety:

- Patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined improved from 57.9% in 2005 to 89.9% in 2014 (NCDB) (Appendix A, [Graph 105](#)).
- Potentially avoidable hospital admissions for angina for adults improved from 140.3 per 100,000 population in 2000 to 13.3 per 100,000 population in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators version 4.4) (Appendix A, [Graph 106](#)).
- Hospital admissions with central venous catheter-related bloodstream infection declined from 1.21 per 1,000 discharges in 2008 to 0.54 per 1,000 discharges in 2015 (AHRQ, HCUP, NIS, 2000-2011; SID, 2012-2015; and AHRQ Quality Indicators version 4.4) (Appendix A, [Graph 107](#)).

However, some disparities persist in care coordination, infant mortality, and person-centered care:

- In 2015, the rate of potentially avoidable hospital admissions for bacterial pneumonia per 100,000 population for adults in noncore areas (460.4) was worse than for adults in large fringe metropolitan areas (233.4) (AHRQ, HCUP) (Appendix A, [Graph 108](#)).
- In 2014, the infant mortality rate per 1,000 live births was higher for noncore areas (2.9) compared with large fringe metropolitan areas (1.7) (CDC, NVSS - Linked Birth and Infant Death Data) (Appendix A, [Graph 109](#)).
- In 2015, the percentage of adults who reported low ratings for their doctor's office or clinic was worse in noncore areas (17.1%) than in large fringe metropolitan areas (10.1%) (AHRQ, MEPS) (Appendix A, [Graph 110](#)).



## LOOKING FORWARD

The *National Healthcare Quality and Disparities Report* (QDR) continues to track the nation's performance on healthcare access, quality, and disparities. The QDR data demonstrate significant progress in some areas and identify other areas that merit more attention where wide variations persist. The number of measures in each priority area varies, and some measures carry more significance than others as they affect more people or have more significant consequences. The summary charts (Figures 11-12, 18-30) are a way to quantify and illustrate progress toward achieving accessible, high-quality, and affordable care at the national level using available nationally representative data.

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

U.S. Department of Health and Human Services (HHS) agencies are working on research and conducting programs in many of the priority areas, most notably opioid misuse, patient safety, effective treatment, and health disparities.

**Opioid Misuse.** In 2016, nearly 116 people died everyday from opioid-related drug overdose (HHS, 2018) and 11.5 million people age 12 and over misused prescription pain relievers in the past year (SAMHSA, 2017). Drug overdose deaths in the United States continue to increase. The [5-point strategy of HHS to combat the opioid crisis](#) is:

1. Improving access to treatment and recovery services;
2. Promoting use of overdose-reversing drugs;
3. Strengthening our understanding of the epidemic through better public health surveillance;
4. Providing support for cutting-edge research on pain and addiction; and
5. Advancing better practices for pain management.

The [National Pain Strategy](#) (NPS) is the federal government's first coordinated plan for reducing the burden of chronic pain that affects millions of Americans, and a roadmap toward achieving a system of care in which all people receive appropriate, high-quality and evidence-based care for pain. Data from the QDR can inform the NPS to address the opioid crisis.

**Patient Safety.** The [AHRQ National Scorecard on Hospital-Acquired Conditions](#) estimates that 350,000 hospital-acquired conditions were avoided, and the rate was reduced by 8% from 2014 to 2016. Federal experts note that the gains in safety among hospital patients echoed earlier successes, including 2.1 million hospital-acquired conditions avoided between 2010 and 2014.

Future improvements in patient safety are expected as ambulatory settings focus on improving patient safety. AHRQ's new [Community-Acquired Pneumonia Clinical Decision Support Implementation Toolkit](#) helps clinicians in emergency departments, primary care, and other ambulatory settings implement and adopt a clinical decision support alert for identifying and managing patients with community-acquired pneumonia.

Clinical staff working in ambulatory care settings have a new resource to improve the quality and safety of care transitions, especially for patients with chronic conditions. [AHRQ's Safe Transitions Toolkit](#) provides practical and evidence-based tools to help clinical staff work more effectively with patients for new and followup appointments.

AHRQ has also released a new resource, the [Toolkit To Promote Safe Surgery](#), which helps hospitals make care safer for their patients who undergo surgery. Hospitals can use the toolkit to apply the proven principles and methods of AHRQ's Comprehensive Unit-based Safety Program to prevent surgical site infections and other complications and improve safety culture in their perioperative and surgical units. The latest tool developed by AHRQ to address adverse drug events is the [Patient and Family Engagement in Primary Care guide](#).

**Effective Treatment.** The findings of the [2018 National Impact Assessment of the Centers for Medicare & Medicaid Services \(CMS\) Quality Measures Report](#) show that the quality and efficiency impact for patients in Medicare and Medicaid improved for 60% of measures analyzed.

A report, [Quitting Smoking Among Adults — United States, 2000–2015](#), was recently released by CDC's Office on Smoking and Health (OSH). The report discusses healthcare quality-related disparities in the delivery and receipt of tobacco cessation interventions and treatments.

**Health Disparities.** HHS continues to address health disparities through targeted initiatives throughout the department. The HHS Health Disparities Council was established in 2004 to develop, influence, and advise on programs, policies, research, data, and communications on racial and ethnic minority health. The Council works to identify and facilitate collaborative, action-oriented approaches to address the HHS minority health, racial and ethnic health disparities, and health equity agenda and priorities, and to more effectively and efficiently share information within HHS.

Increasing data and resources to address health disparities, especially among racial and ethnic minorities, continues to be a priority. The Federal Interagency Health Equity Team (FIHET) published the [Data Compendium](#) of data sources available. The purpose of the FIHET is to identify opportunities for federal collaboration, partnership, coordination and/or action on efforts relevant to the National Partnership for Action; provide leadership and guidance for federal, regional, state, tribal, territorial, and local efforts to address health equity; and infuse health disparities and health equity goals and strategies into member agency policies and practices.

The [2014 Native Hawaiian and Pacific Islander National Health Interview Survey](#) (NHPI NHIS) public-use data were released in August 2017 by CDC. The NHPI NHIS was an unprecedented opportunity to collect rich and accurate information from a large NHPI sample about the health of NHPIs in all 50 states. The NHPI NHIS data show that NHPI adults were more likely than all U.S. adults to be in fair or poor health, to have diabetes, and to have ever had asthma, but they were less likely to have cancer.

A recent report from the Health Resources and Services Administration (HRSA) focuses on health equity. The [Health Equity Report 2017](#) presents a comprehensive analysis of HRSA's program efforts in reducing health disparities and promoting health equity for various populations at the national, state, and local levels. The report describes trends in health

disparities and improvements in health equity for multiple HRSA programs, such as maternal and child health, primary healthcare access and quality, HIV/AIDS, health workforce, and rural-urban and geographic disparities.

Recently, the [National Institute on Minority Health and Health Disparities](#) launched a new online resource, [HDPulse](#), for public health professionals and researchers. The Data Portal allows users to explore issues related to health disparities and access data, published reports, and public-use files.

The Intradepartmental Council for Native American Affairs advises the HHS Secretary on Native American issues, coordinates all federal agencies' resources for Native Americans, develops and implements policies on Native American affairs for HHS, and ensures policy consistency throughout HHS and, where possible, throughout the federal government.

Through various quality improvement and patient safety initiatives, HHS and other federal agencies drive us toward better healthcare. The 2017 QDR documents ongoing progress toward the goal of high-quality healthcare that is accessible to all Americans and identifies areas for improvement. Policymakers, researchers, and others can use these findings to direct future efforts toward making healthcare safer and more effective, coordinated, affordable, and equitable.

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## ABBREVIATIONS USED IN THE REPORT

- ACS NSQIP: American College of Surgeons National Surgical Quality Improvement Program
- AI/AN: American Indian or Alaska Native
- FIHET: Federal Interagency Healthcare Equity Team
- FPL: Federal Poverty Level
- HCUP: Healthcare Cost & Utilization Project
- HHCAHPS: Home Health Consumer Assessment of Healthcare Providers and Systems
- ICD-9-CM: International Classification of Diseases, 9<sup>th</sup> Revision, Clinical Modification; ICD-10-CM refers to the 10<sup>th</sup> Revision.
- IWG: Interagency Work Group
- MEPS: Medical Expenditure Panel Survey
- MPSMS: Medicare Patient Safety Monitoring System
- NHSS: National HIV/AIDS Surveillance System
- NCDB: National Cancer Data Base
- NEDS: National Emergency Department Sample
- NHANES: National Health and Nutrition Examination Survey
- NHIS: National Health Interview Survey
- NHPI: Native Hawaiian/Pacific Islander
- NIS: National Immunization Survey
- NVSS: National Vital Statistics System
- QDR: National Healthcare Quality and Disparities Report
- SID: State Inpatient Databases
- UM-KECC: University of Michigan Kidney Epidemiology and Cost Center
- USRDS: U.S. Renal Data System
- YLD: years lived with disability
- 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
  - CDOM: Center for Delivery, Organization, and Markets
  - 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
- ASPE: Office of the Assistant Secretary for Planning and Evaluation
- CDC: Centers for Disease Control and Prevention
  - 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
  - HRSA: Health Resources and Services Administration
  - 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
- SAMHSA: Substance Abuse and Mental Health Services Administration

# **APPENDIXES**





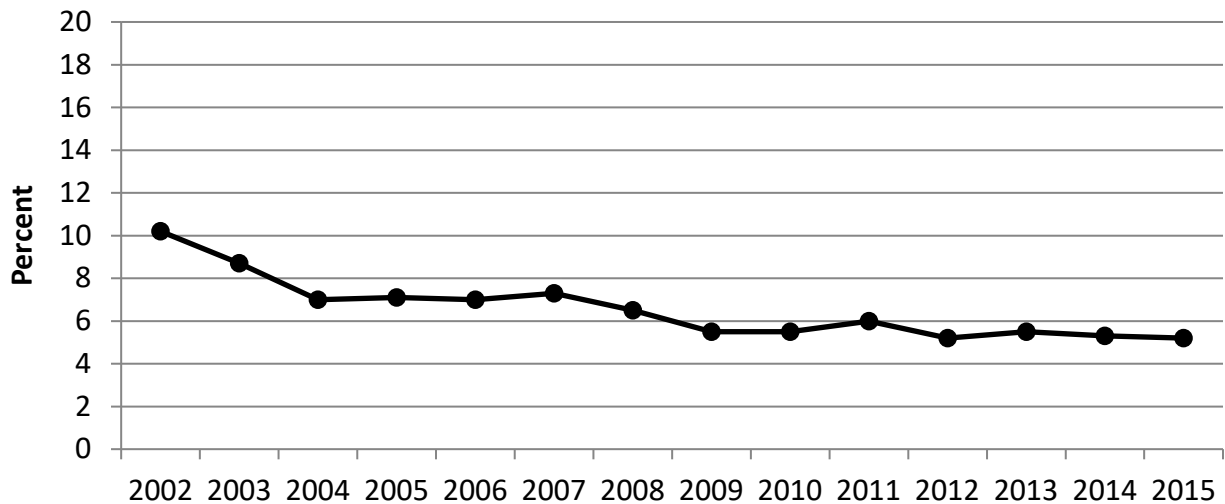


## APPENDIX A. SELECTED MEASURE DATA

### Overall Trends in Access

#### Improving Measures

**Graph 1. Improving: 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, 2002-2015**

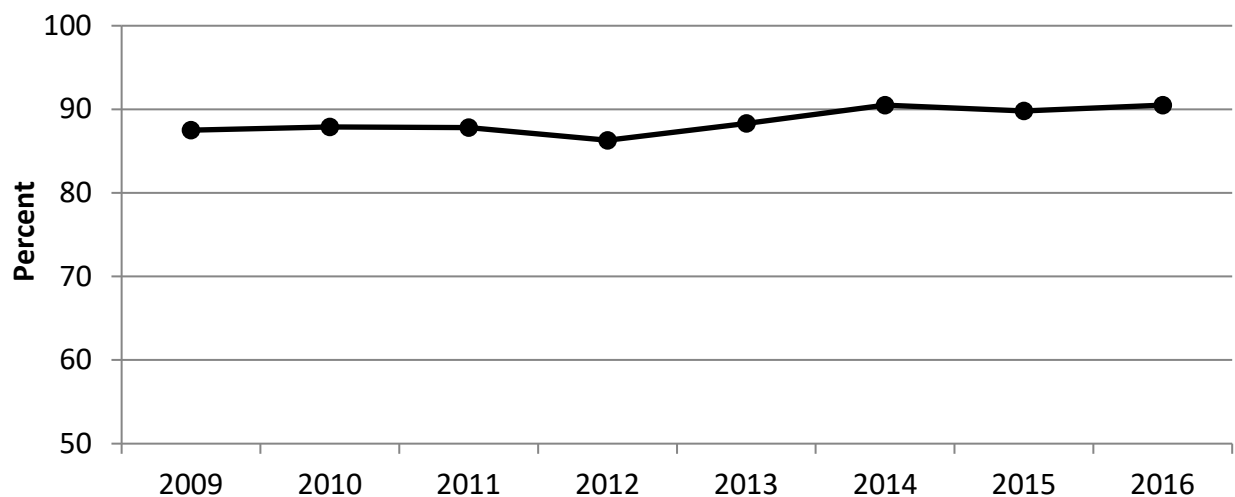


**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2015.

**Note:** For this measure, lower rates are better. The wording reflects a Likert-type scale with the following options: Always, Usually, Sometimes, Never. Sometimes and Never are combined into a single category that is the opposite of Always.

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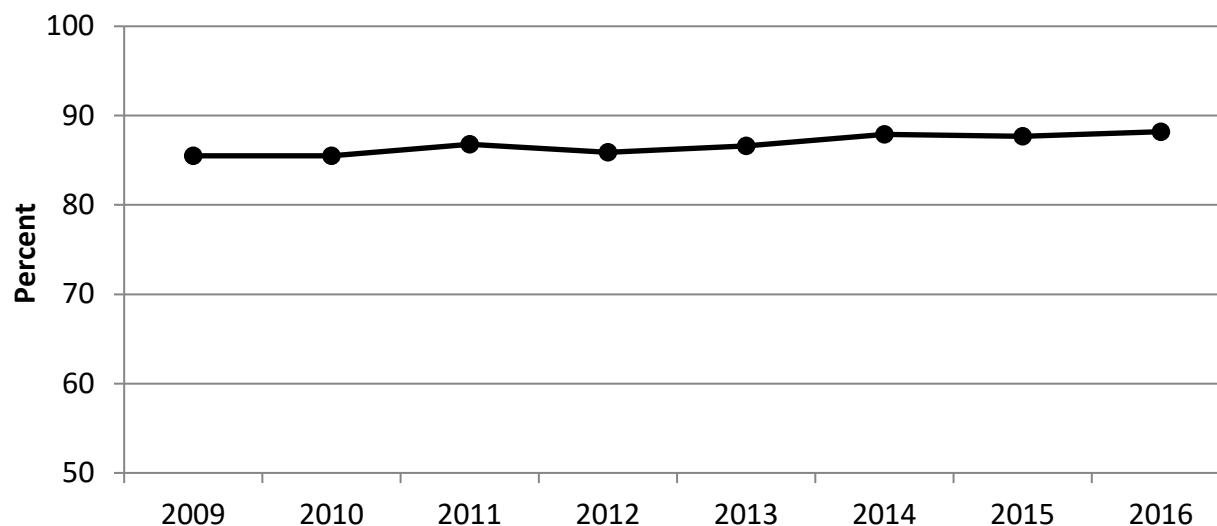
**Graph 2. Improving: People in fair or poor health with a specific source of ongoing care, 2009-2016**



**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2009-2016.

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**Graph 3. Improving: People with a specific source of ongoing care, 2009-2016**

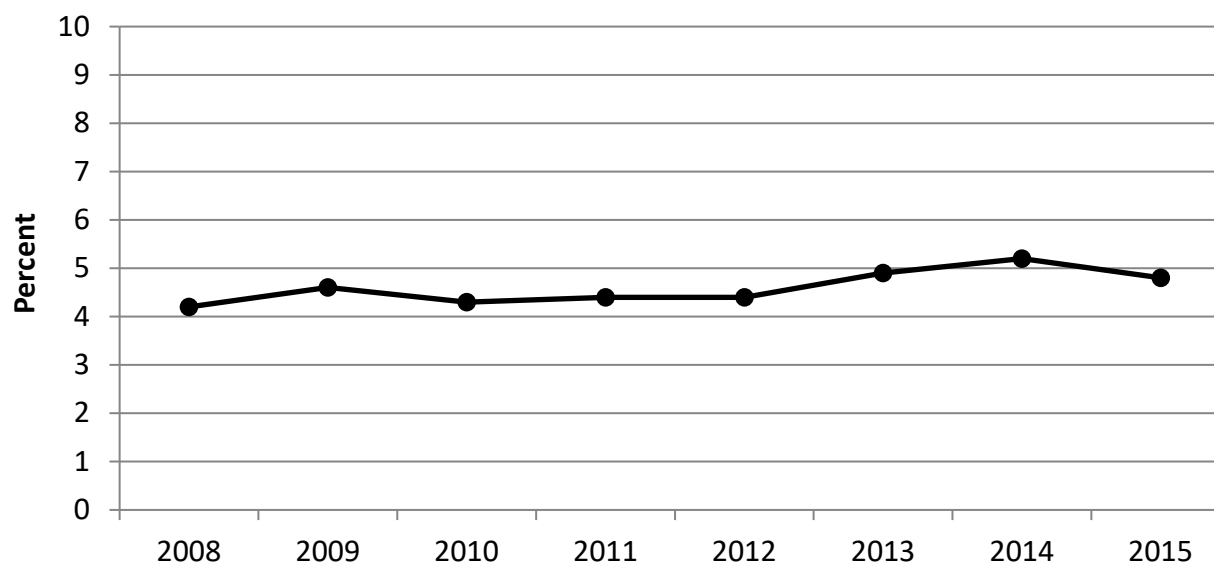


**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2009-2016.

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## Worsening Measures

**Graph 4. Worsening: 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, 2008-2015**



**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2008-2015.

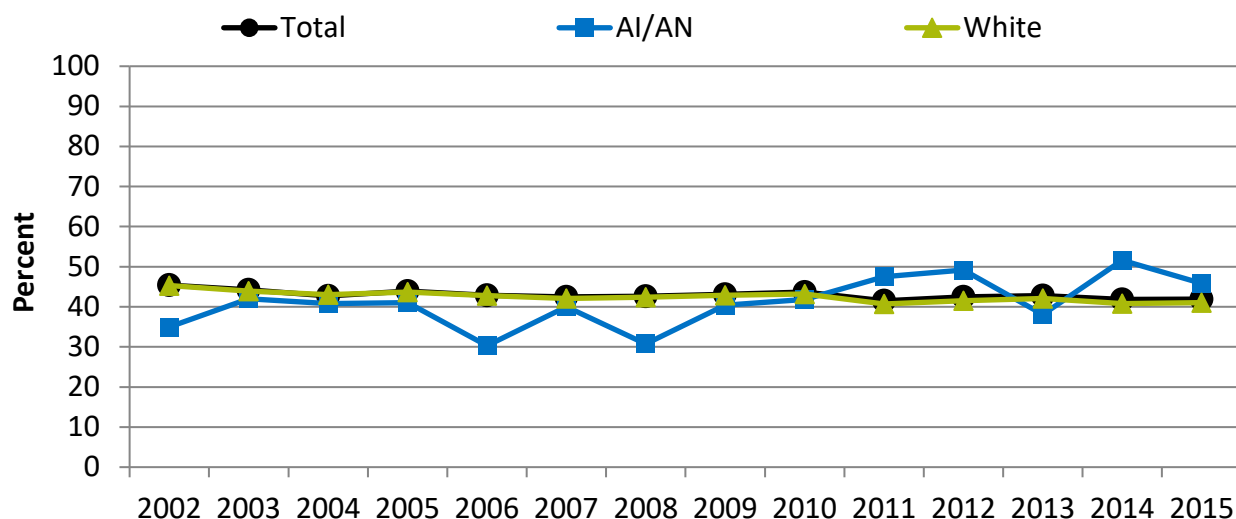
**Note:** For this measure, lower rates are better. The wording reflects a Likert-type scale with the following options: Always, Usually, Sometimes, Never. Sometimes and Never are combined into a single category that is the opposite of Always.

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## Trends in Access Disparities

### Improving (Disparities Getting Smaller)

**Graph 5. Improving: People with a usual source of care, excluding hospital emergency rooms, who has office hours at night or on weekends, AI/AN vs. White, 2002-2015**

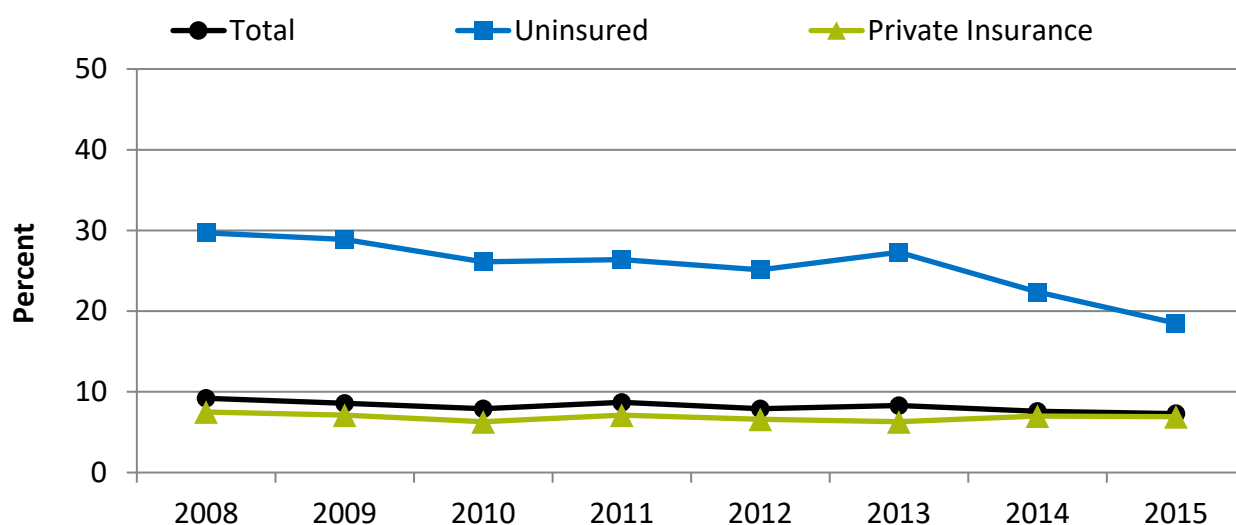


**Key:** AI/AN = American Indian or Alaska Native.

**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2015.

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**Graph 6. Improving: 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, uninsured vs. private insurance, 2008-2015**

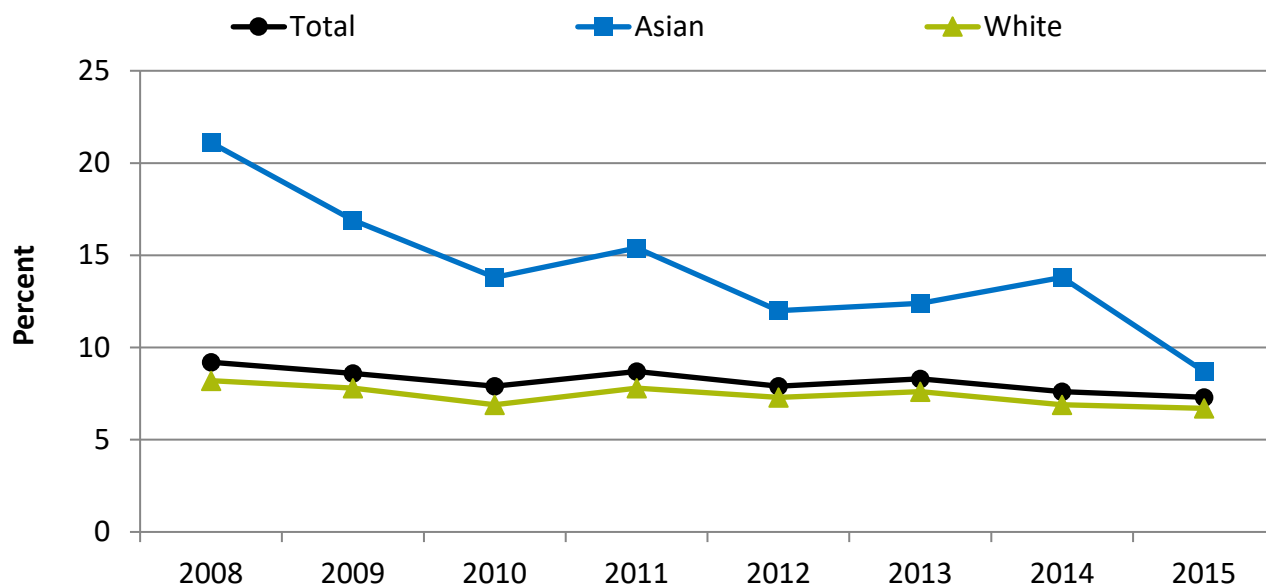


**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2008-2015.

**Note:** For this measure, lower rates are better. The wording reflects a Likert-type scale with the following options: Always, Usually, Sometimes, Never. Sometimes and Never are combined into a single category that is the opposite of Always.

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**Graph 7. Improving: 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, Asian vs. White, 2008-2015**



**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2008-2015.

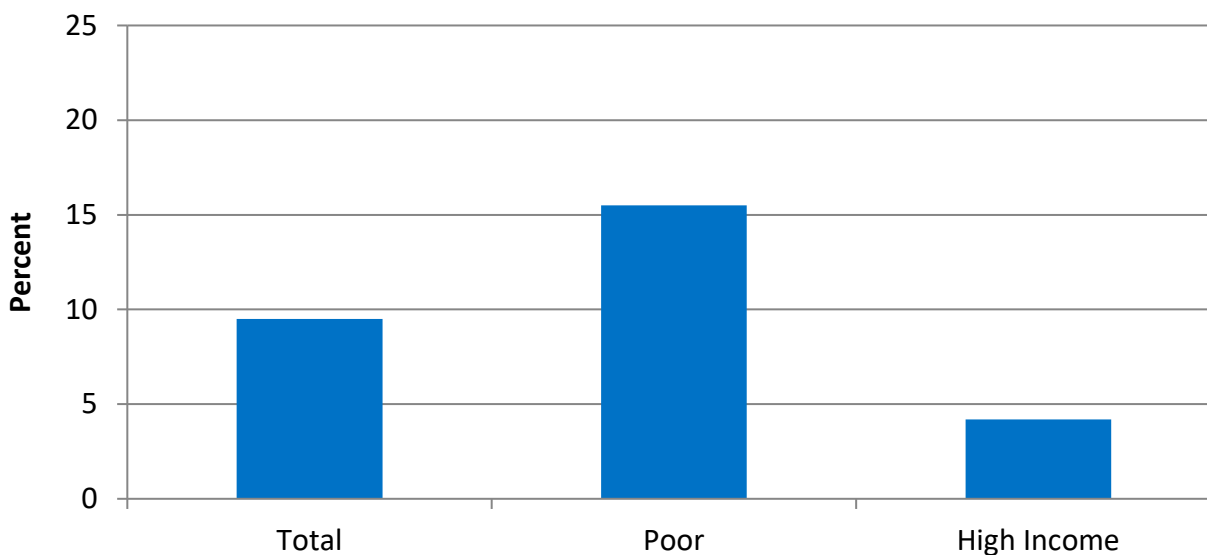
**Note:** For this measure, lower rates are better. The wording reflects a Likert-type scale with the following options: Always, Usually, Sometimes, Never. Sometimes and Never are combined into a single category that is the opposite of Always.

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## Worse Access to Care

### Largest Disparities for Poor People

**Graph 8. People under age 65 who were uninsured all year, poor vs. high income, 2015**

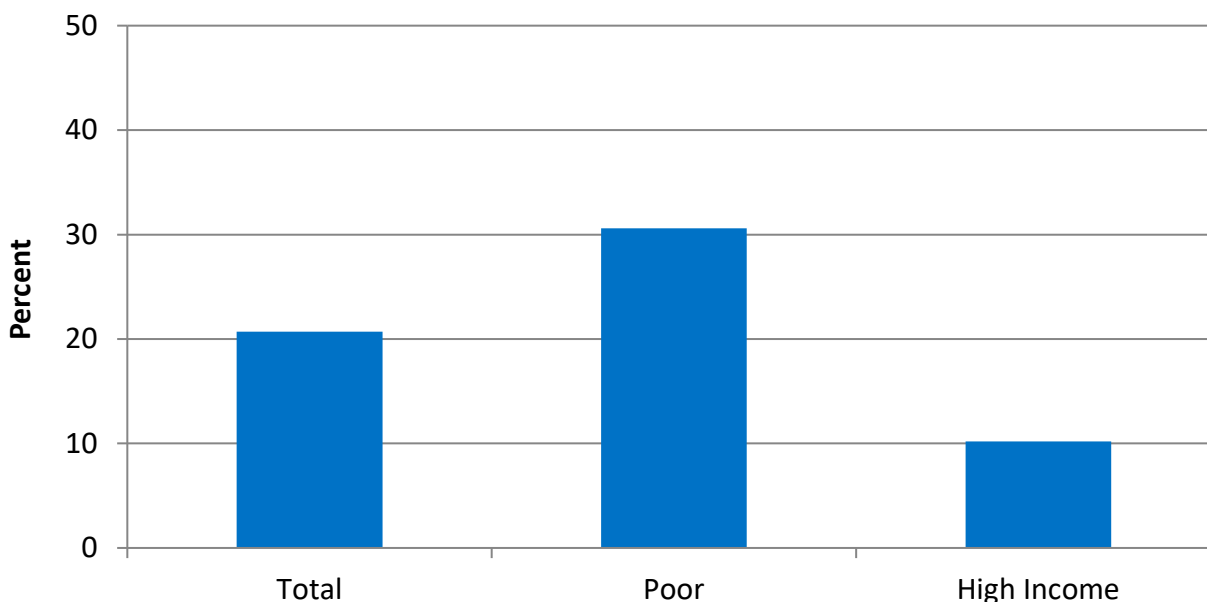


**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2015.

**Note:** For this measure, lower rates are better.

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**Graph 9. People under age 65 with any period of uninsurance during the year, poor vs. high income, 2015**



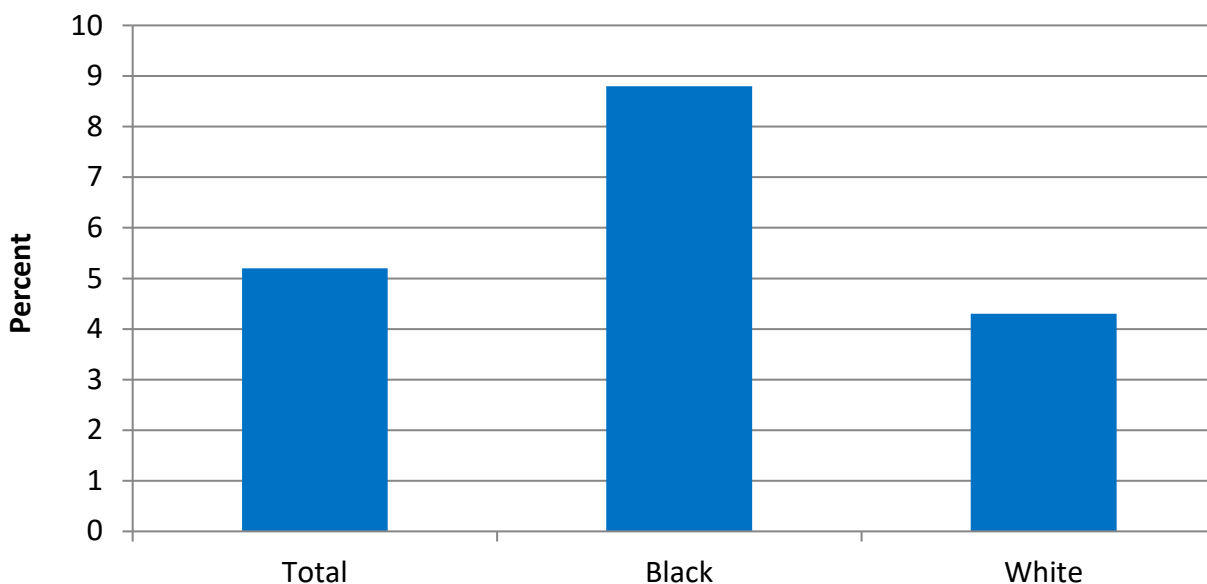
**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2015.

**Note:** For this measure, lower rates are better.

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### Largest Disparities for Blacks

**Graph 10. 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, Black vs. White, 2015**

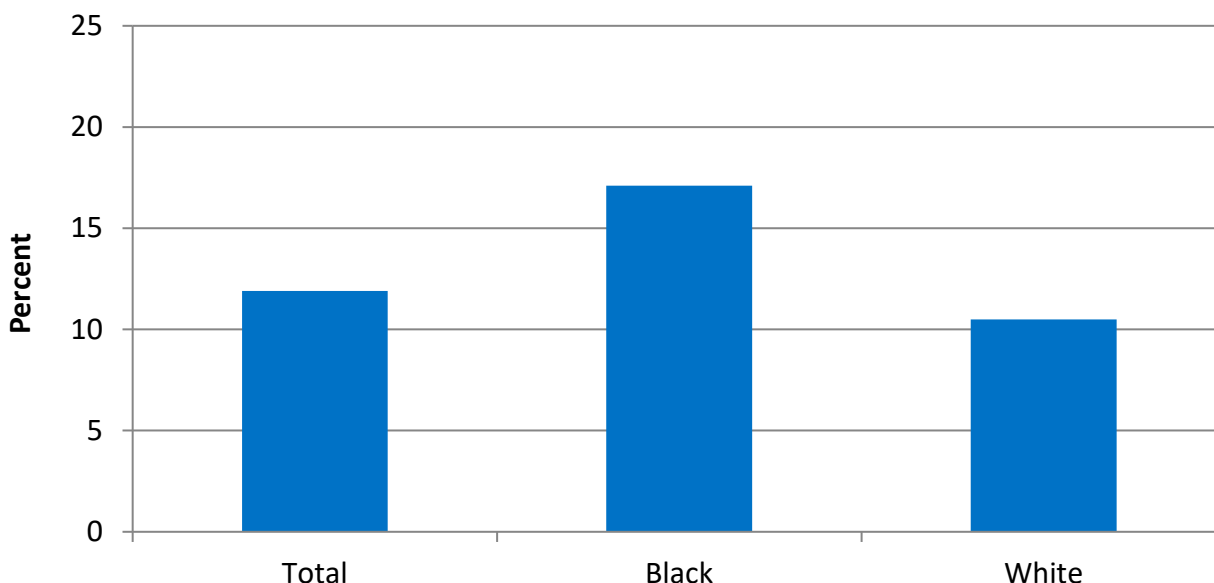


**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2015.

**Note:** For this measure, lower rates are better. The wording reflects a Likert-type scale with the following options: Always, Usually, Sometimes, Never. Sometimes and Never are combined into a single category that is the opposite of Always.

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**Graph 11. 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, Black vs. White, 2015**



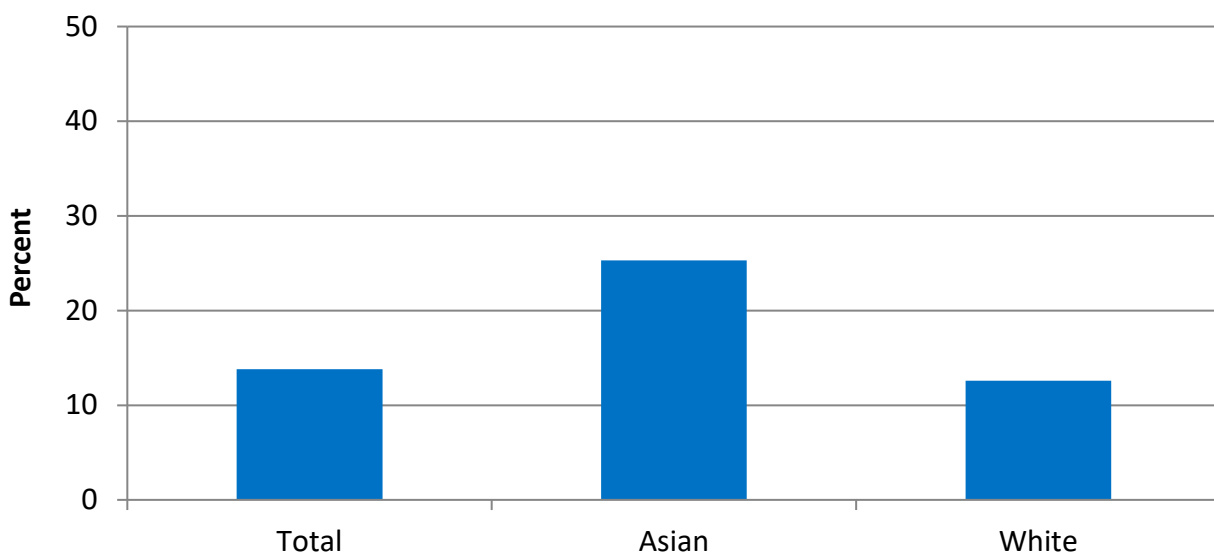
**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2015.

**Note:** For this measure, lower rates are better. The wording reflects a Likert-type scale with the following options: Always, Usually, Sometimes, Never. Sometimes and Never are combined into a single category that is the opposite of Always.

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### Largest Disparities for Asians

**Graph 12. 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, Asian vs. White, 2015**

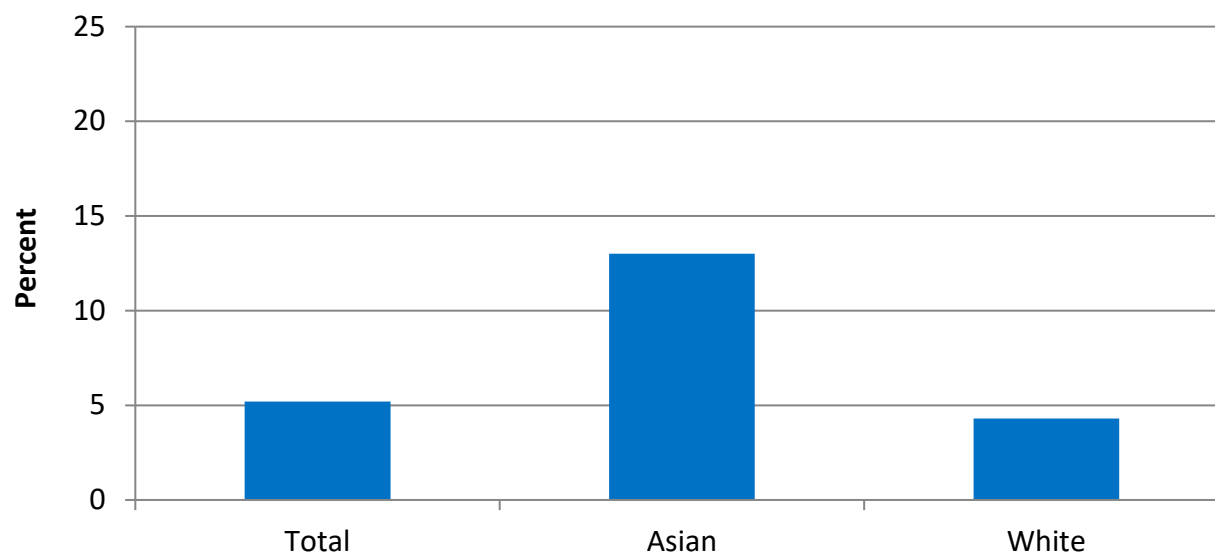


**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2015.

**Note:** For this measure, lower rates are better. The wording reflects a Likert-type scale with the following options: Always, Usually, Sometimes, Never. Sometimes and Never are combined into a single category that is the opposite of Always.

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**Graph 13. 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, Asian vs. White, 2015**



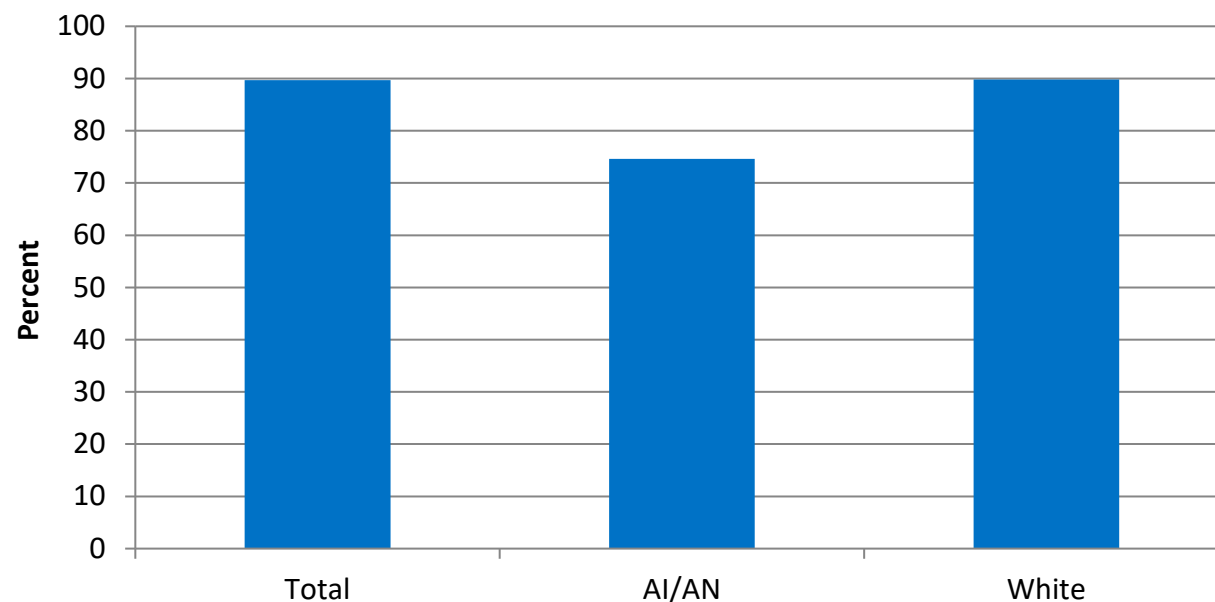
**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2015.

**Note:** For this measure, lower rates are better. The wording reflects a Likert-type scale with the following options: Always, Usually, Sometimes, Never. Sometimes and Never are combined into a single category that is the opposite of Always.

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### Largest Disparities for American Indians and Alaska Natives

**Graph 14. People under age 65 with health insurance, AI/AN vs. White, 2016**

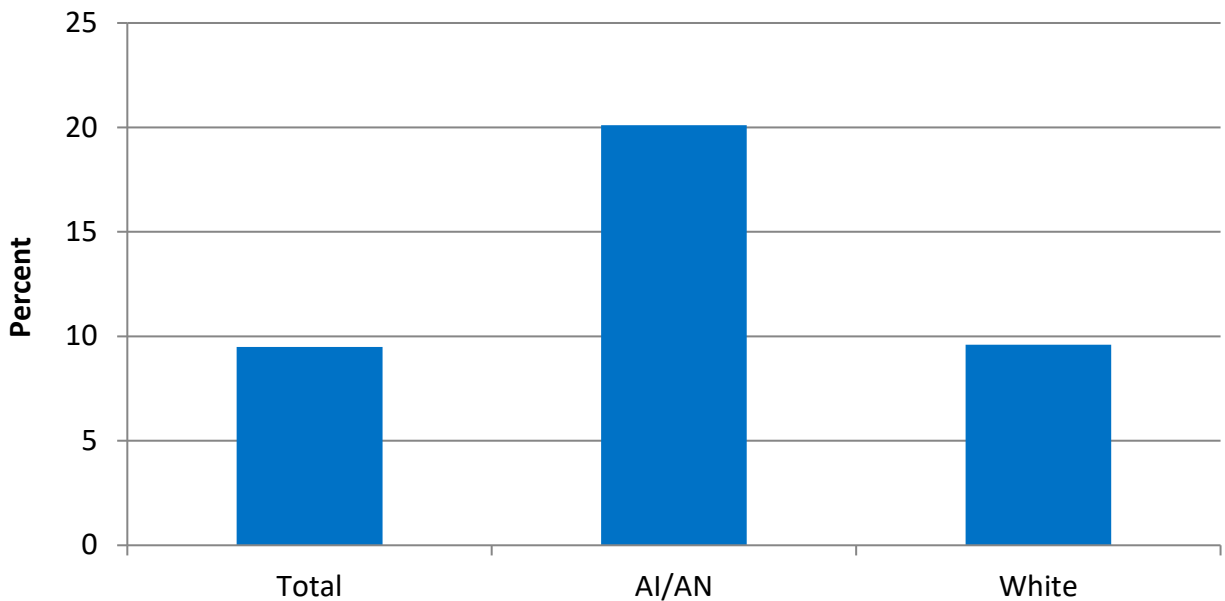


**Key:** AI/AN = American Indian/Alaska Native.

**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2016.

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**Graph 15. People under age 65 who were uninsured all year, AI/AN vs. White, 2015**



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

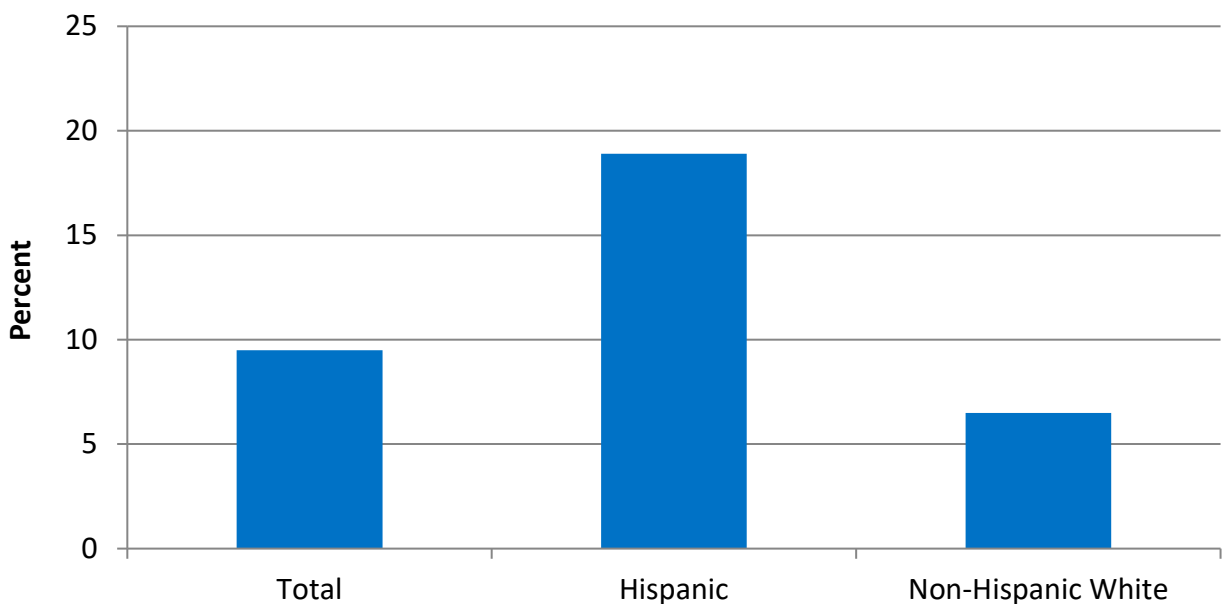
**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2015.

**Note:** For this measure, lower rates are better.

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### Largest Disparities for Hispanics

**Graph 16. People under age 65 who were uninsured all year, Hispanic vs. non-Hispanic White, 2015**



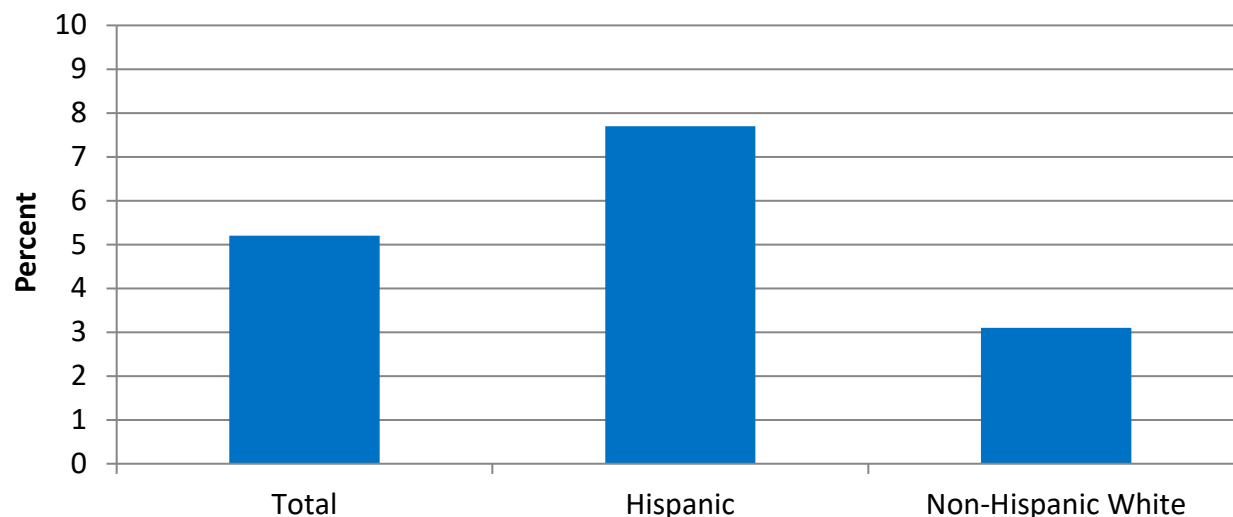
**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2015.

**Note:** For this measure, lower rates are better.

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**Graph 17. 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, Hispanic vs. non-Hispanic White, 2015**



**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2015.

**Note:** For this measure, lower rates are better. The wording reflects a Likert-type scale with the following options: Always, Usually, Sometimes, Never. Sometimes and Never are combined into a single category that is the opposite of Always.

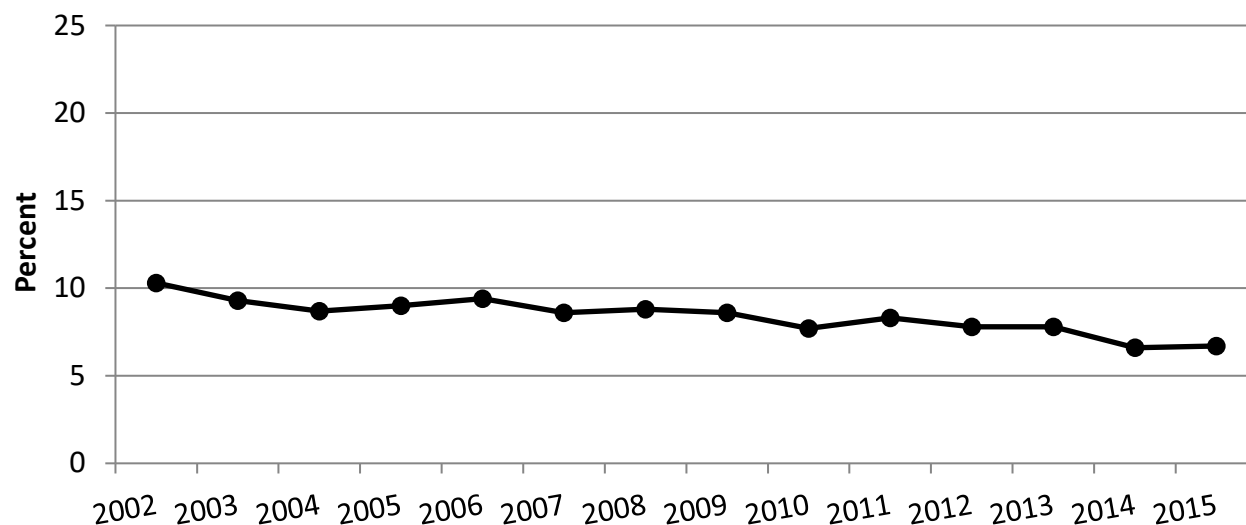
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## Trends in Quality

### Person-Centered Care

#### Improving Measures

**Graph 18. Improving: Adults who had a doctor's office or clinic visit in the last 12 months whose health providers sometimes or never listened carefully, 2002-2015**



**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2015.

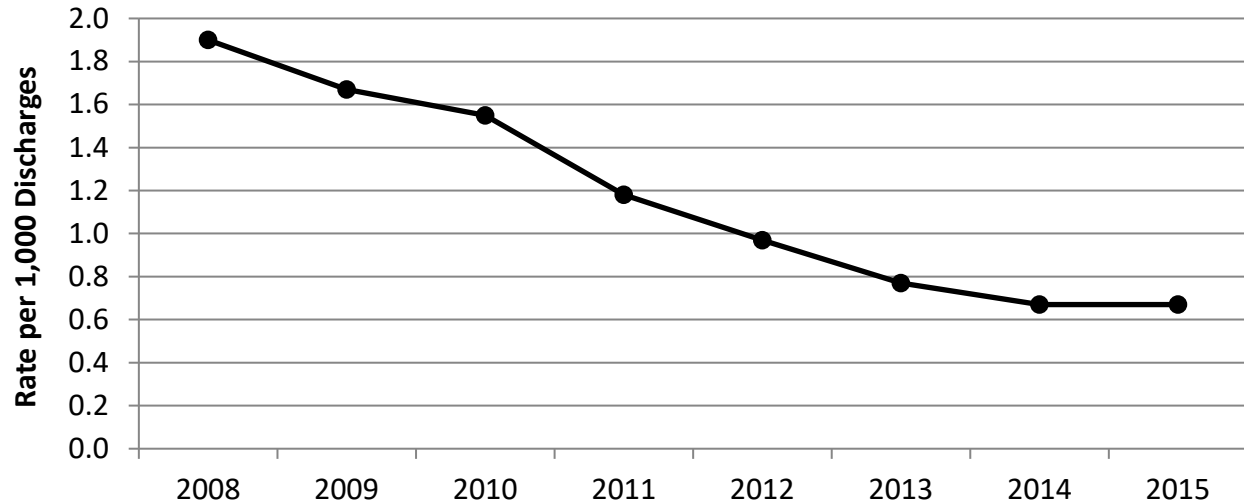
**Note:** For this measure, lower rates are better. The wording reflects a Likert-type scale with the following options: Always, Usually, Sometimes, Never. Sometimes and Never are combined into a single category that is the opposite of Always.

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## Patient Safety

### Improving Measures

**Graph 19. Improving: Hospital admissions with central venous catheter-related bloodstream infection per 1,000 medical and surgical discharges of length 2 or more days, adults age 18 and over or obstetric admissions, 2008-2015**

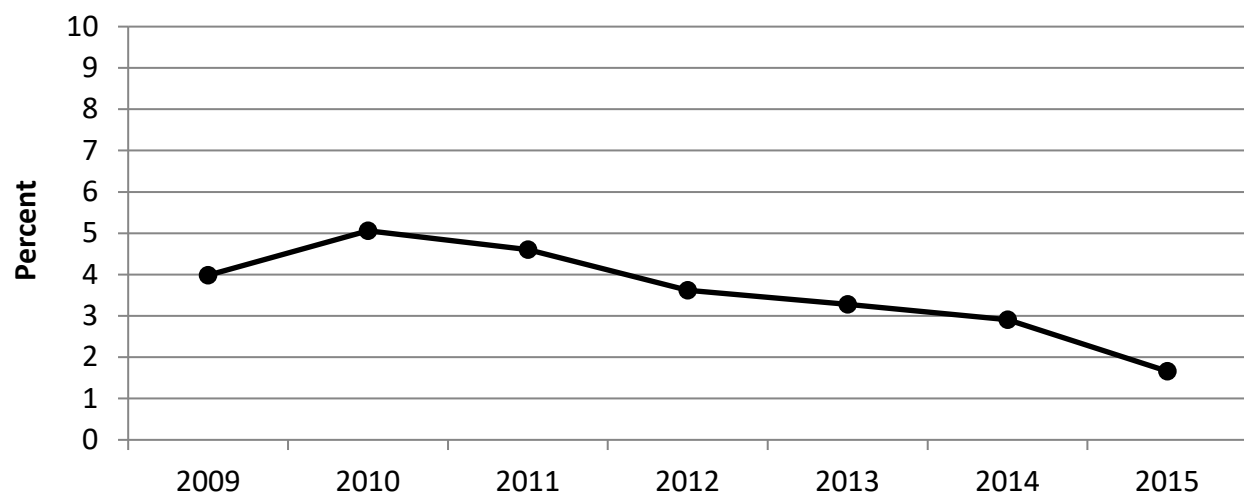


**Source:** Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample (NIS), 2008-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2008-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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**Graph 20. Improving: Adult patients age 18 and over receiving hip joint replacement due to degenerative conditions who had adverse events, 2009-2015**

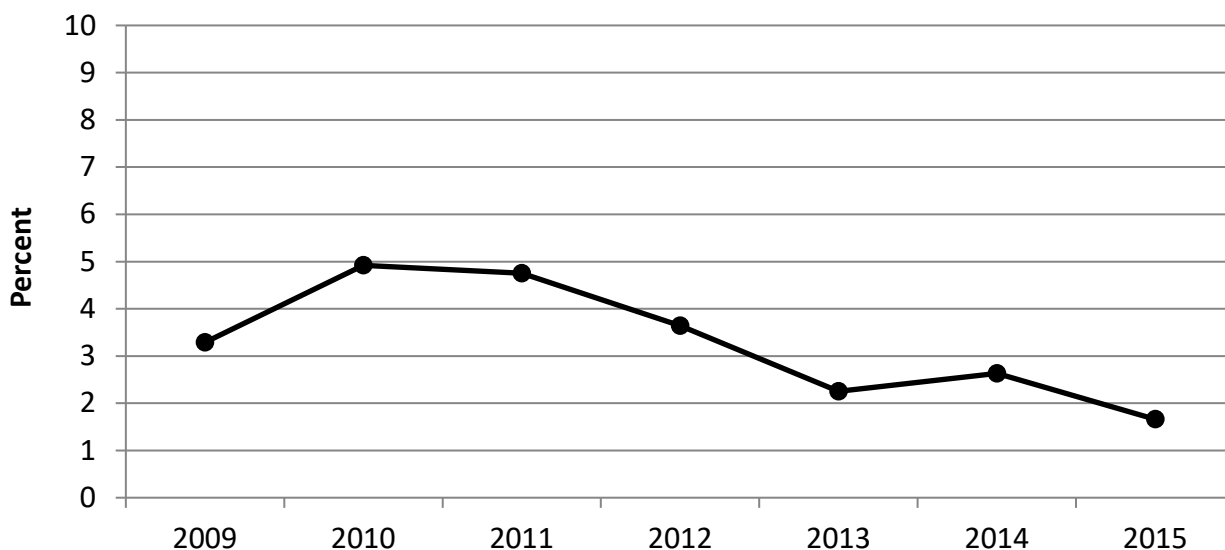


**Source:** Agency for Healthcare Research and Quality and Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System, 2009-2015.

**Note:** For this measure, lower rates are better.

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**Graph 21. Improving: Adult patients age 18 and over receiving knee replacement who had adverse events, 2009-2015**



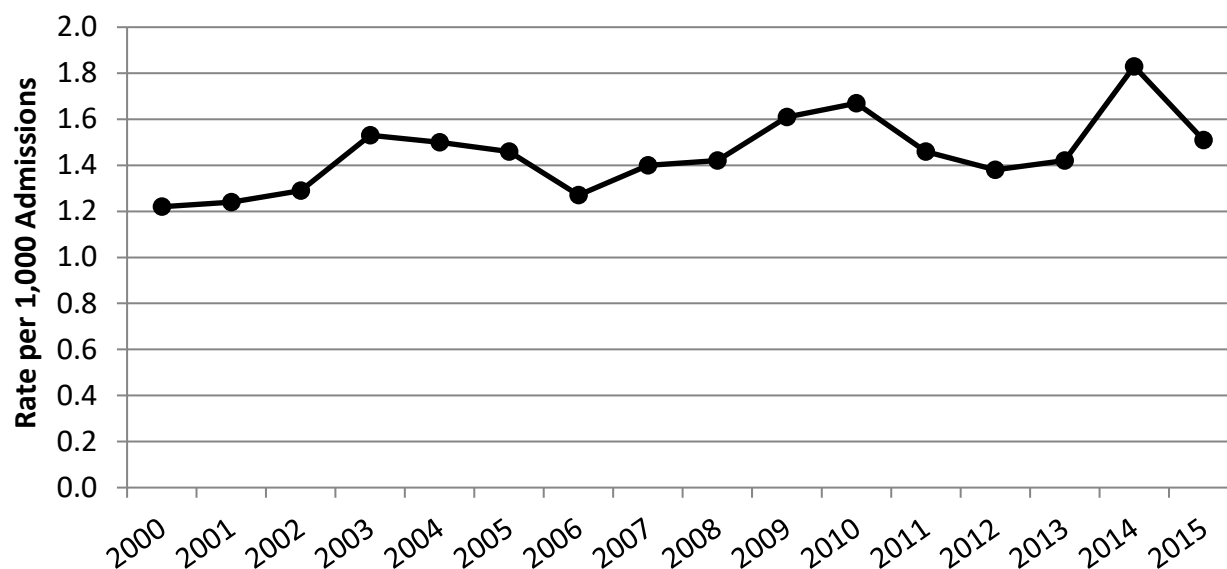
**Source:** Agency for Healthcare Research and Quality and Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System, 2009-2015.

**Note:** For this measure, lower rates are better.

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### Worsening Measures

**Graph 22. Worsening: Postoperative physiologic and metabolic derangements per 1,000 elective-surgery admissions, age 18 and over, 2000-2015**

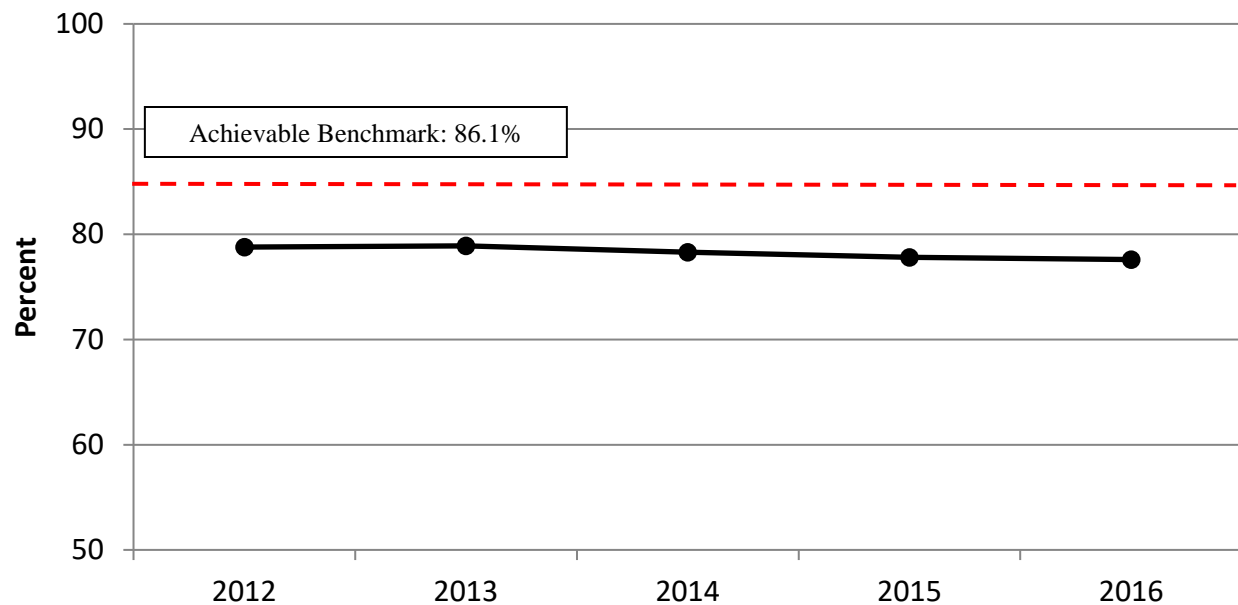


**Source:** Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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**Graph 23. Worsening: Adults who reported the provider asked to see all the prescription and over-the-counter medicines they were taking when they initiated home health care, 2012-2016**



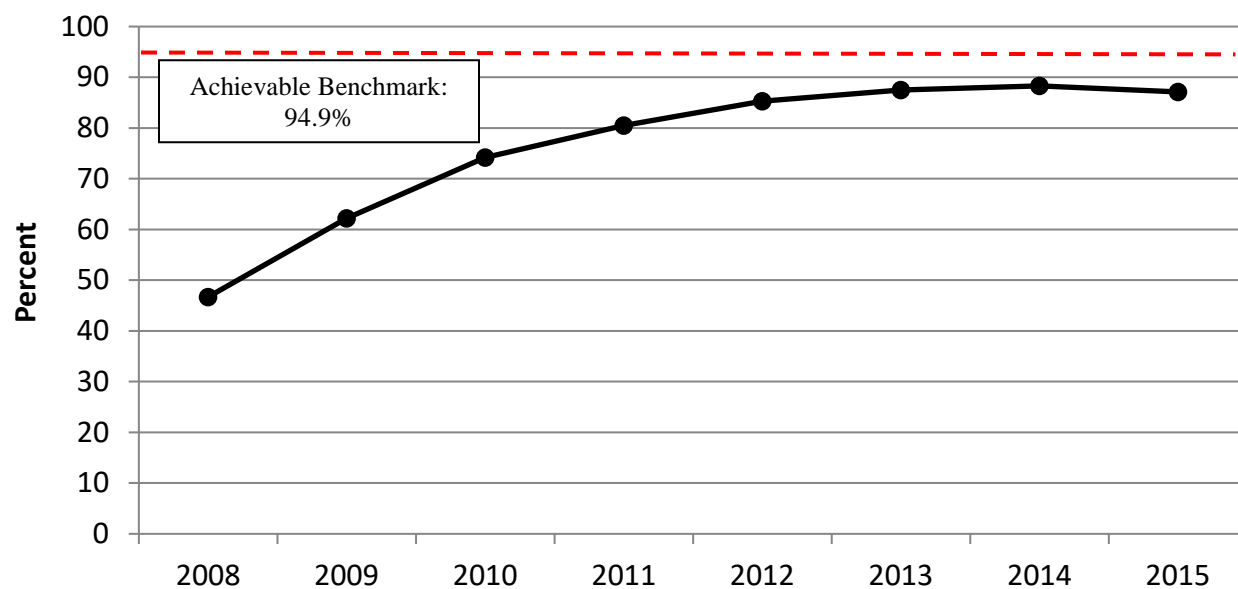
**Source:** Centers for Medicare & Medicaid Services, Home Health Consumer Assessment of Healthcare Providers and Systems, 2012-2016.

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## Healthy Living

### Improving Measures

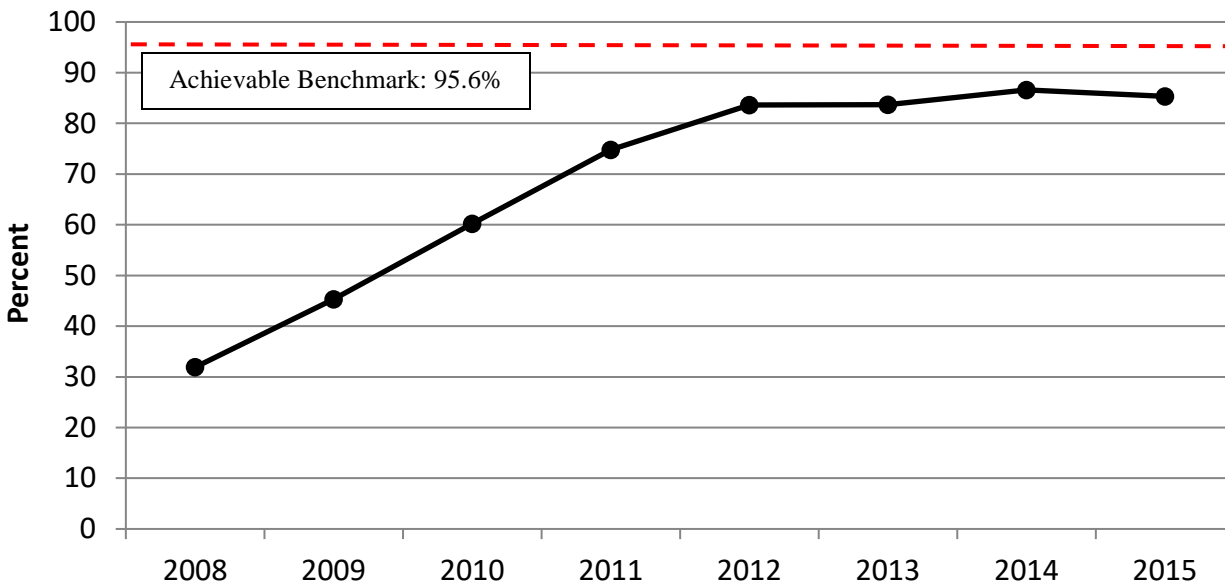
**Graph 24. Improving: Adolescents ages 13-15 years who received 1 or more doses of tetanus-diphtheria-acellular pertussis (Tdap) vaccine, 2008-2015**



**Source:** Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases and National Center for Health Statistics, National Immunization Survey – Teen, 2008-2015.

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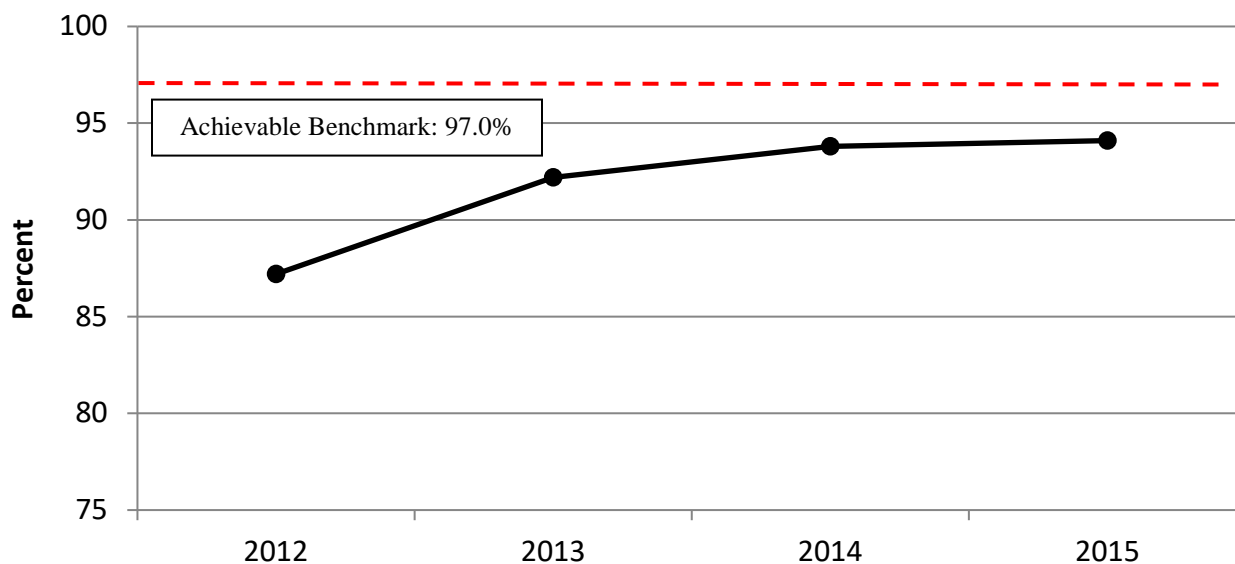
**Graph 25. Improving: Adolescents ages 16-17 years who received 1 or more doses of tetanus-diphtheria-acellular pertussis (Tdap) vaccine, 2008-2015**



**Source:** Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases and National Center for Health Statistics, National Immunization Survey – Teen, 2008-2015.

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**Graph 26. Improving: Hospital patients who received influenza vaccination, 2012-2015**

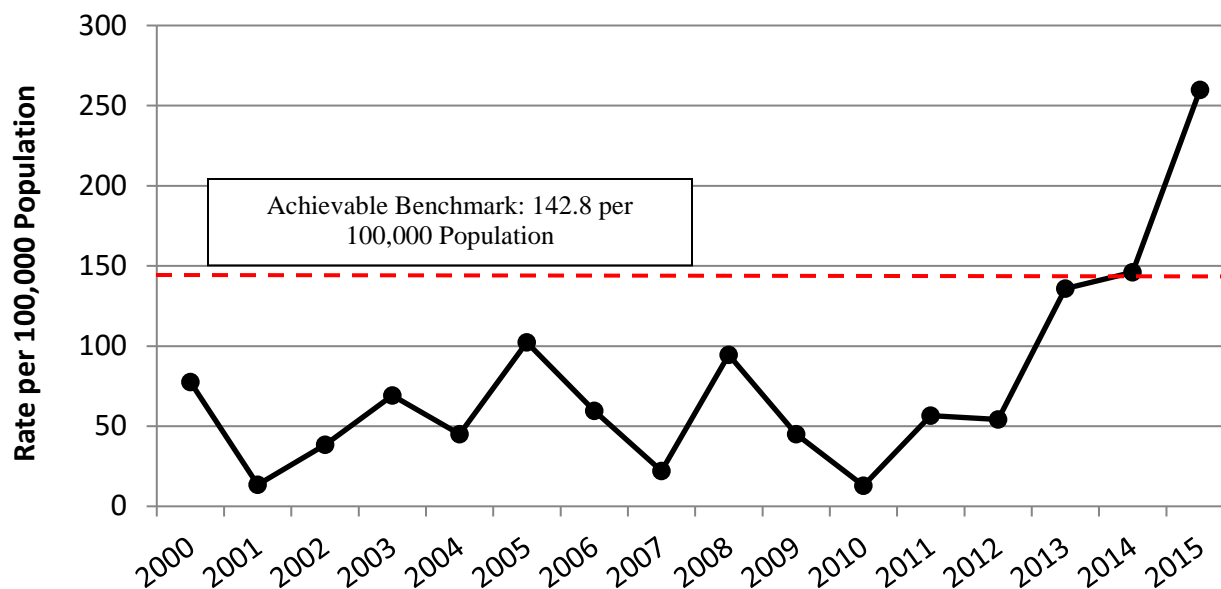


**Source:** Centers for Medicare & Medicaid Services Clinical Data Warehouse, 2012-2015.

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## Worsening Measures

**Graph 27. Worsening: Hospital admissions for immunization-preventable influenza per 100,000 population age 65 and over, 2000-2015**

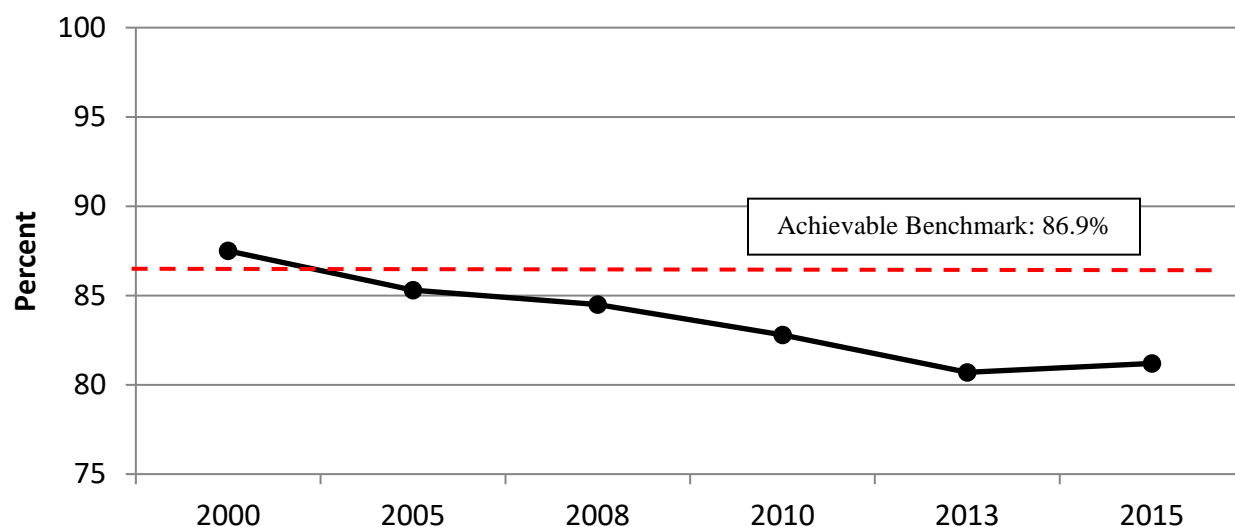


**Source:** Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

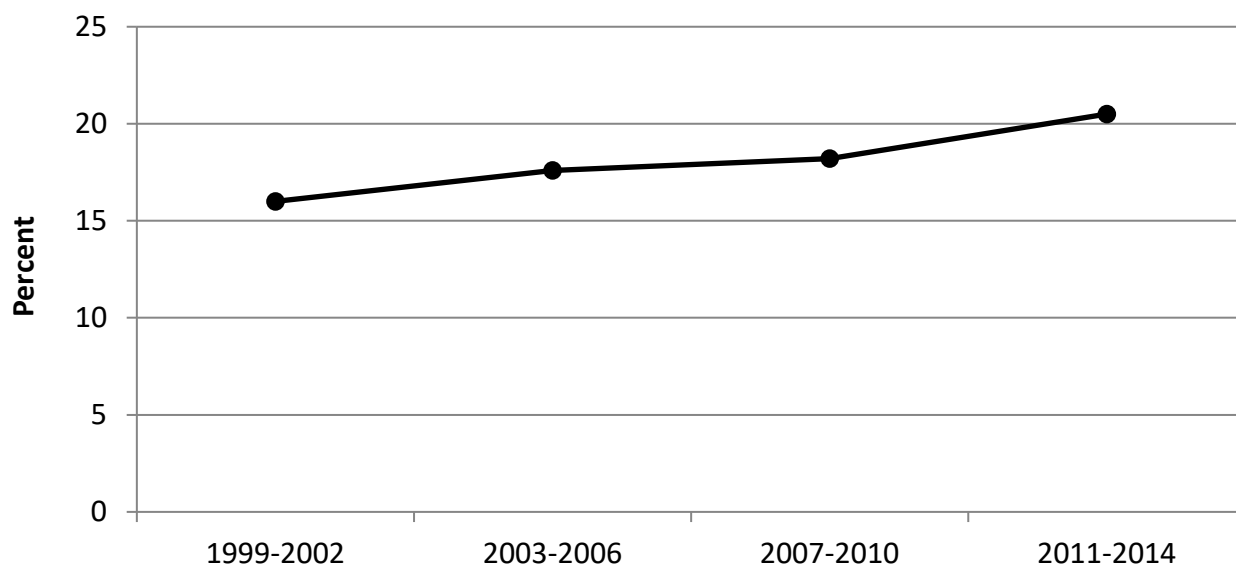
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**Graph 28. Worsening: Women ages 21-65 who received a Pap test in the last 3 years, 2000-2015**



**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2000-2015.

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**Graph 29. Worsening: Adolescents ages 12-19 with obesity, 1999-2002 to 2011-2014**

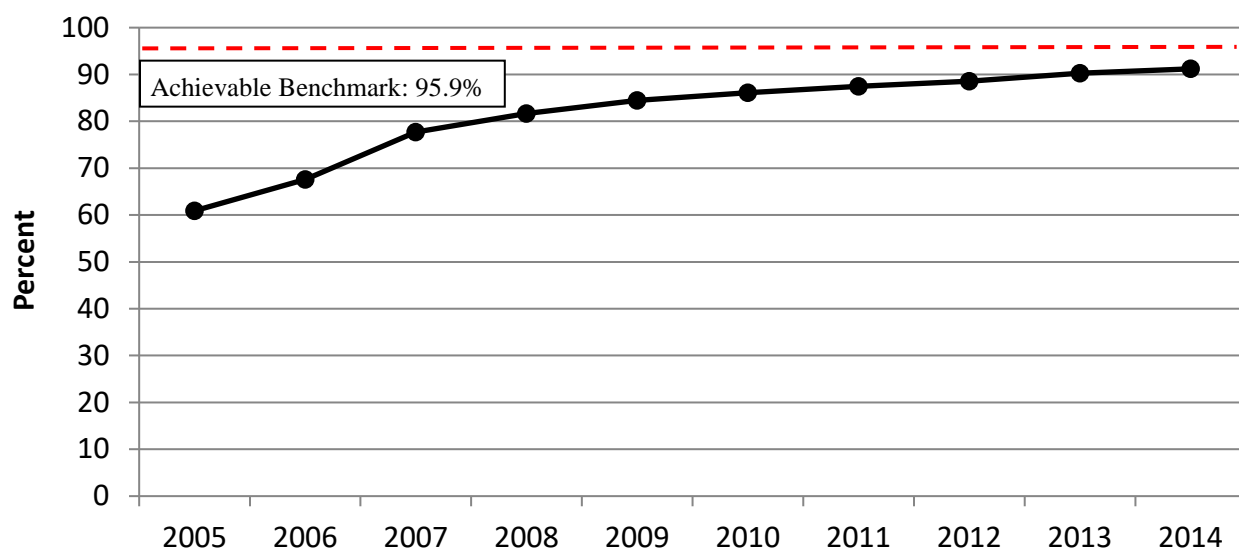
**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics, National Health and Nutrition Examination Survey, 1999-2002 to 2011-2014.

**Note:** For this measure, lower rates are better.

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## Effective Treatment

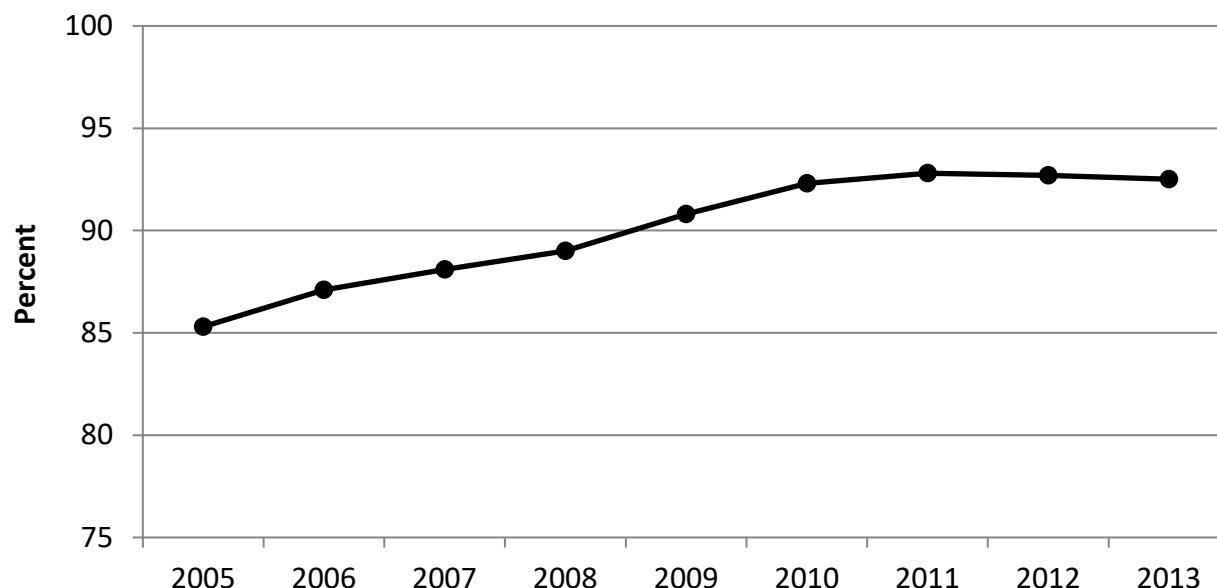
### Improving Measures

**Graph 30. Improving: Patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined, 2005-2014**

**Source:** Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base, 2005-2014.

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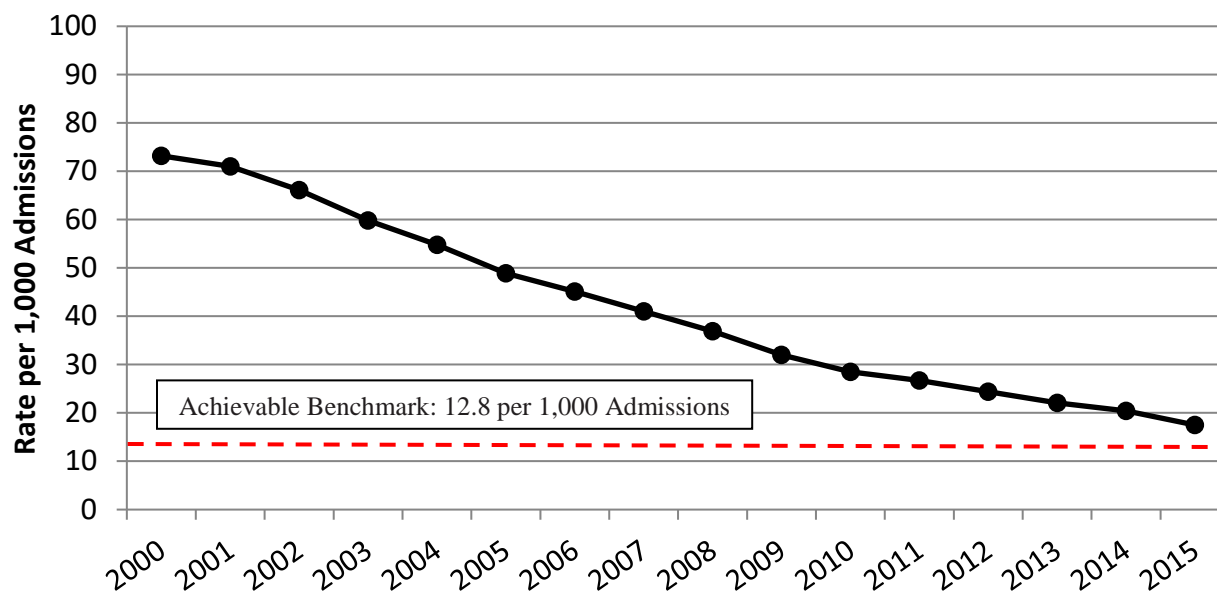
**Graph 31. Improving: Women under age 70 treated for breast cancer with breast-conserving surgery who received radiation therapy to the breast within 1 year of diagnosis, 2005-2013**



**Source:** Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base, 2005-2013.

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**Graph 32. Improving: Deaths per 1,000 adult hospital admissions with pneumonia, 2000-2015**



**Source:** Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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>).

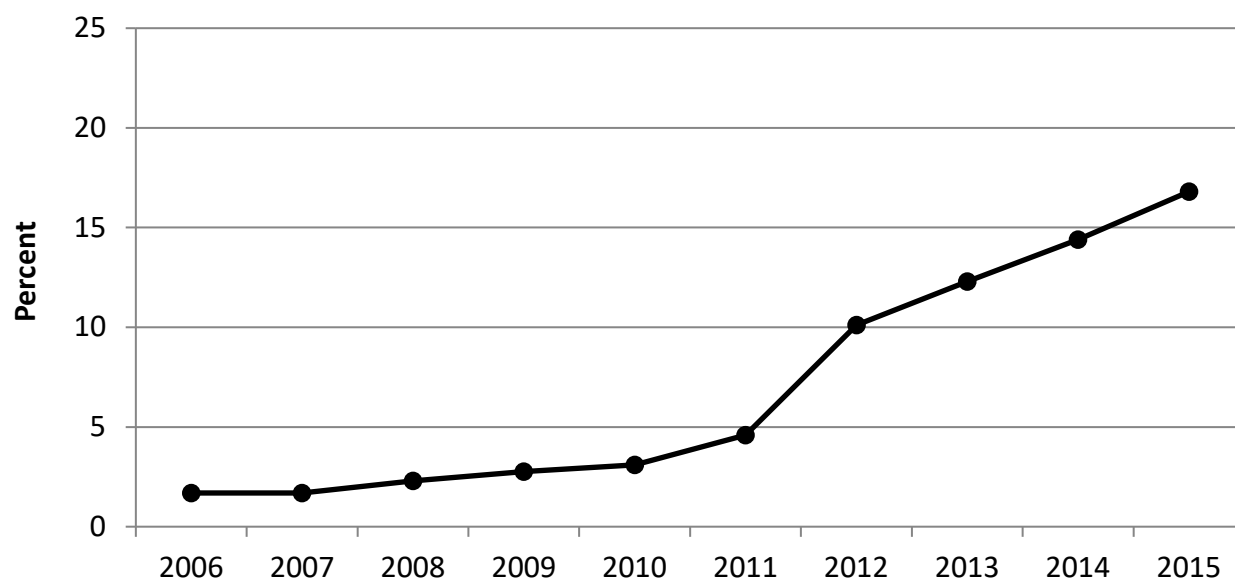
**Note:** For this measure, lower rates are better.

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## Worsening Measures

**Graph 33. Worsening: Hemodialysis patients whose hemoglobin level is less than 10 g/dL, 2006-2015**

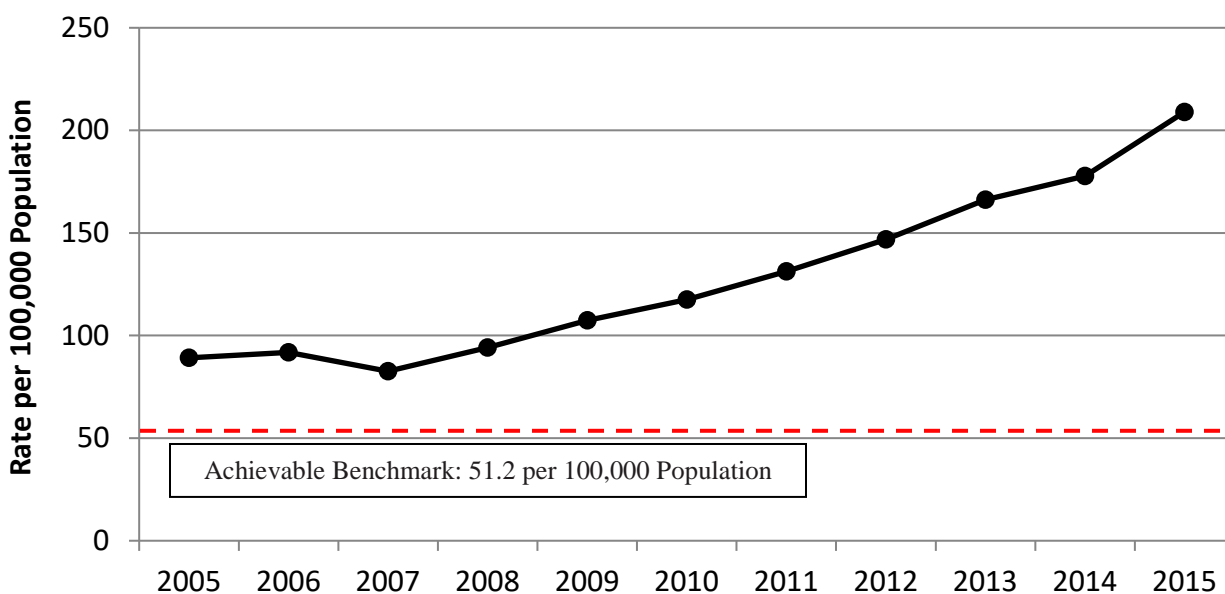


**Source:** University of Michigan Kidney Epidemiology and Cost Center, Dialysis Facility Reports, 2006-2015.

**Note:** For this measure, lower rates are better.

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**Graph 34. Worsening: Emergency department visits involving opioid-related diagnoses per 100,000 population, 2005-2015**

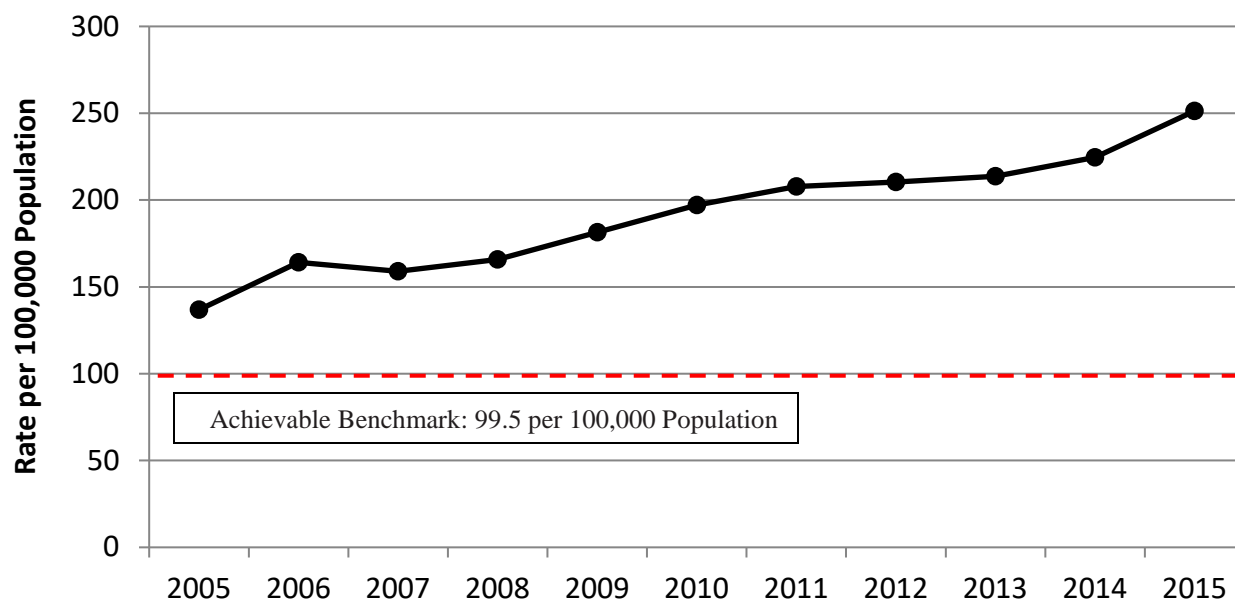


**Source:** Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample and Nationwide Emergency Department Sample, and AHRQ Quality Indicators, version 4.4, 2005-2015.

**Note:** For this measure, lower rates are better.

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**Graph 35. Worsening: Hospital inpatient stays involving opioid-related diagnoses per 100,000 population, 2005-2015**

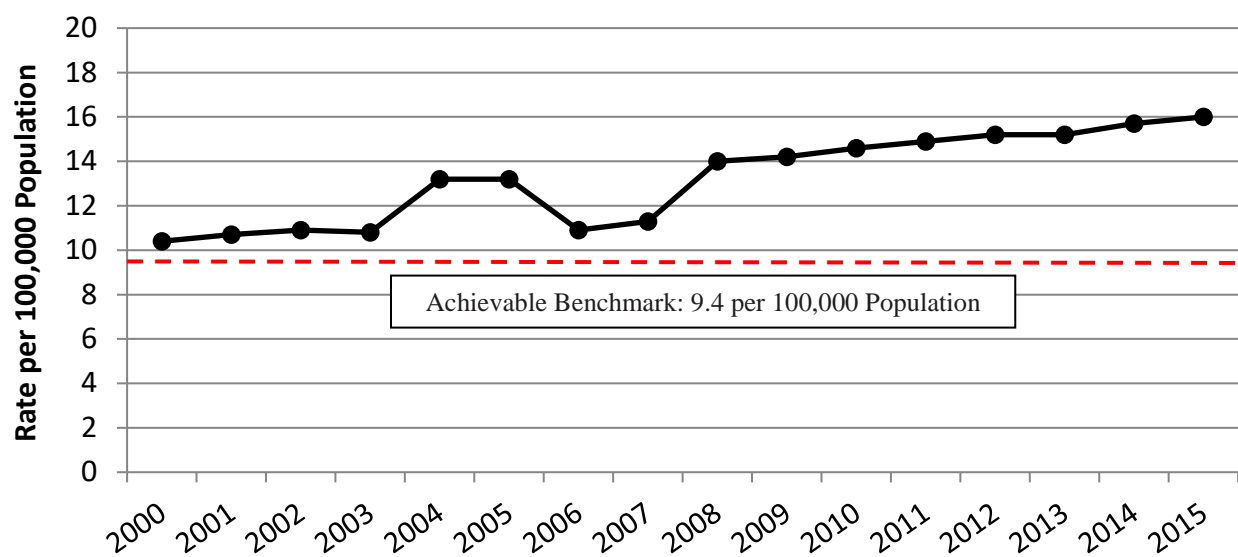


**Source:** Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, State Inpatient Databases and AHRQ Quality Indicators, version 4.4, 2005-2015.

**Note:** For this measure, lower rates are better.

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**Graph 36. Worsening: Suicide deaths among people age 12 and over per 100,000 population, 2000-2015**

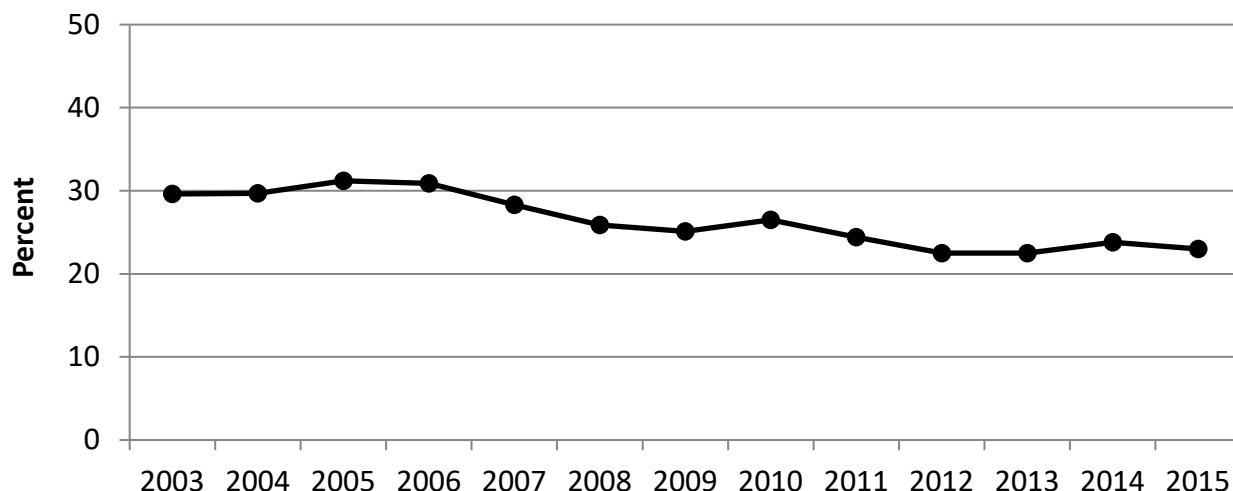


**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System – Mortality, 2000-2015.

**Note:** For this measure, lower rates are better.

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**Graph 37. Worsening: People with current asthma who are now taking preventive medicine daily or almost daily (either oral or inhaler), 2003-2015**



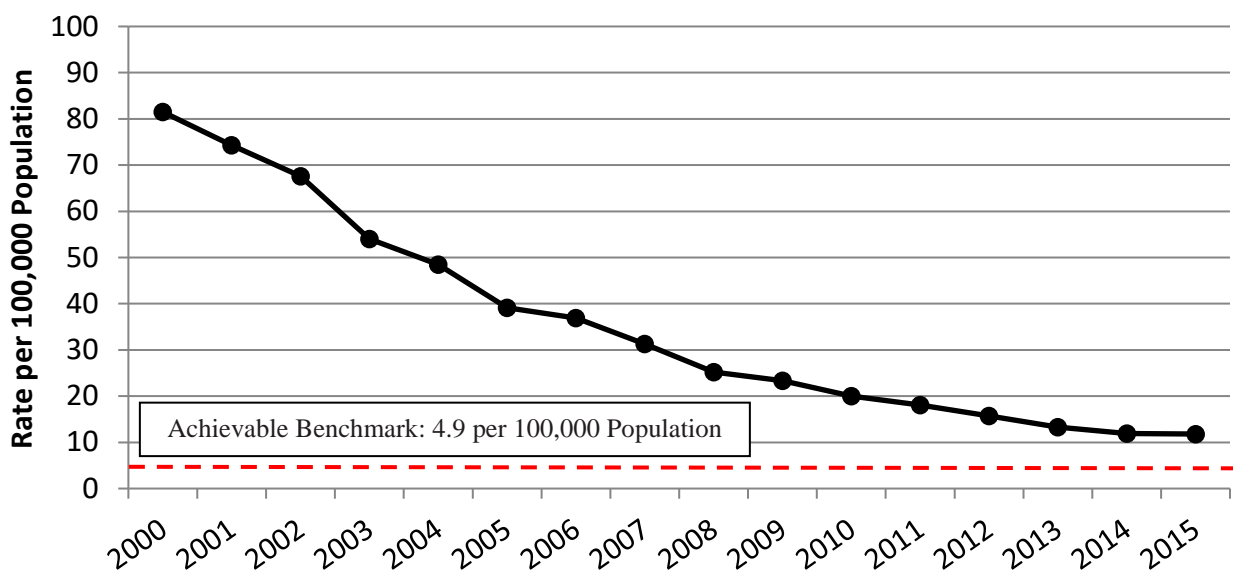
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2003-2015.

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## Care Coordination

### Improving Measures

**Graph 38. Improving: Potentially avoidable hospital admissions for angina per 100,000 population, adults age 18 and over, 2000-2015**

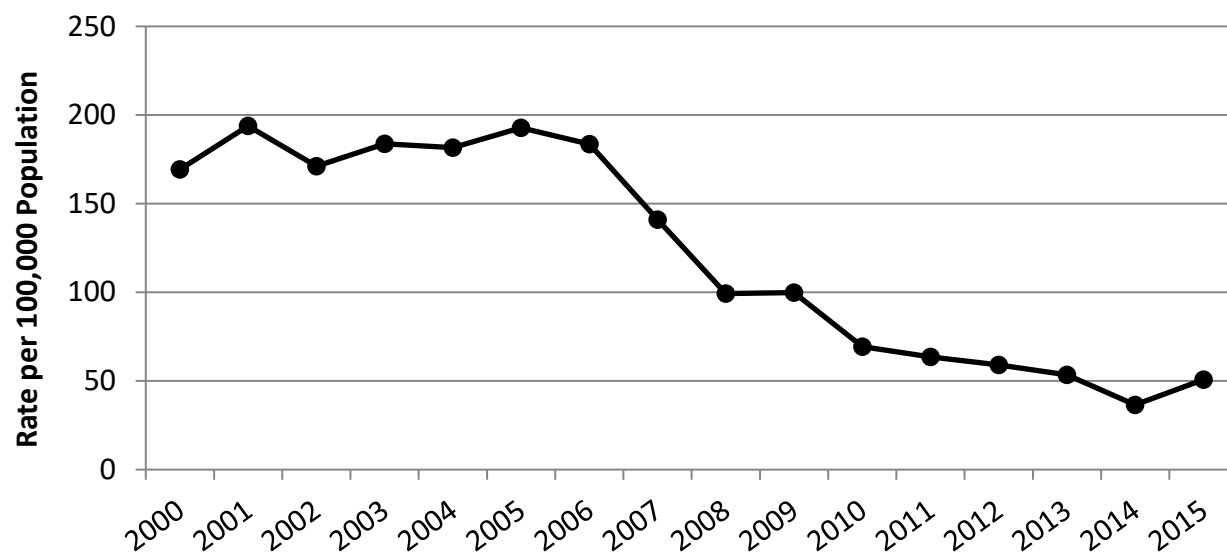


Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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**Graph 39. Improving: Potentially avoidable hospital admissions for pediatric gastroenteritis per 100,000 population, children ages 3 months to 17 years, 2000-2015**



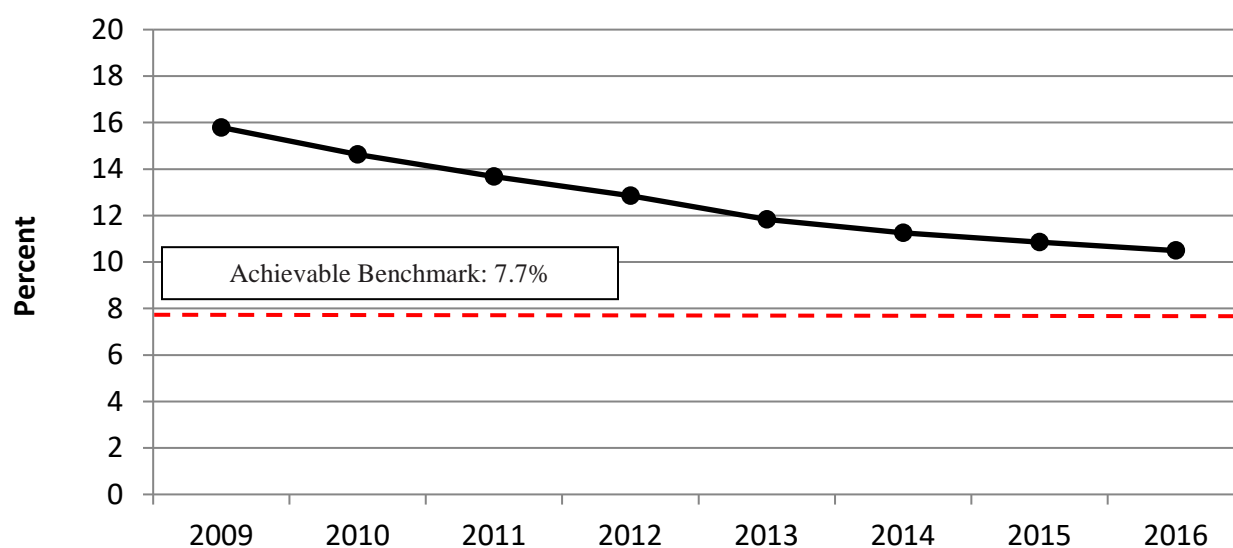
**Source:** Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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>).

**Denominator:** Children ages 0-17.

**Note:** For this measure, lower rates are better.

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**Graph 40. Improving: Adult hospital patients who did not receive good communication about discharge information, 2009-2016**



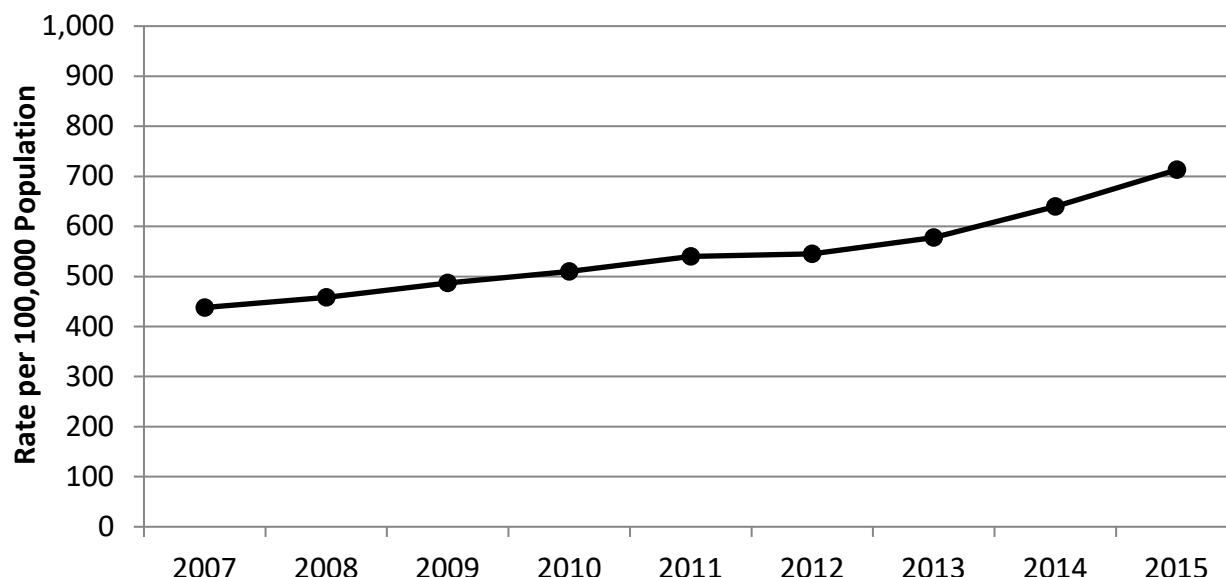
**Source:** Centers for Medicare & Medicaid Services, Hospital Consumer Assessment of Healthcare Providers and Systems, 2009-2016.

**Note:** For this measure, lower rates are better. Good communication about discharge means that when patients left the hospital they had a good understanding of the things they were responsible for in managing their health.

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## Worsening Measures

**Graph 41. Worsening: Emergency department visits with a principal diagnosis related to substance abuse only per 100,000 population, 2007-2015**

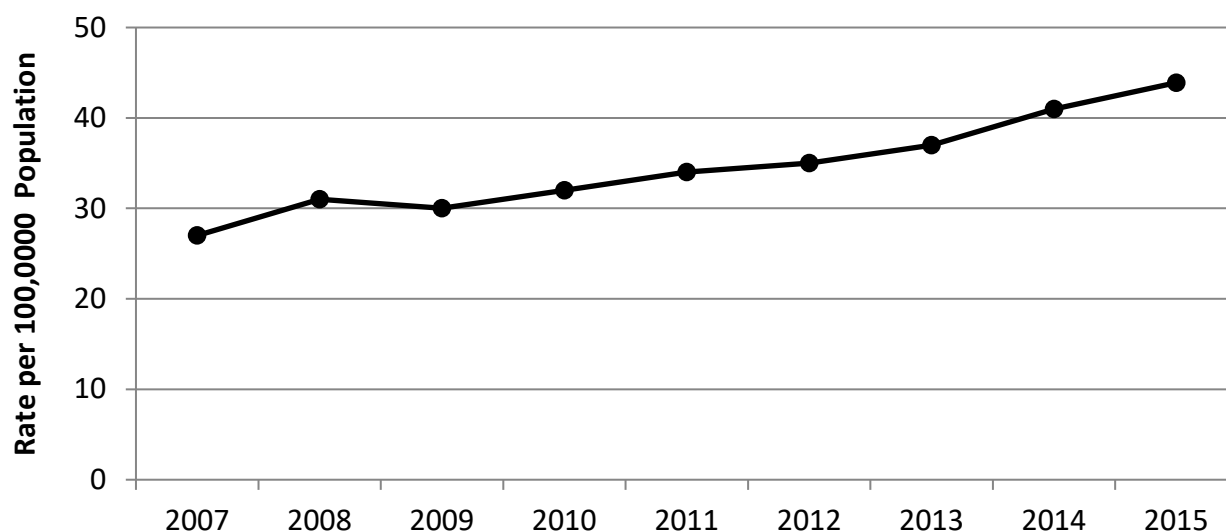


**Source:** Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2007-2015.

**Note:** For this measure, lower rates are better. Estimates for 2015 were based on 9 months of data (January-September 2015) with International Classification of Diseases, 9<sup>th</sup> Revision coding. The number of visits is not reported.

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**Graph 42. Worsening: Emergency department visits with a principal diagnosis related to co-occurring mental health, alcohol abuse, and substance abuse per 100,000 population, 2007-2015**

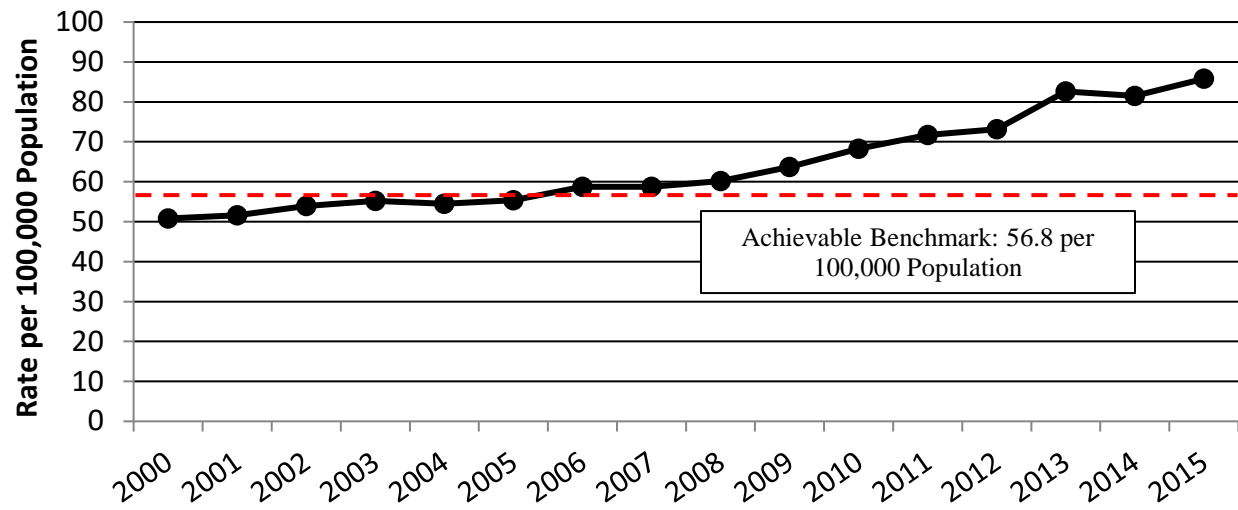


**Source:** Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2007-2015.

**Note:** For this measure, lower rates are better. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. The number of visits is not reported.

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**Graph 43. Worsening: Potentially avoidable hospital admissions for short-term complications of diabetes per 100,000 population, adults age 18 and over, 2000-2015**



**Source:** Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, 2000-2015.

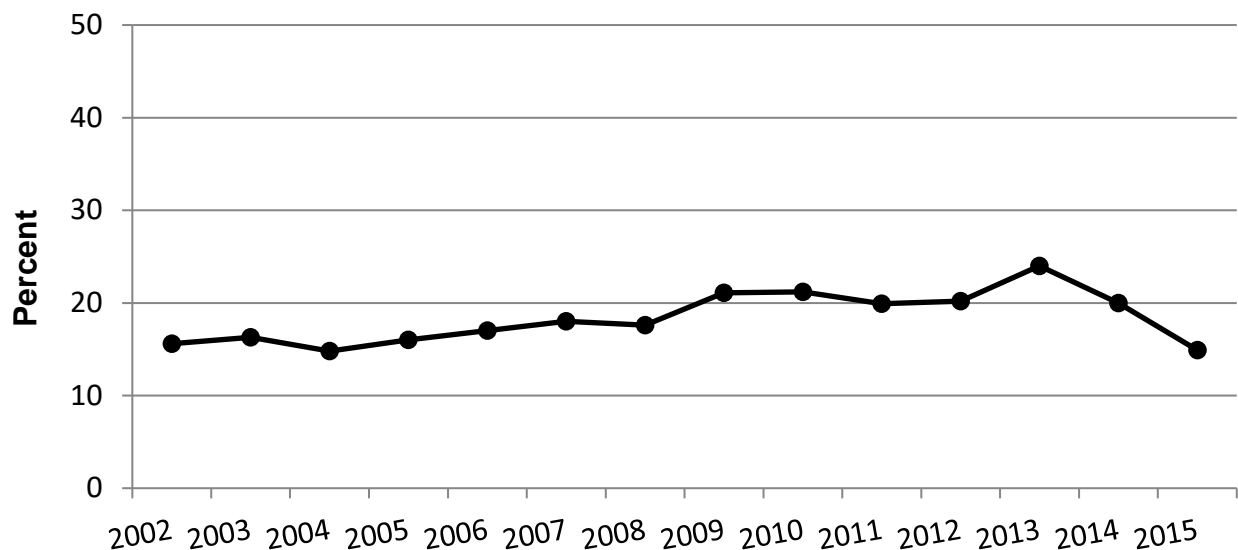
**Note:** For this measure, lower rates are better.

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## Care Affordability

### Worsening Measures

**Graph 44. Worsening: People without a usual source of care who indicated a financial or insurance reason for not having a source of care, 2002-2015**



**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2015.

**Note:** For this measure, lower rates are better.

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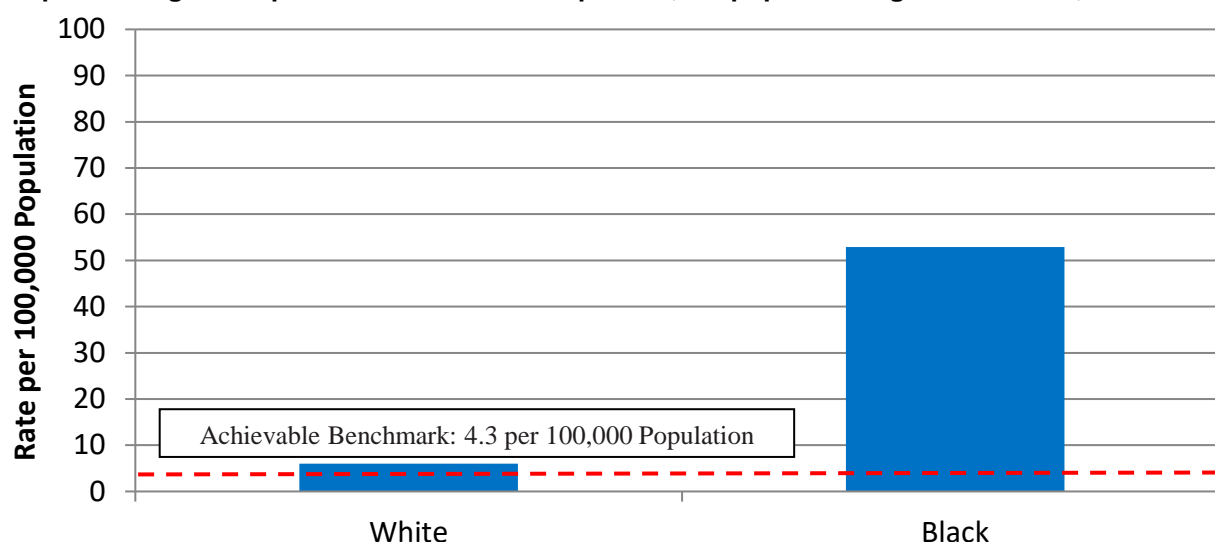
## Trends in Disparities

Disparities are grouped by race, ethnicity, and geographic location. Improving disparities are disparities that are narrowing. Worsening disparities are disparities that are widening.

### Race

#### Largest Disparities for Blacks

**Graph 45. Largest Disparities: New HIV cases per 100,000 population age 13 and over, 2016**

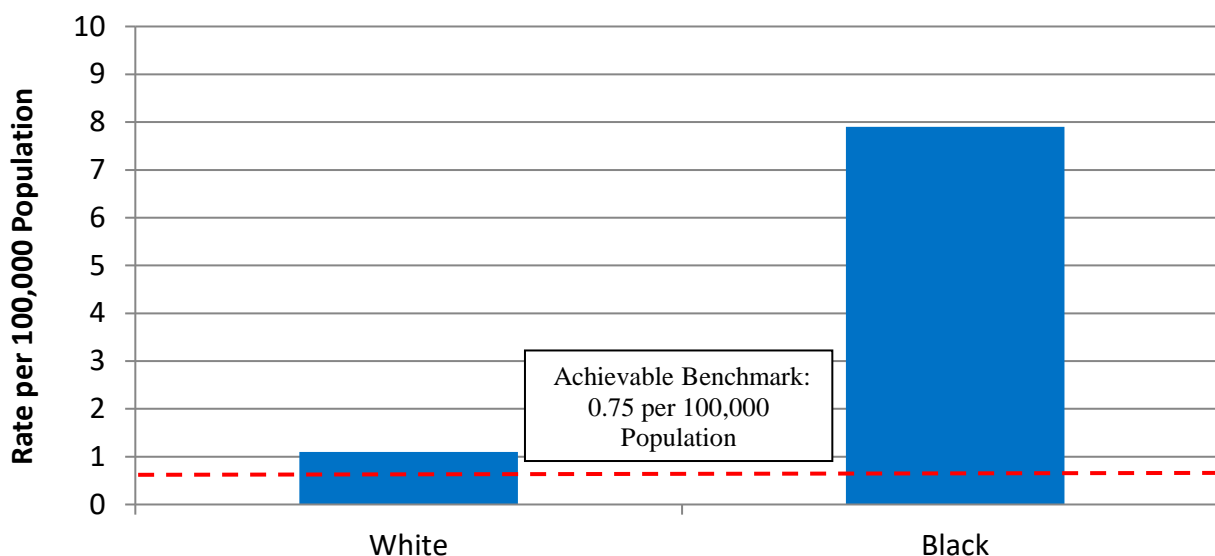


Source: National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of HIV/AIDS, National HIV/AIDS Surveillance System, 2016.

**Note:** For this measure, lower rates are better.

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**Graph 46. Largest Disparities: HIV-infection deaths per 100,000 population, 2015**

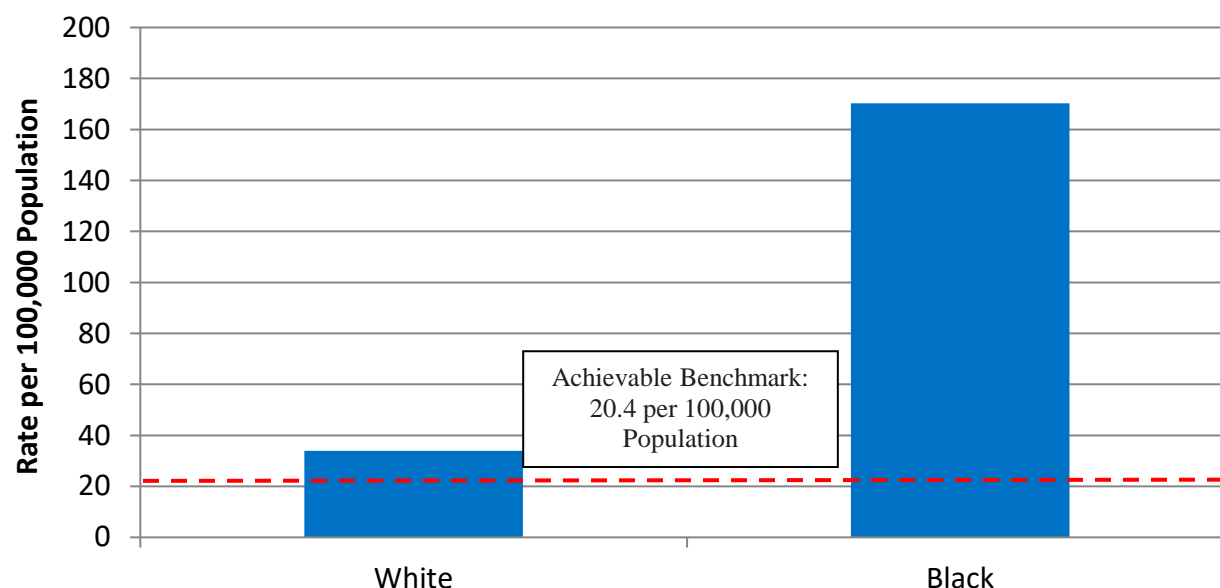


Source: Centers for Disease Control and Prevention, National Vital Statistics System - Mortality, 2015.

**Note:** For this measure, lower rates are better.

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**Graph 47: Largest Disparities: Potentially avoidable admissions for hypertension per 100,000 population age 18 and over, by race/ethnicity, 2015**



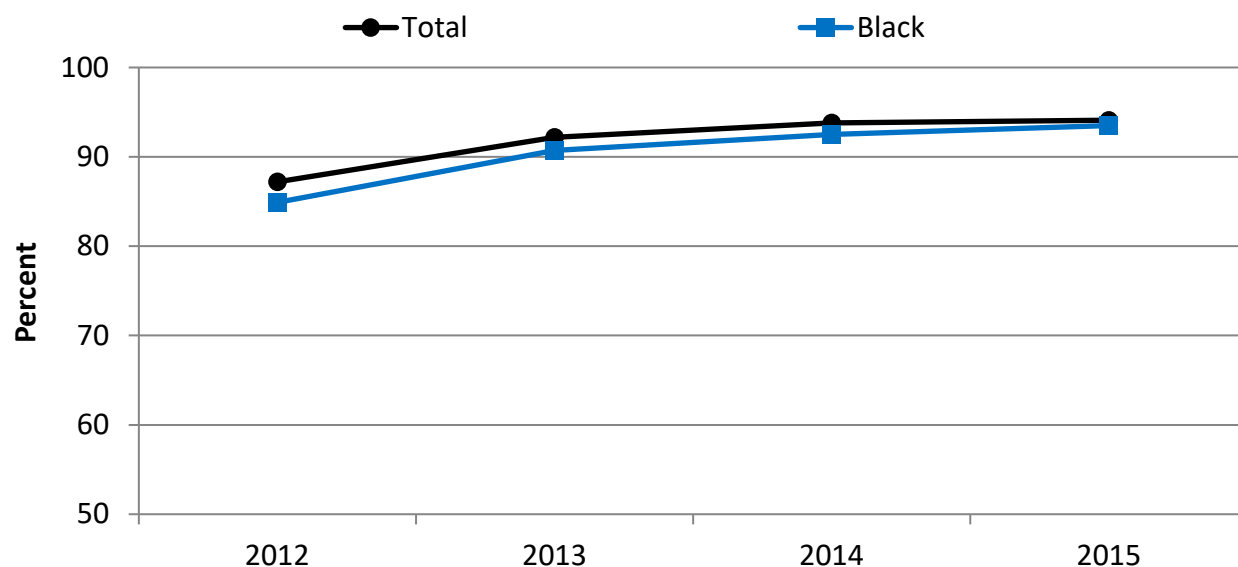
**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases, 2001-2015, weighted to provide national estimates using the same methodology as the HCUP Nationwide Inpatient Sample; and the AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included States, and special handling of 2015 data, 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.

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### Largest Improvements for Blacks

**Graph 48. Improving: Hospital patients who received influenza vaccination, 2012-2015**

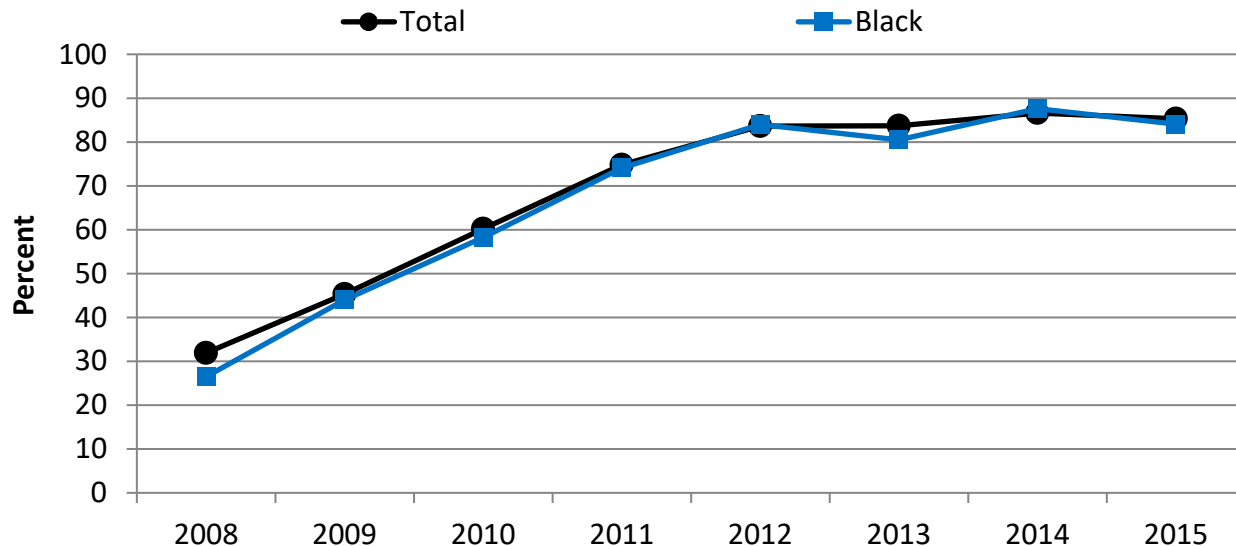


**Source:** Centers for Medicare & Medicaid Services, Clinical Data Warehouse, 2012-2015.

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**Graph 49. Improving: Adolescents ages 16-17 years who received 1 or more doses of tetanus-diphtheria-acellular pertussis (Tdap) vaccine, 2008-2015**

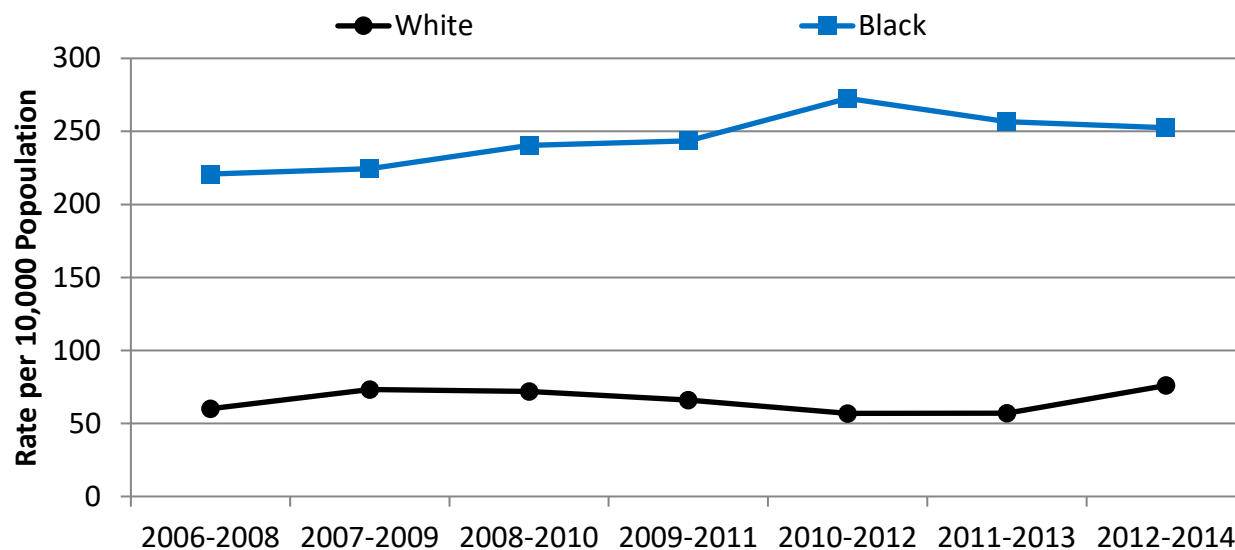


**Source:** Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases and National Center for Health Statistics, National Immunization Survey – Teen, 2008-2015.

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### Gap Between Blacks and Whites

**Graph 50. Worsening: Emergency department visits for asthma, children ages 2-19, 2006-2008 to 2012-2014**

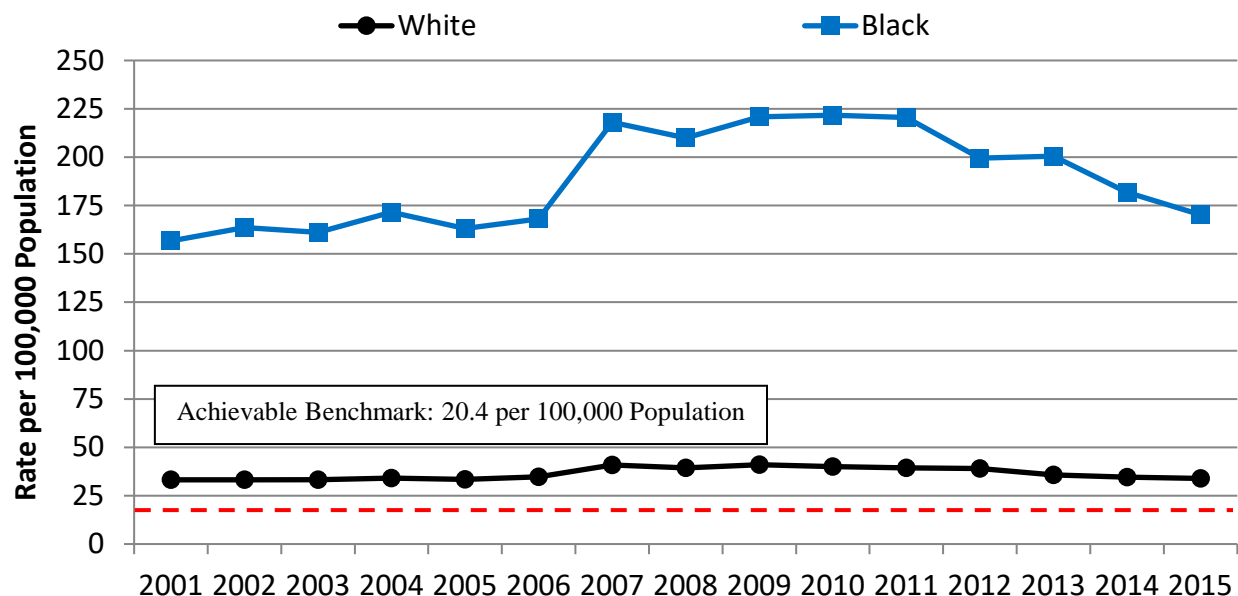


**Source:** Centers for Disease Control and Prevention, National Hospital Ambulatory Medical Care Survey, 2006-2008 to 2012-2014.

**Note:** For this measure, lower rates are better.

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**Graph 51. Worsening. Potentially avoidable admissions for hypertension per 100,000 population age 18 and over, 2000-2015**

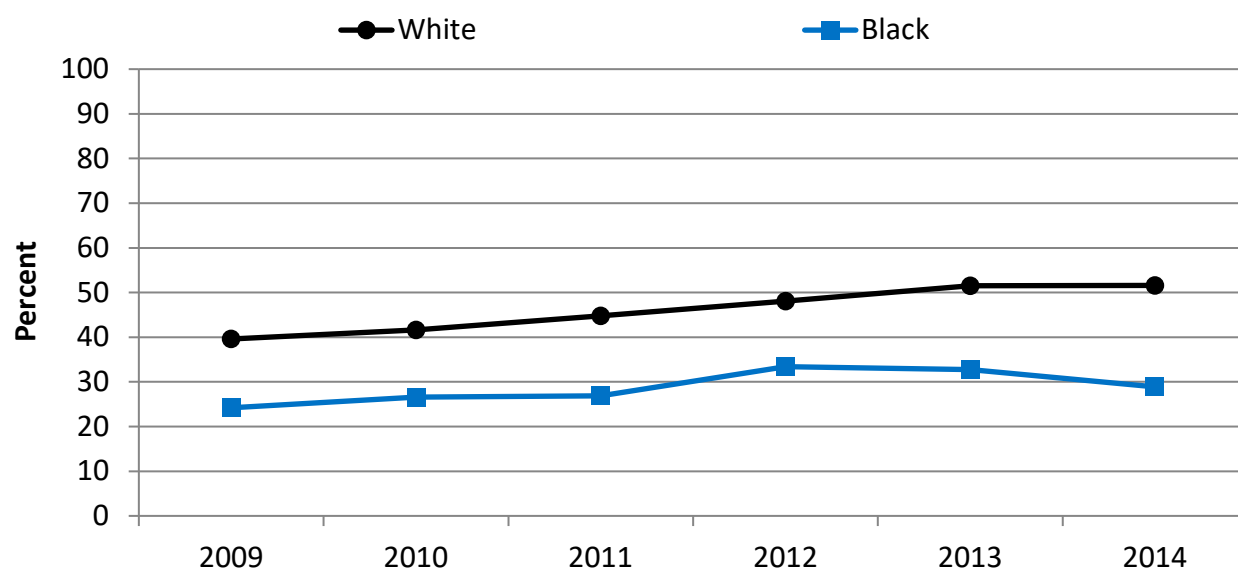


**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and the AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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**Graph 52. Worsening: Infants who received exclusive breastfeeding through 3 months, 2009-2014**

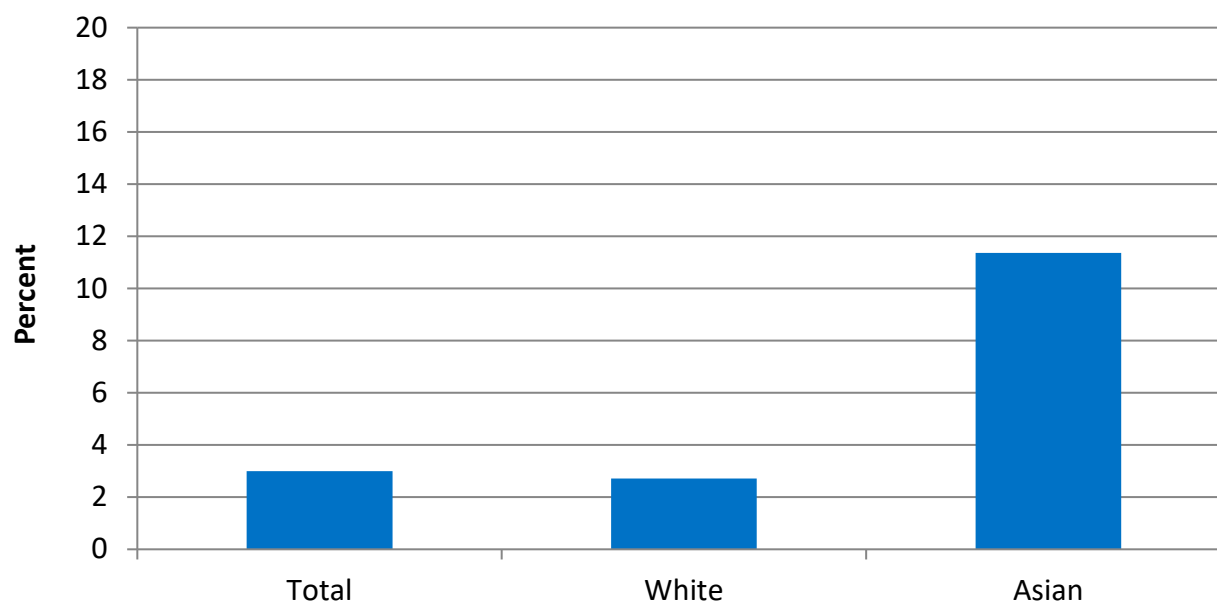


**Source:** Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases and National Center for Health Statistics, National Immunization Survey, 2009-2014.

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### Largest Disparities for Asians

**Graph 53. Largest Disparities: Hospital patients with an anticoagulant-related adverse drug event to low-molecular-weight heparin (LMWH) and factor Xa, age 18 and over, 2015**

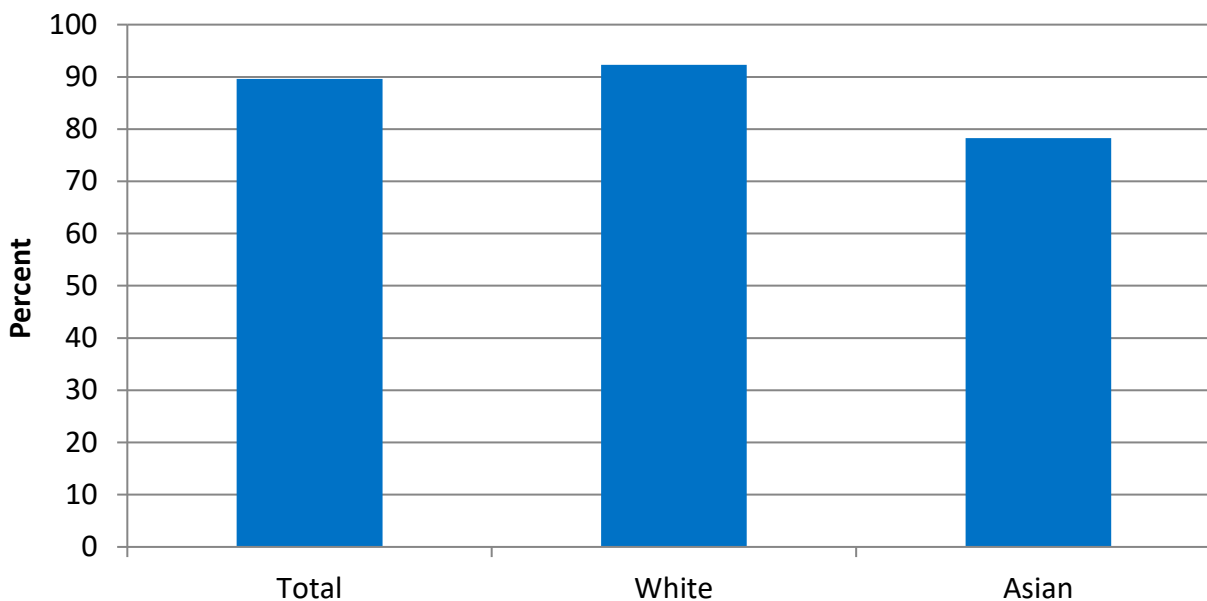


**Source:** Agency for Healthcare Research and Quality and Centers for Medicare & Medicaid Services, Medicare Patient Safety Monitoring System, 2015.

**Note:** For this measure, lower rates are better.

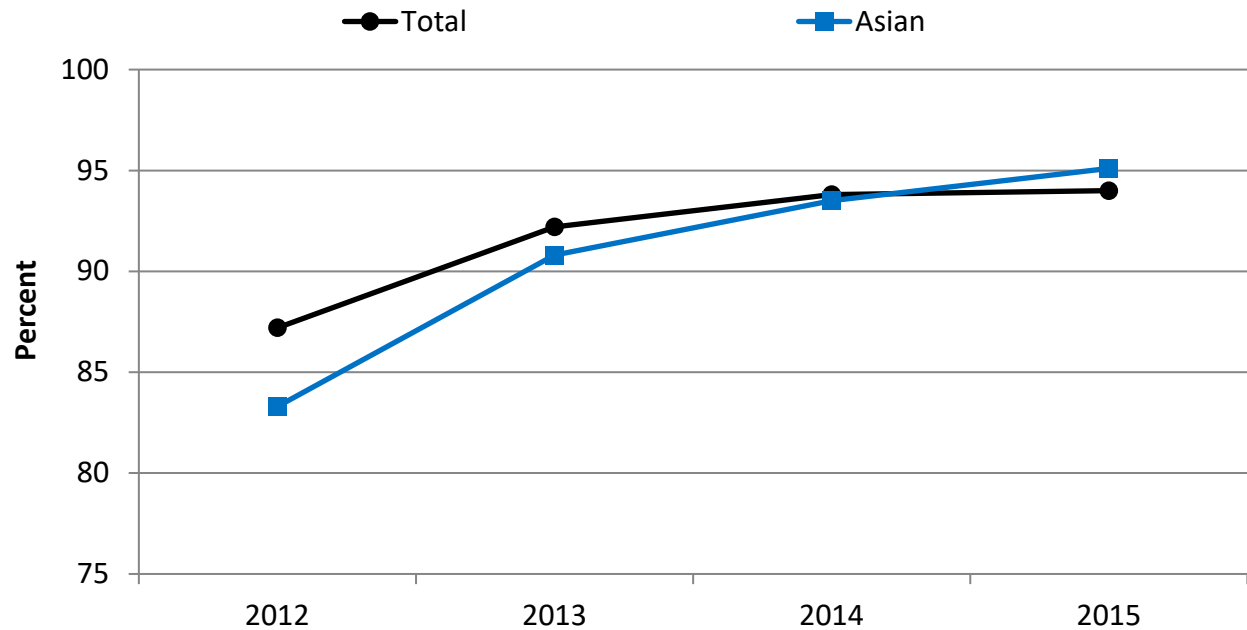
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**Graph 54. Largest Disparities: Adults with limited English proficiency and a usual source of care that offered language assistance, 2015**



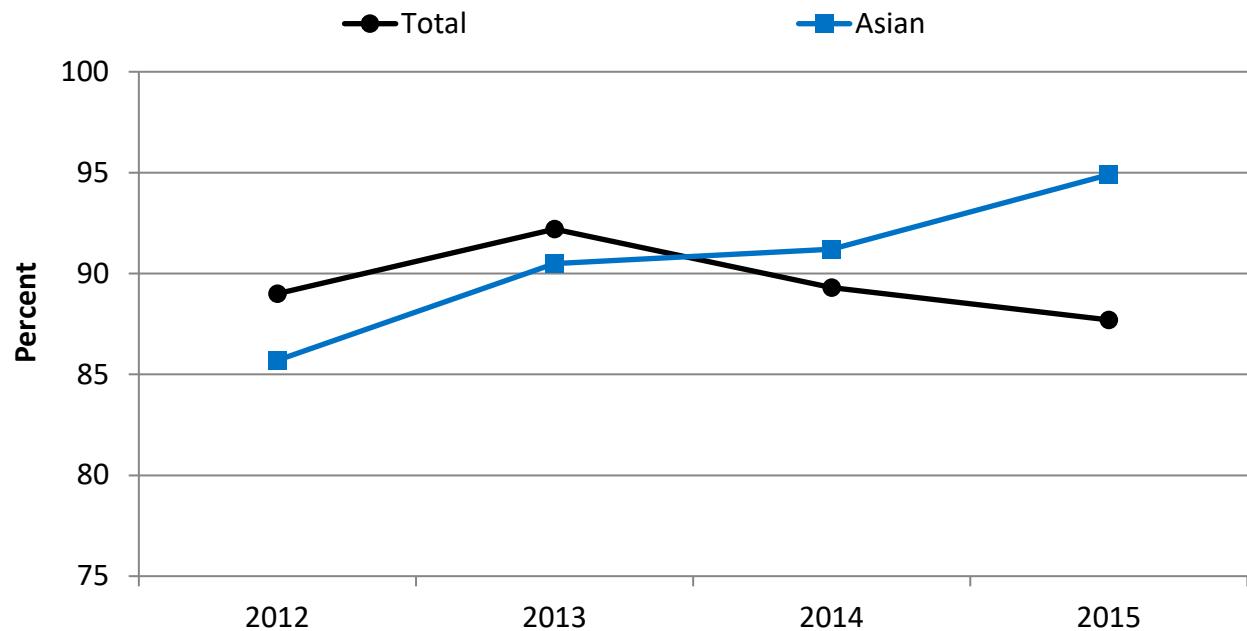
**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2015.

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**Largest Improvements for Asians****Graph 55. Improving: Hospital patients who received influenza vaccination, 2012-2015**

**Source:** Centers for Medicare & Medicaid Services, Clinical Data Warehouse, 2012-2015.

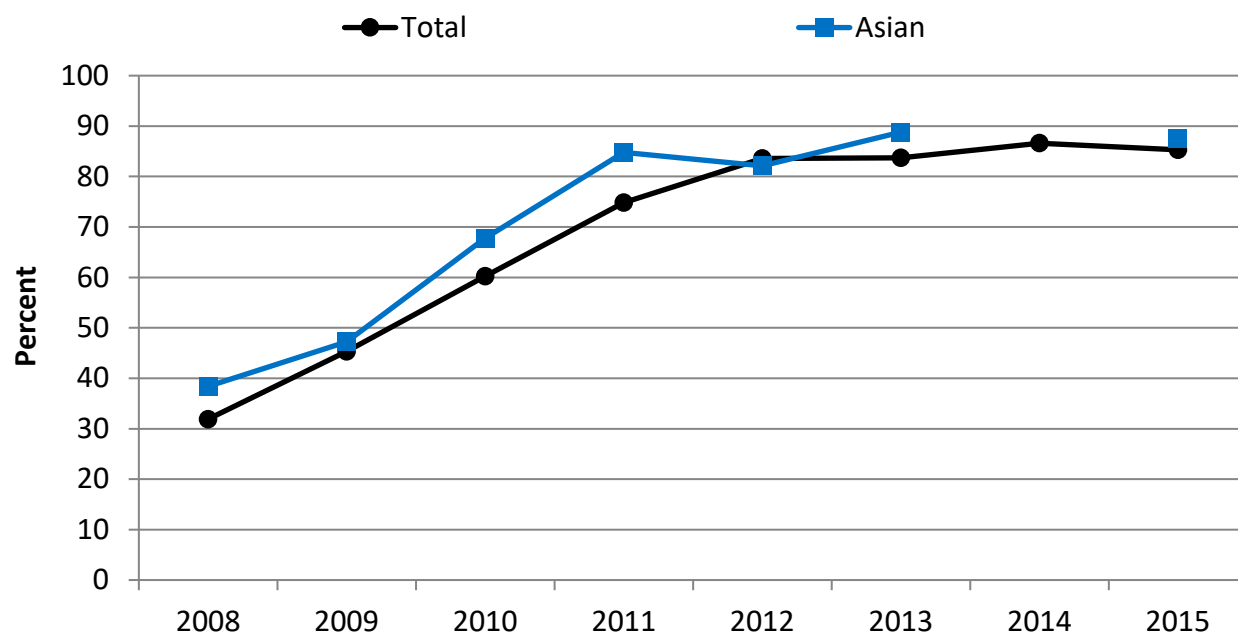
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**Graph 56. Improving: Hospital patients who received pneumococcal immunization, 2012-2015**

**Source:** Centers for Medicare & Medicaid Services, Clinical Data Warehouse, 2012-2015.

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**Graph 57. Improving: Adolescents ages 16-17 years who received 1 or more doses of tetanus-diphtheria-acellular pertussis (Tdap) vaccine, 2008-2015**



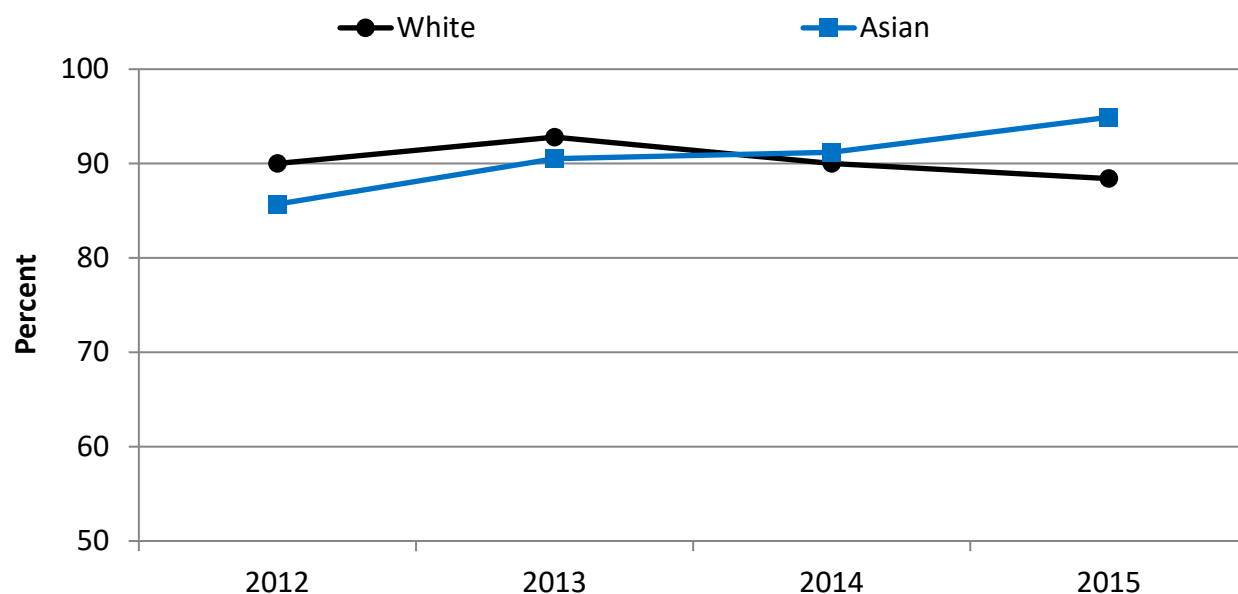
**Source:** Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases and National Center for Health Statistics, National Immunization Survey – Teen, 2008-2015.

**Note:** Asian data do not meet the criteria for statistical reliability, data quality, or confidentiality for 2014.

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### Gap Between Asians and Whites

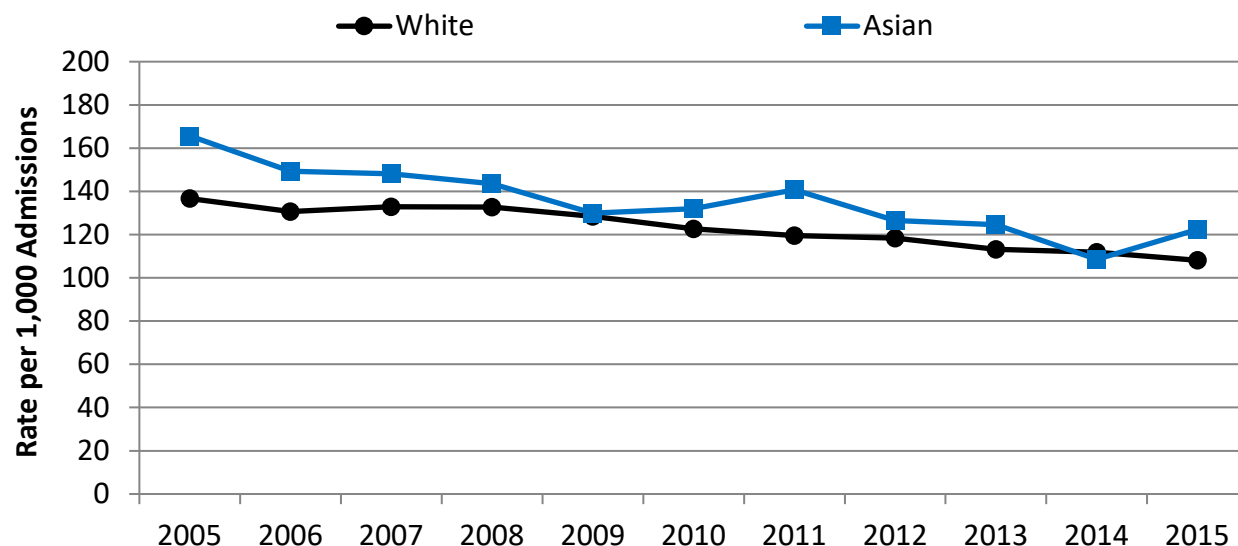
**Graph 58. Improving: Hospital patients who received pneumococcal immunization, 2012-2015**



**Source:** Centers for Medicare & Medicaid Services, Clinical Data Warehouse, 2012-2015.

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**Graph 59. Improving: Deaths per 1,000 elective-surgery admissions having developed specified complications of care during hospitalization, ages 18-89 or obstetric admissions, 2005-2015**

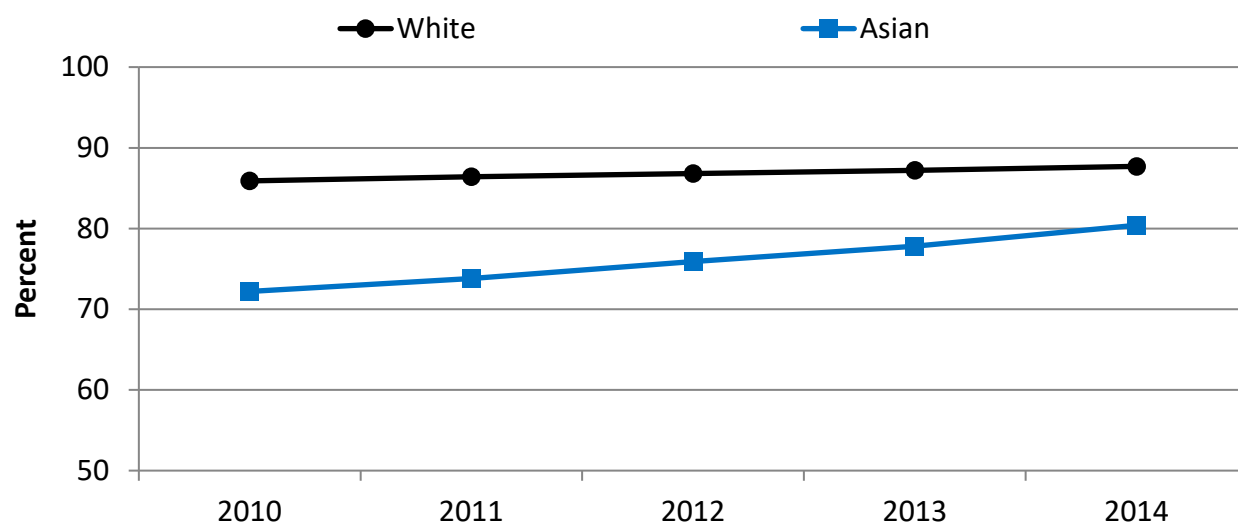


**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and the AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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**Graph 60. Improving: People age 13 years and over living with HIV who know their serostatus, 2010-2014**

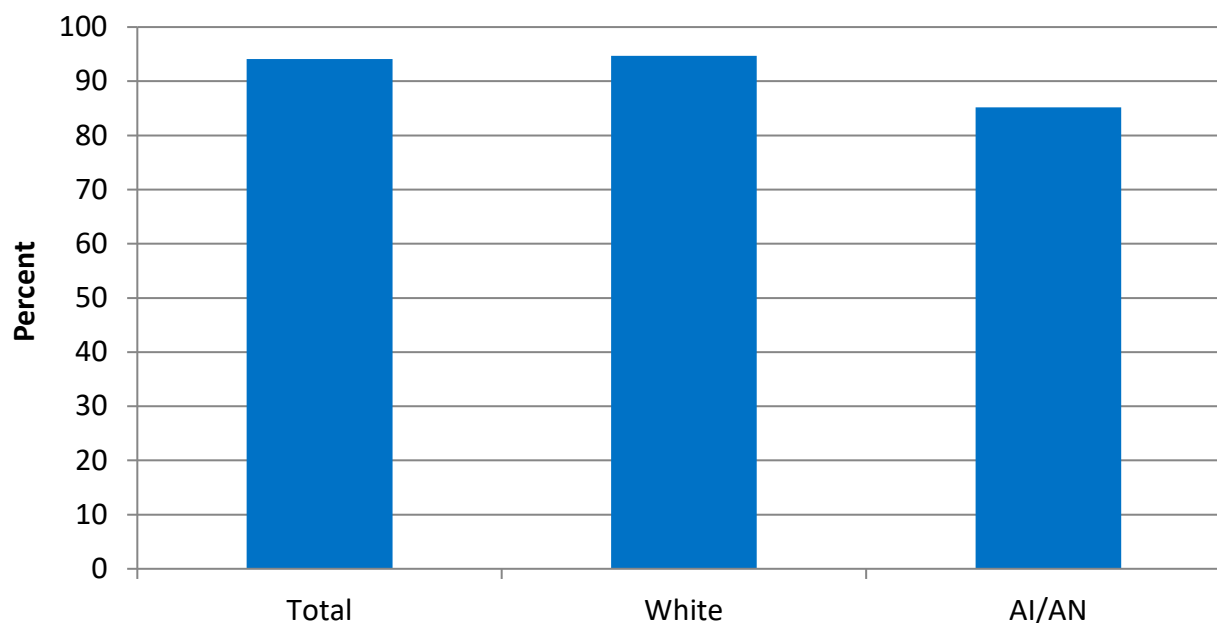


**Source:** National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of HIV/AIDS, National HIV/AIDS Surveillance System, 2010-2014.

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## Largest Disparities for American Indians and Alaska Natives

Graph 61. Largest Disparities: Hospital patients who received influenza vaccination, 2015

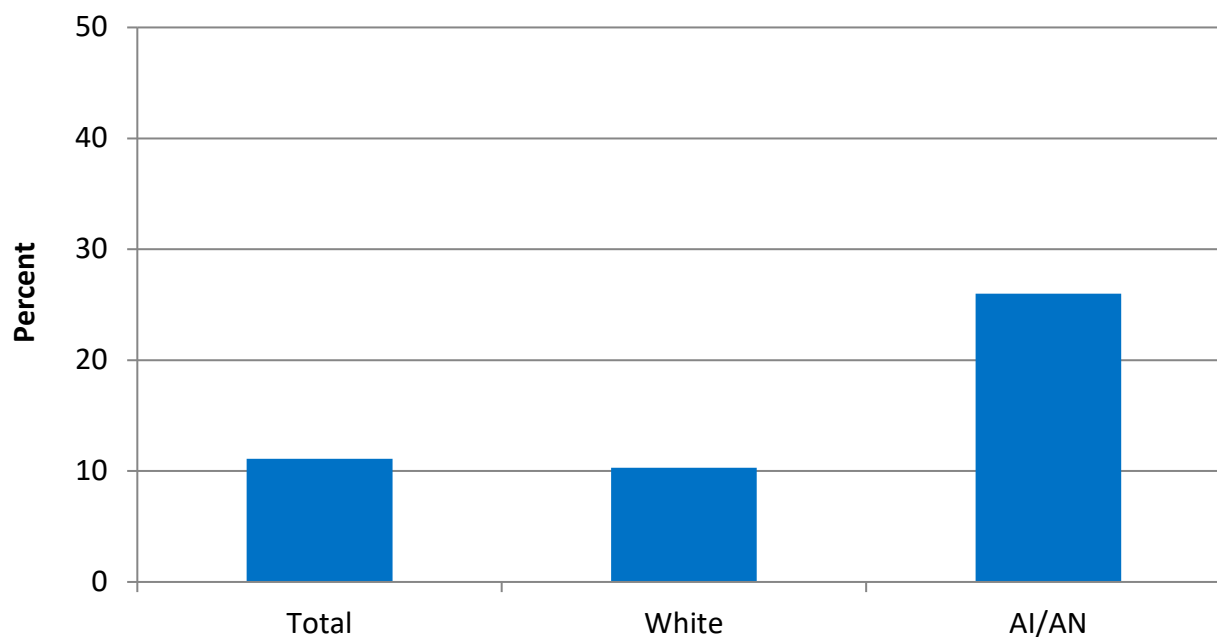


**Key:** AI/AN = American Indian or Alaska Native.

**Source:** Centers for Medicare & Medicaid Services, Clinical Data Warehouse, 2015.

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Graph 62. Largest Disparities: Rating of health care 0-6 on a scale from 0 to 10 (best grade) by adults who had a doctor's office or clinic visit in the last 12 months, 2015



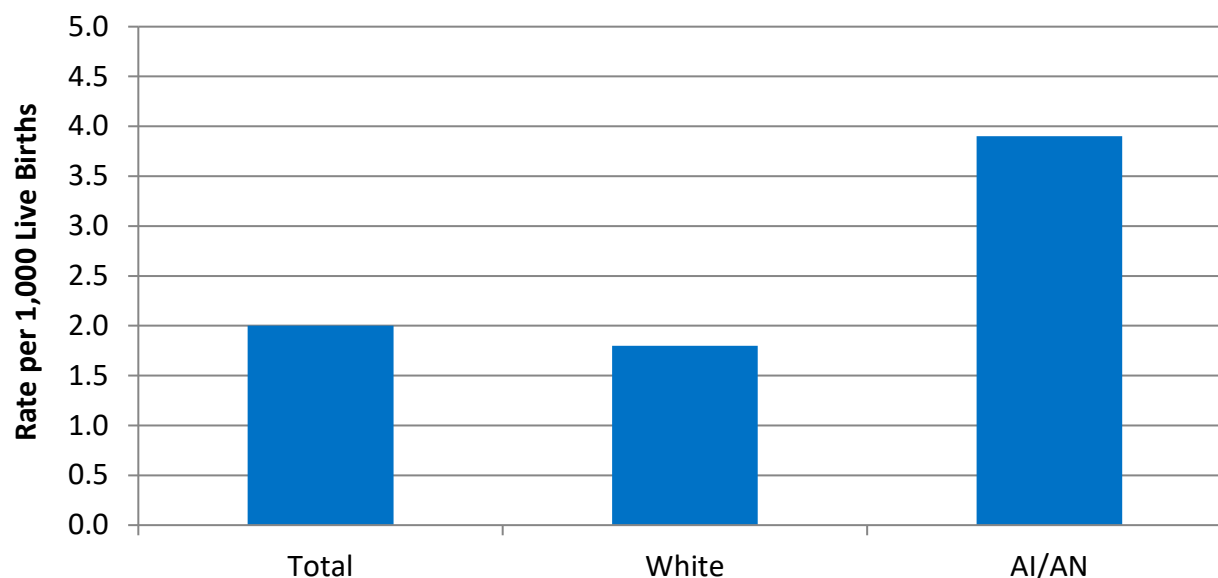
**Key:** AI/AN = American Indian or Alaska Native.

**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2015.

**Note:** For this measure, lower rates are better.

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**Graph 63. Largest Disparities: Infant mortality per 1,000 live births, birth weight more than 2,499 grams, 2014**



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

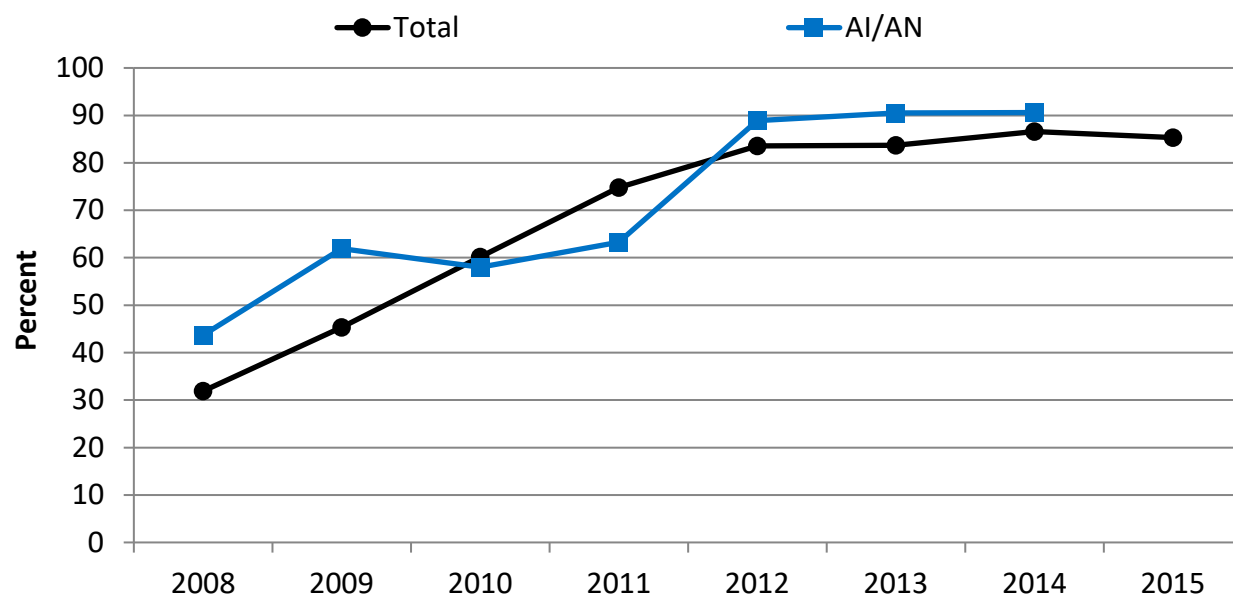
**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System - Linked Birth and Infant Death Data, 2014.

**Note:** For this measure, lower rates are better.

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### Improvements for American Indians and Alaska Natives

**Graph 64. Improving: Adolescents ages 16-17 years who received 1 or more doses of tetanus-diphtheria-acellular pertussis (Tdap) vaccine, 2008-2015**



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

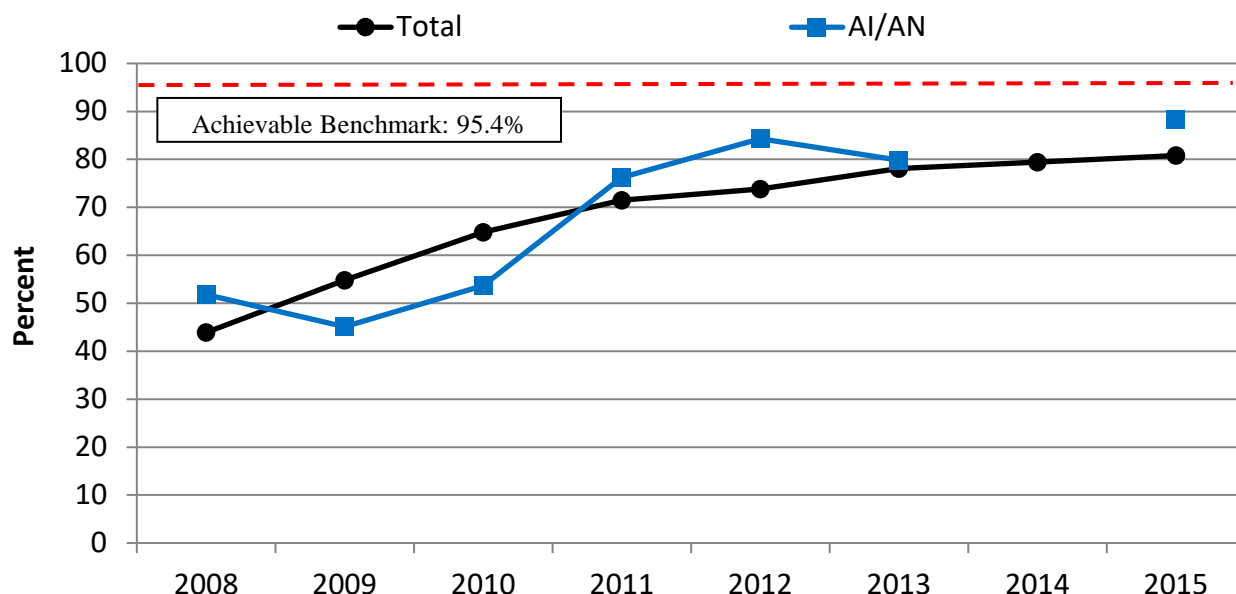
**Source:** Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases and National Center for Health Statistics, National Immunization Survey – Teen, 2008-2015.

**Note:** AI/AN data do not meet the criteria for statistical reliability, data quality, or confidentiality for 2015.

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**Graph 65. Improving: Adolescents ages 13-15 years who received 1 or more doses of meningococcal conjugate vaccine, 2008-2015**



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

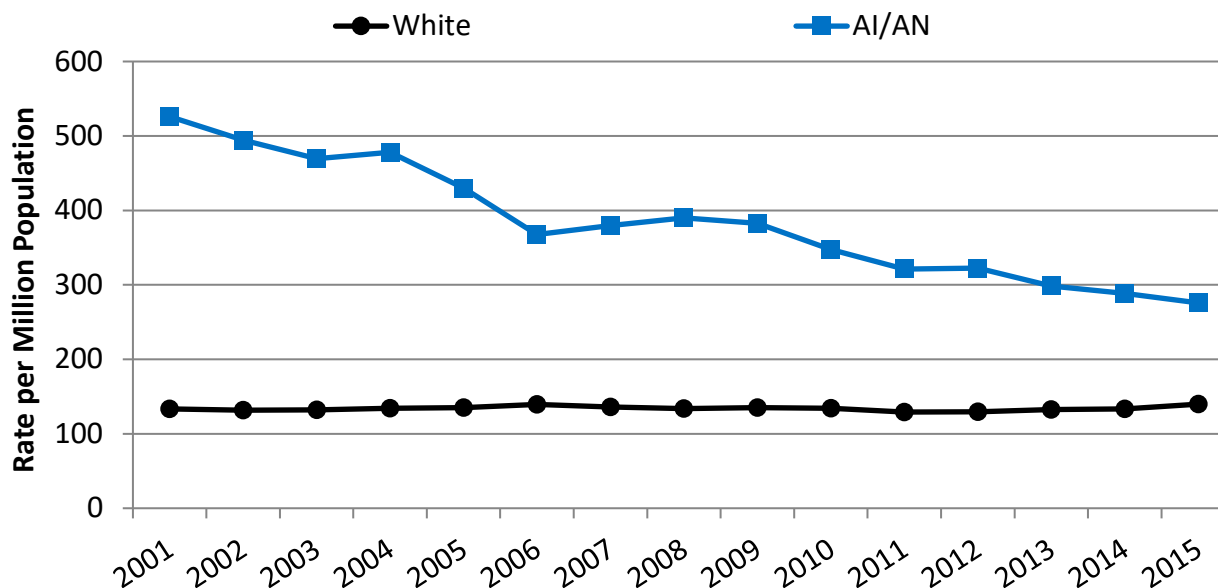
**Source:** Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases and National Center for Health Statistics, National Immunization Survey – Teen, 2008-2015.

**Note:** AI/AN data do not meet the criteria for statistical reliability, data quality, or confidentiality for 2014.

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### Gap Between American Indians and Alaska Natives and Whites

**Graph 66. Improving: Adjusted incident rates of end stage renal disease due to diabetes per million population, 2001-2015**



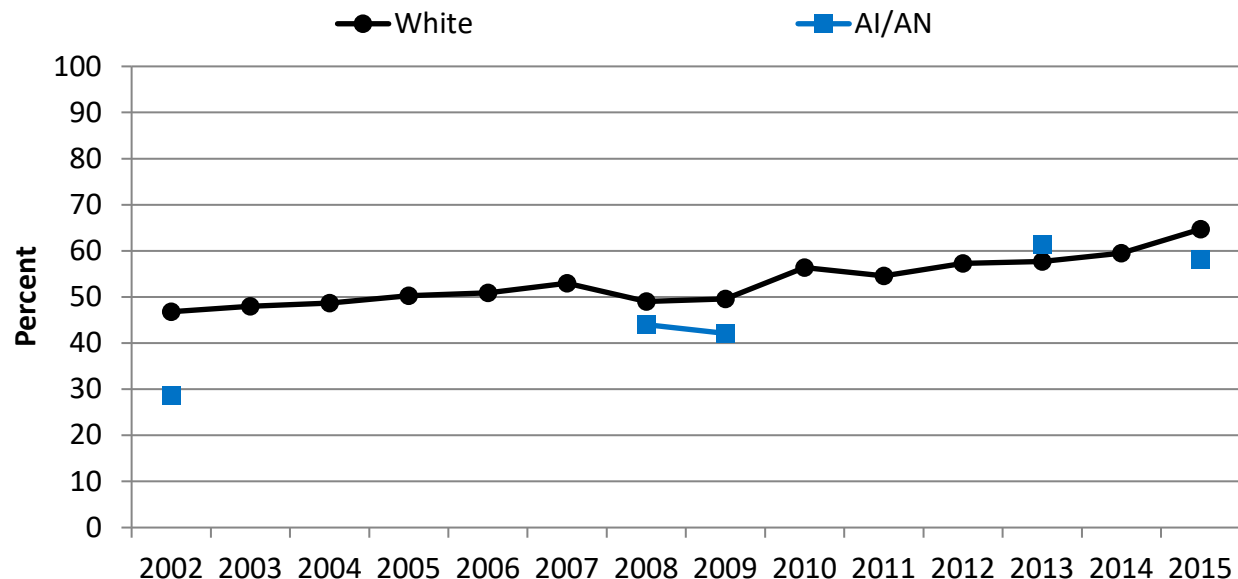
**Key:** AI/AN = American Indian or Alaska Native.

**Source:** National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, U.S. Renal Data System, 2001-2015.

**Note:** For this measure, lower rates are better.

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**Graph 67. Improving: Children ages 2-17 for whom a health provider gave advice within the past 2 years about healthy eating, 2002-2015**



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

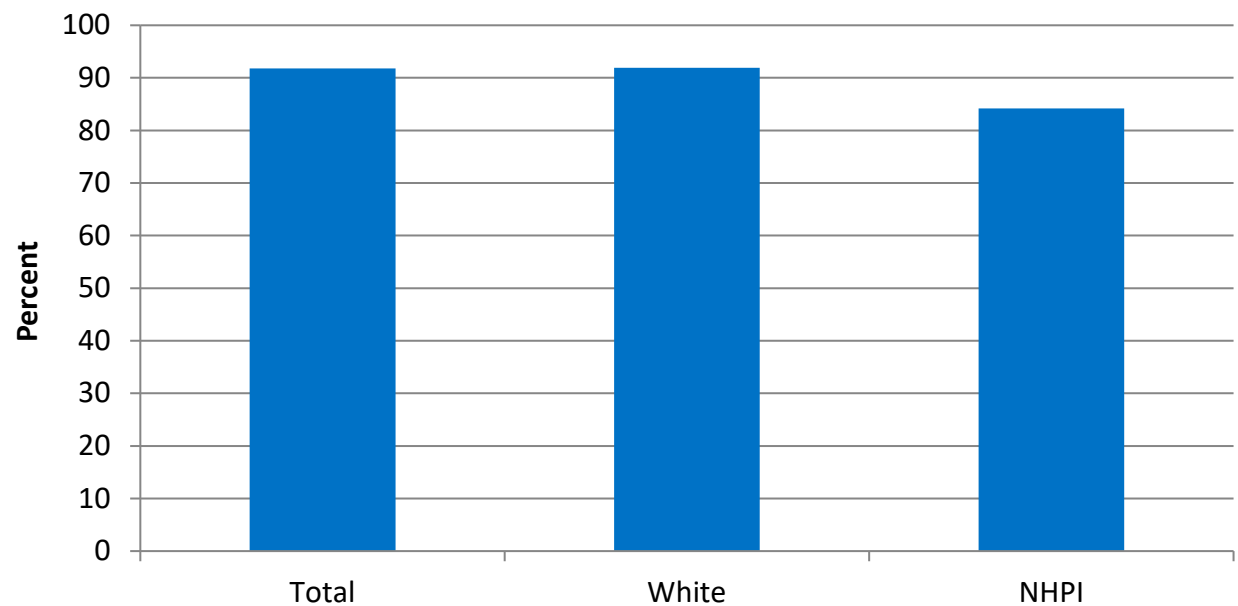
**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2002-2015.

**Note:** AI/AN data do not meet the criteria for statistical reliability, data quality, or confidentiality for 2003-2007, 2010-2012, and 2014.

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### Largest Disparities for Native Hawaiians/Pacific Islanders

**Graph 68. Largest Disparities: Adults who received a blood pressure measurement in the last 2 years and can state whether their blood pressure was normal or high, 2014**

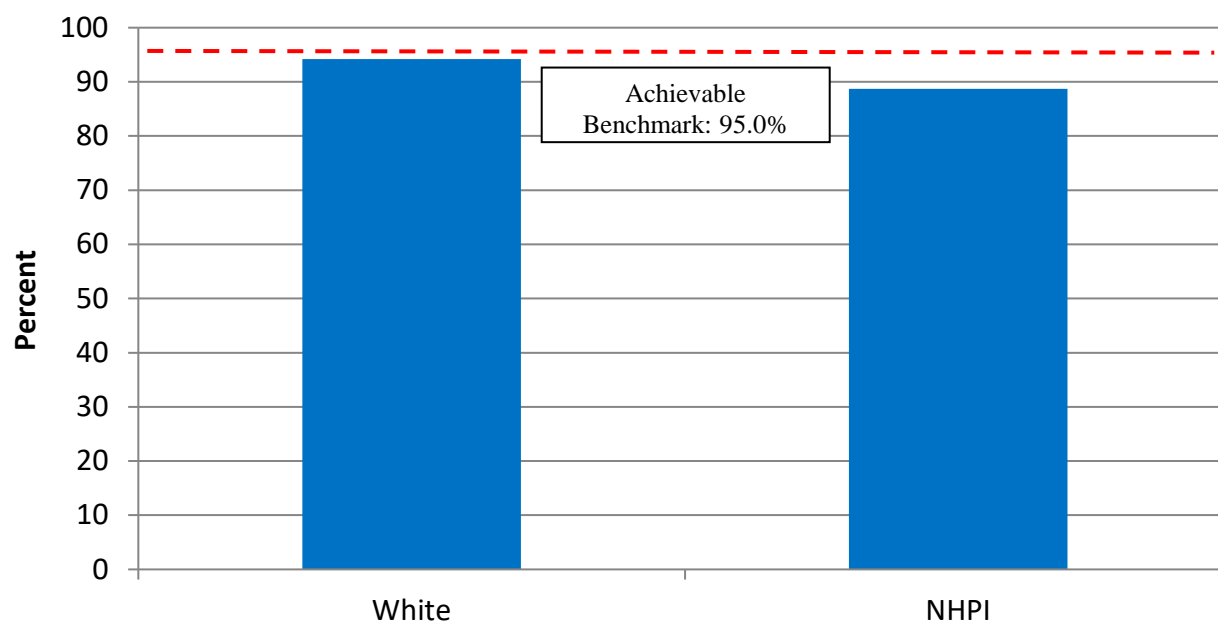


**Key:** NHPI = Native Hawaiian/Pacific Islander.

**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2014.

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**Graph 69. Largest Disparities: Adults who reported that home health providers always treated them with courtesy and respect in the last 2 months, 2016**



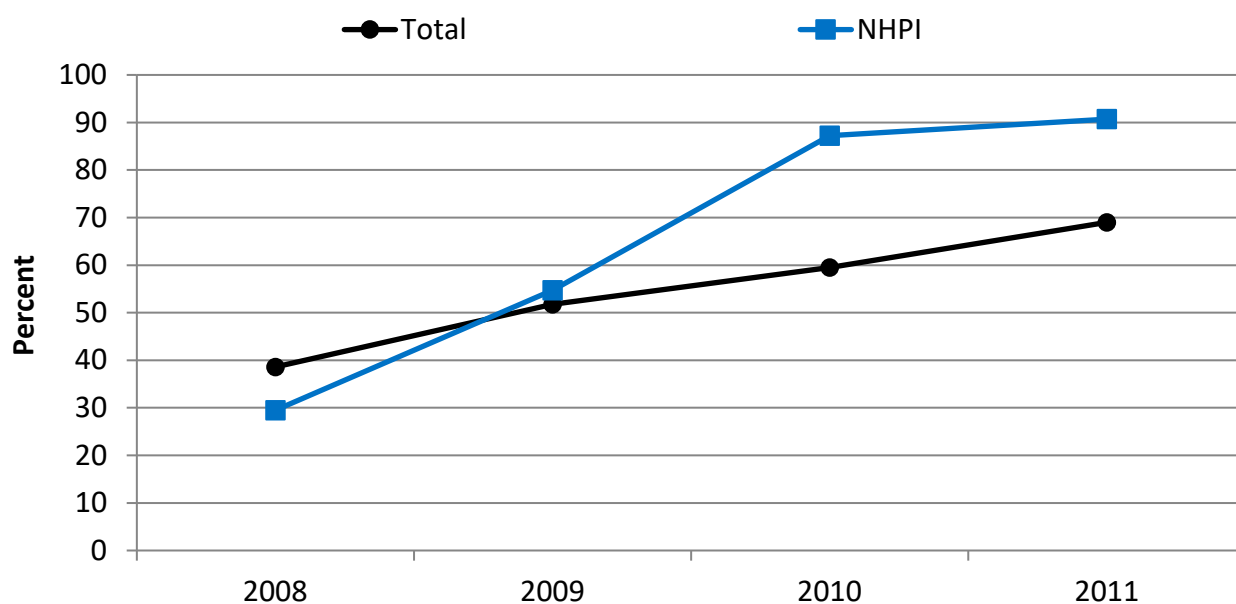
**Key:** NHPI = Native Hawaiian/Pacific Islander.

**Source:** Centers for Medicare & Medicaid Services, Home Health Consumer Assessment of Healthcare Providers and Systems, 2016.

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### Improvements for Native Hawaiians/Pacific Islanders

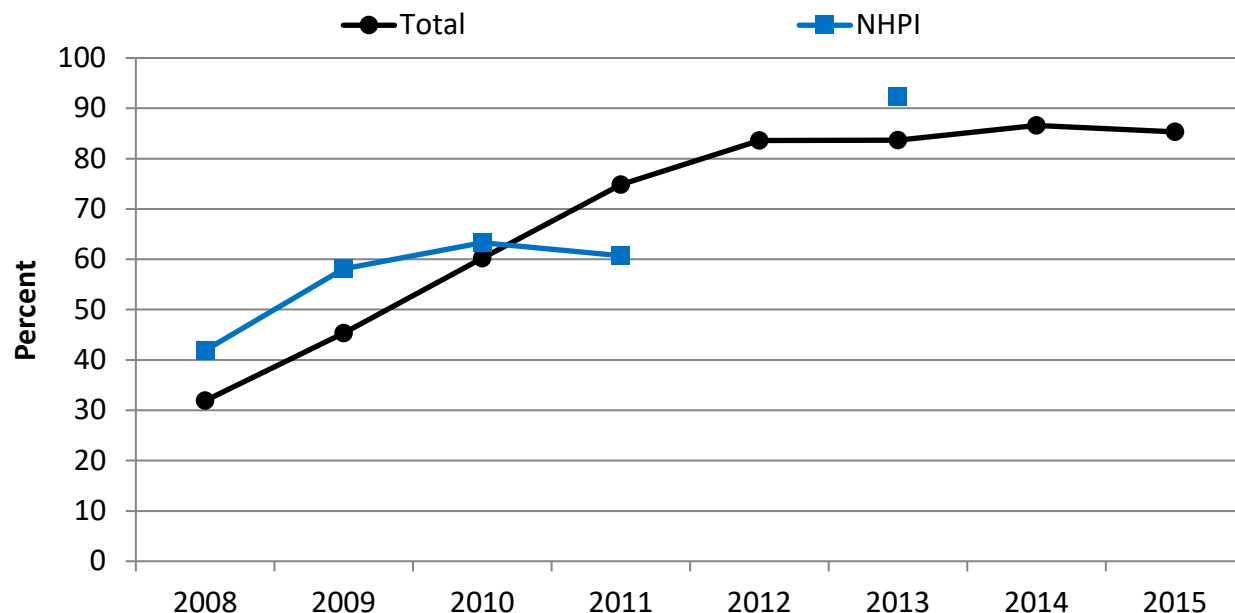
**Graph 70. Improving: Adolescents ages 16-17 who received 1 or more doses of meningococcal conjugate vaccine, 2008-2011**



**Source:** Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases and National Center for Health Statistics, National Immunization Survey – Teen, 2008-2011.

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**Graph 71. Improving: Adolescents ages 16-17 years who received 1 or more doses of tetanus-diphtheria-acellular pertussis (Tdap) vaccine, 2008-2015**



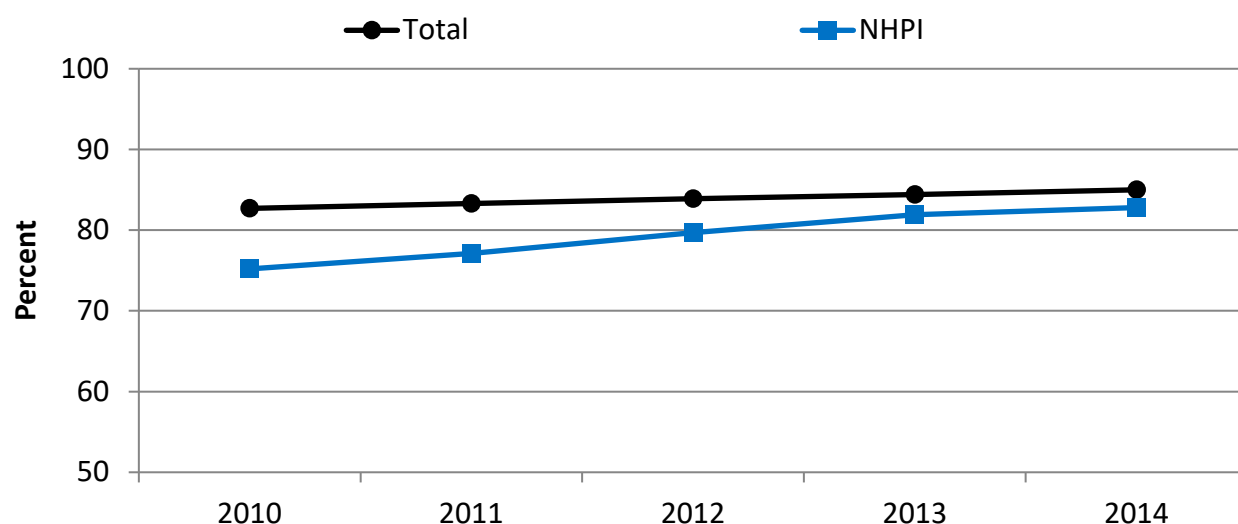
Key: NHPI = Native Hawaiian/Pacific Islander.

**Source:** Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases and National Center for Health Statistics, National Immunization Survey – Teen, 2008-2015.

**Note:** NHPI data do not meet the criteria for statistical reliability, data quality, or confidentiality for 2014 and 2015. Data not analyzed for 2012.

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**Graph 72. Improving: People age 13 years and over living with HIV who know their serostatus, 2010-2014**

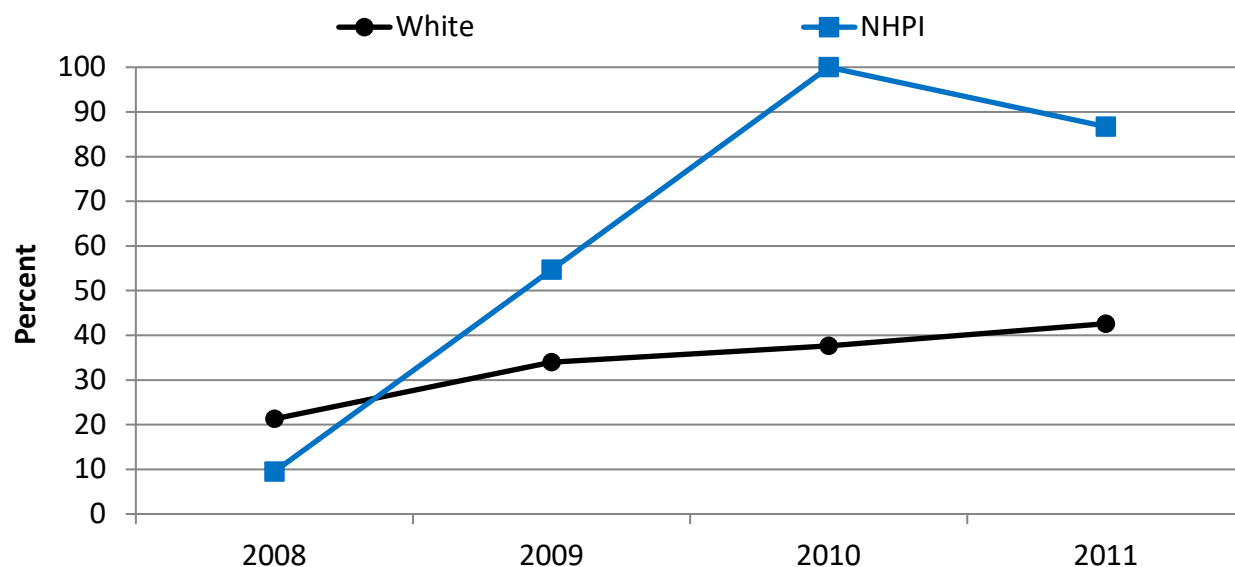


**Source:** National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Division of HIV/AIDS, National HIV/AIDS Surveillance System, 2010-2014.

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### Gap Between Native Hawaiians/Pacific Islanders and Whites

Graph 73. Improving: Adolescent females ages 16-17 years who received 3 or more doses of human papillomavirus vaccine, 2008-2011



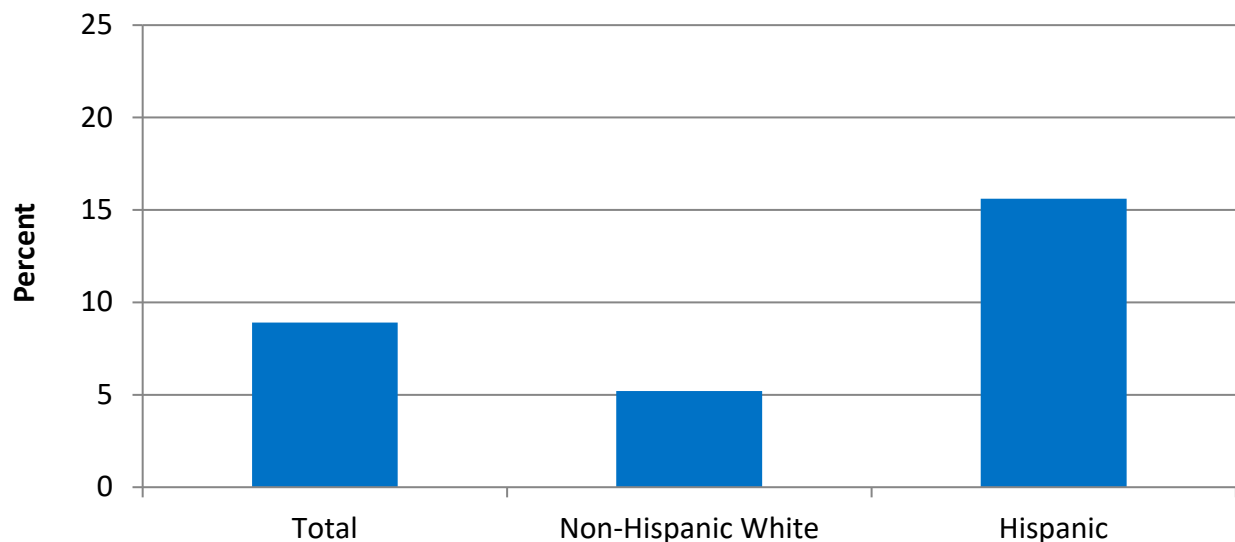
**Source:** Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases and National Center for Health Statistics, National Immunization Survey – Teen, 2008-2011.

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### Ethnicity

#### Largest Disparities for Hispanics

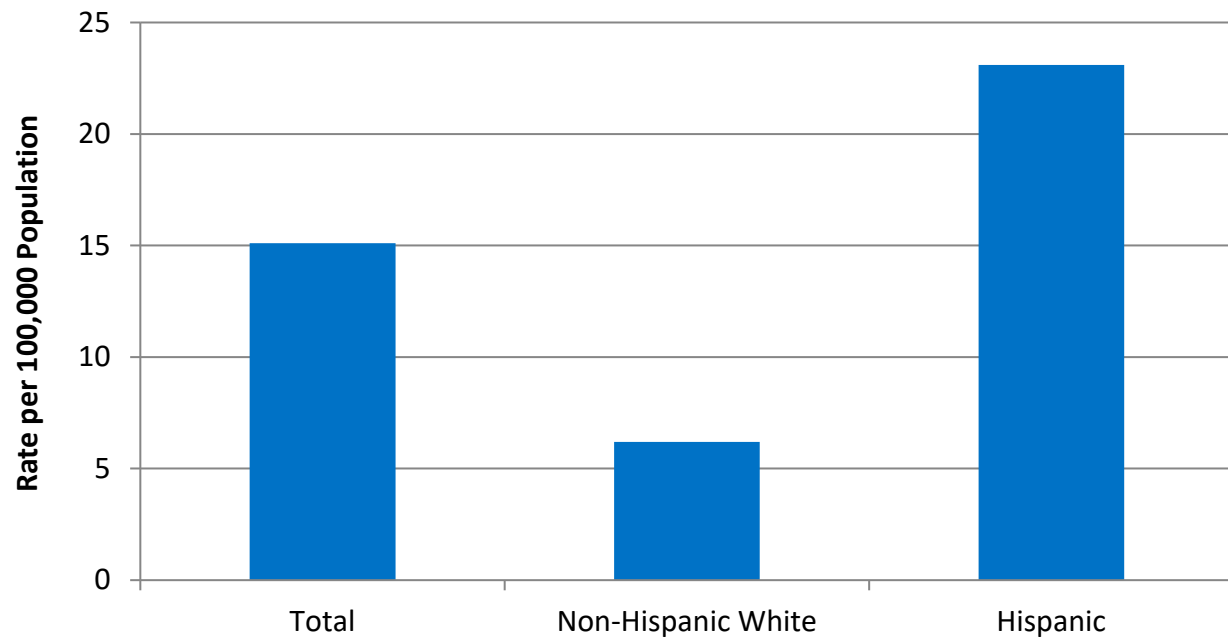
Graph 74. Largest Disparities: Children ages 2-5 with obesity, 2011-2014



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

**Note:** For this measure, lower rates are better.

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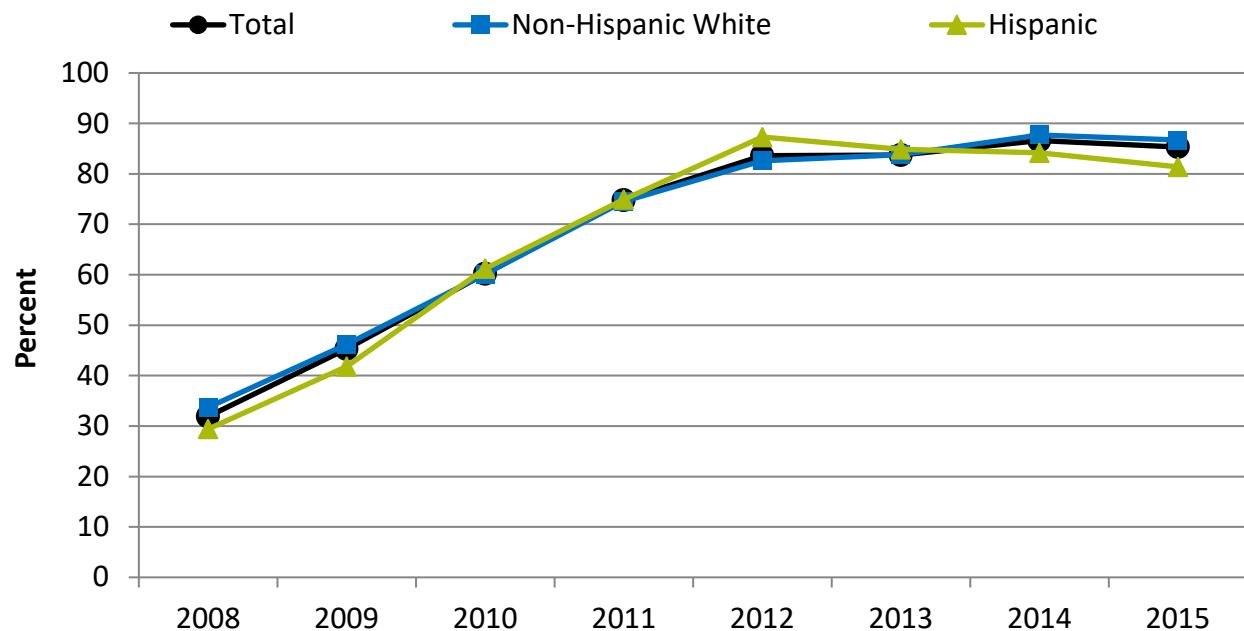
**Graph 75. Largest Disparities: New HIV cases per 100,000 population age 13 and over, 2014**

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

**Note:** For this measure, lower rates are better.

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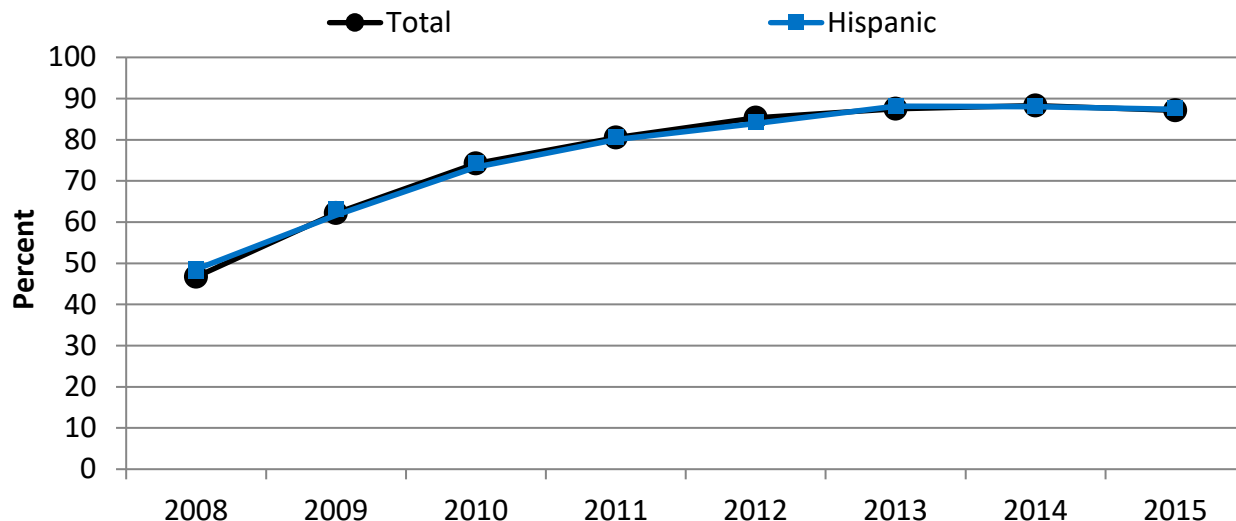
### Improvements for Hispanics

**Graph 76. Improving: Adolescents ages 16-17 years who received 1 or more doses of tetanus-diphtheria-acellular pertussis (Tdap) vaccine, 2008-2015**

**Source:** Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases and National Center for Health Statistics, National Immunization Survey – Teen, 2008-2015.

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**Graph 77. Improving: Adolescents ages 13-15 years who received 1 or more doses of tetanus-diphtheria-acellular pertussis (Tdap) vaccine, 2008-2015**

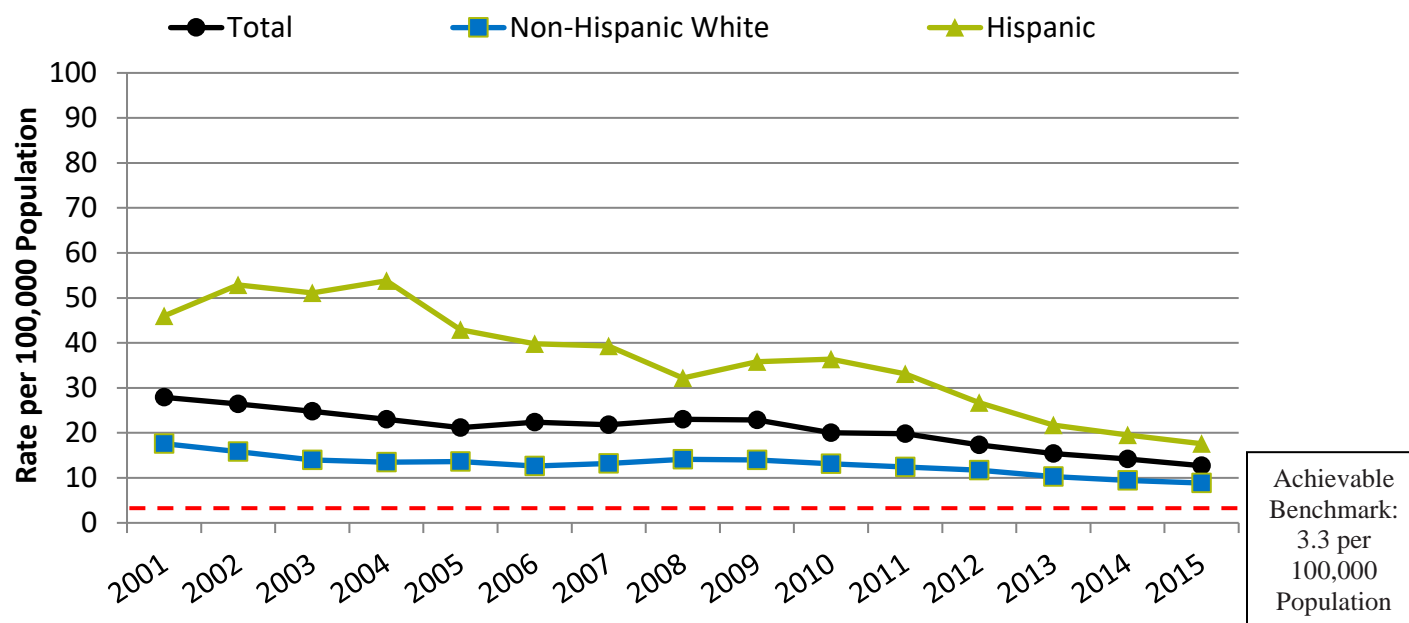


**Source:** Centers for Disease Control and Prevention, National Center for Immunizations and Respiratory Diseases and National Center for Health Statistics, National Immunization Survey – Teen, 2008-2015.

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### Gap Between Hispanics and Non-Hispanic Whites

**Graph 78. Improving: Potentially avoidable hospital admissions for uncontrolled diabetes without complications per 100,000 population, adults age 18 and over, 2001-2015**

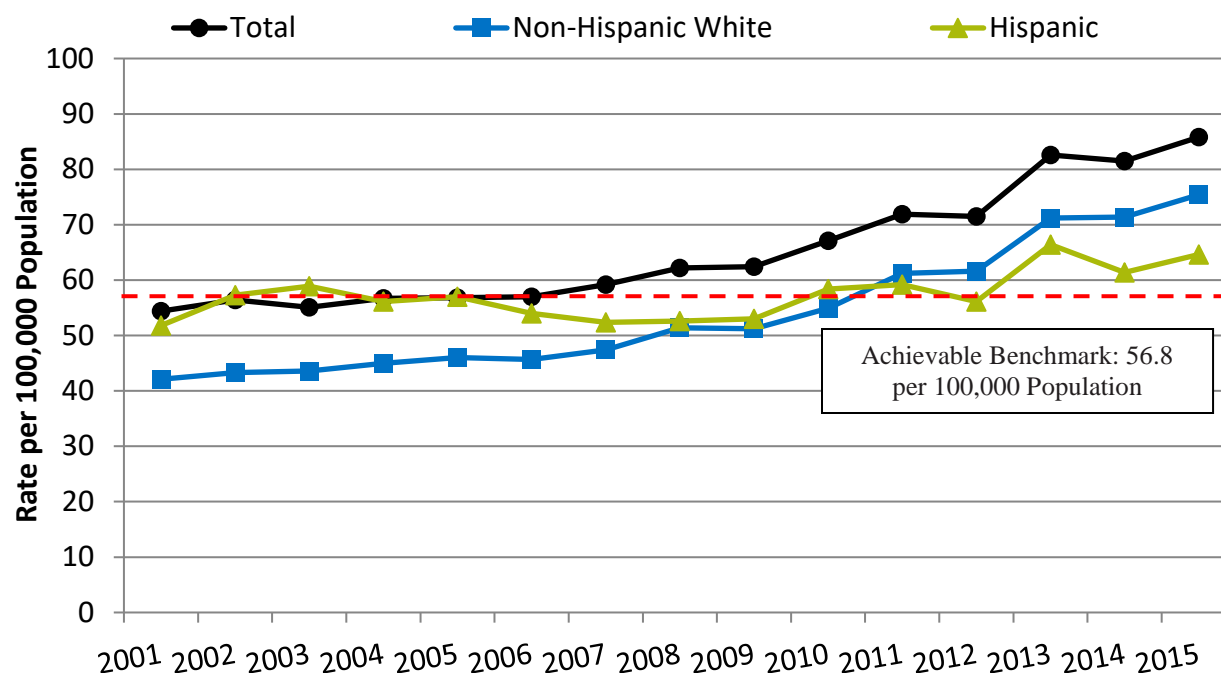


**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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**Graph 79. Improving: Potentially avoidable hospital admissions for short-term complications of diabetes per 100,000 population, adults age 18 and over, 2001-2015**



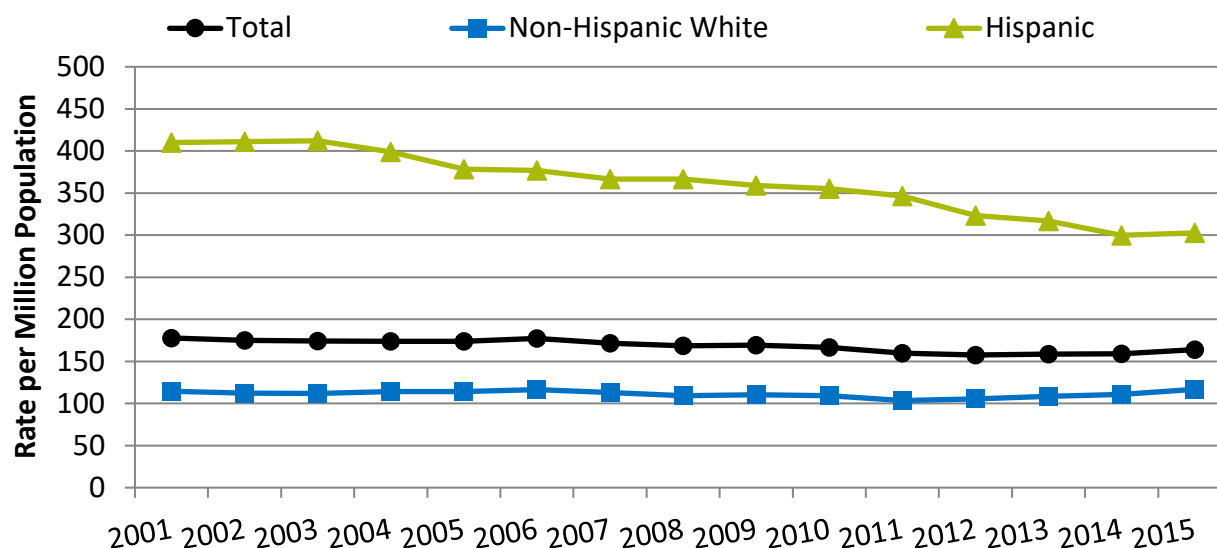
**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases, 2001-2015, weighted to provide national estimates using the same methodology as the HCUP Nationwide Inpatient Sample; and the AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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**Graph 80. Improving: Adjusted incident rates of end stage renal disease due to diabetes per million population, 2001-2015**

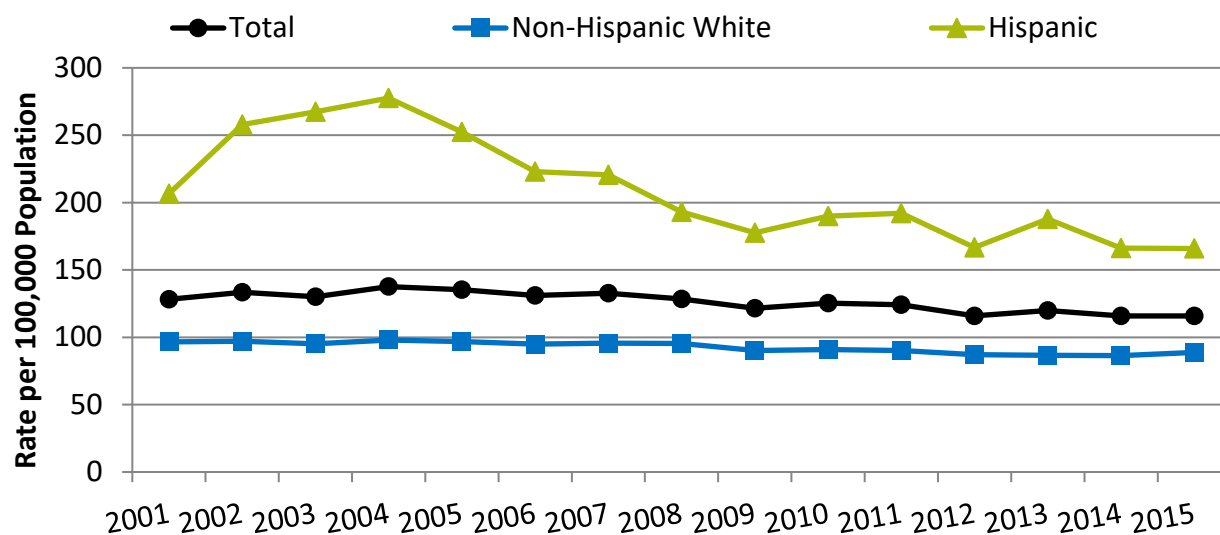


**Source:** National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, U.S. Renal Data System, 2001-2015.

**Note:** For this measure, lower rates are better.

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**Graph 81. Improving: Potentially avoidable hospital admissions with diabetes with long-term complications per 100,000 population, age 18 and over, 2001-2015**



**Source:** National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, U.S. Renal Data System, 2001-2015

**Note:** For this measure, lower rates are better.

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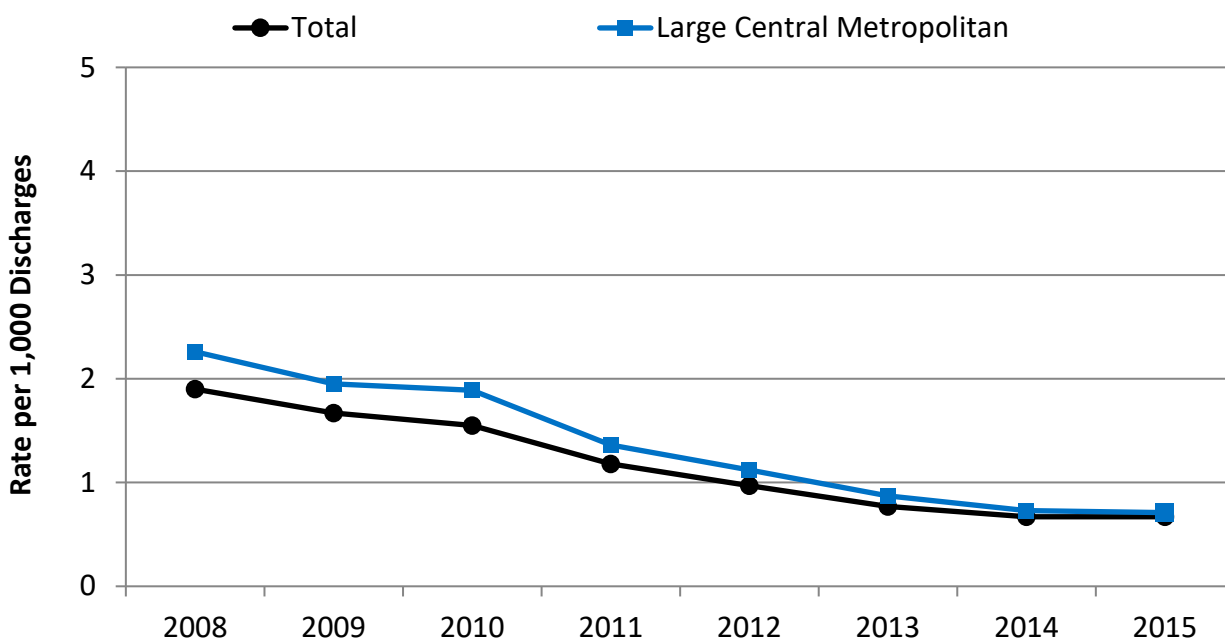
## Geographic Location

Geographic location is based on the Centers for Disease Control and Prevention 2006 Urban-Rural Classification Scheme for Counties ([www.cdc.gov/nchs/data\\_access/urban\\_rural.htm](http://www.cdc.gov/nchs/data_access/urban_rural.htm)). Counties are classified into six categories:

1. **Large central metropolitan:** Counties in a metropolitan statistical area of 1 million or more population:
  - That contain the entire population of the largest principal city of the metropolitan statistical area, or
  - Whose entire population resides in the largest principal city of the metropolitan statistical area, or
  - That contain at least 250,000 of the population of any principal city in the metropolitan statistical area.
2. **Large fringe metropolitan:** Counties in a metropolitan statistical area of 1 million or more population that do not qualify as large central.
3. **Medium metropolitan:** Counties in a metropolitan statistical area of 250,000 to 999,999 population.
4. **Small metropolitan:** Counties in a metropolitan statistical area of 50,000 to 249,999 population.
5. **Micropolitan:** Counties in a micropolitan statistical area.
6. **Noncore:** Counties not in a micropolitan statistical area.

## Large Central Metropolitan – Improvements

**Graph 82. Improving: Hospital admissions with central venous catheter-related bloodstream infection per 1,000 medical and surgical discharges of length 2 or more days, adults age 18 and over or obstetric admissions, 2008-2015**

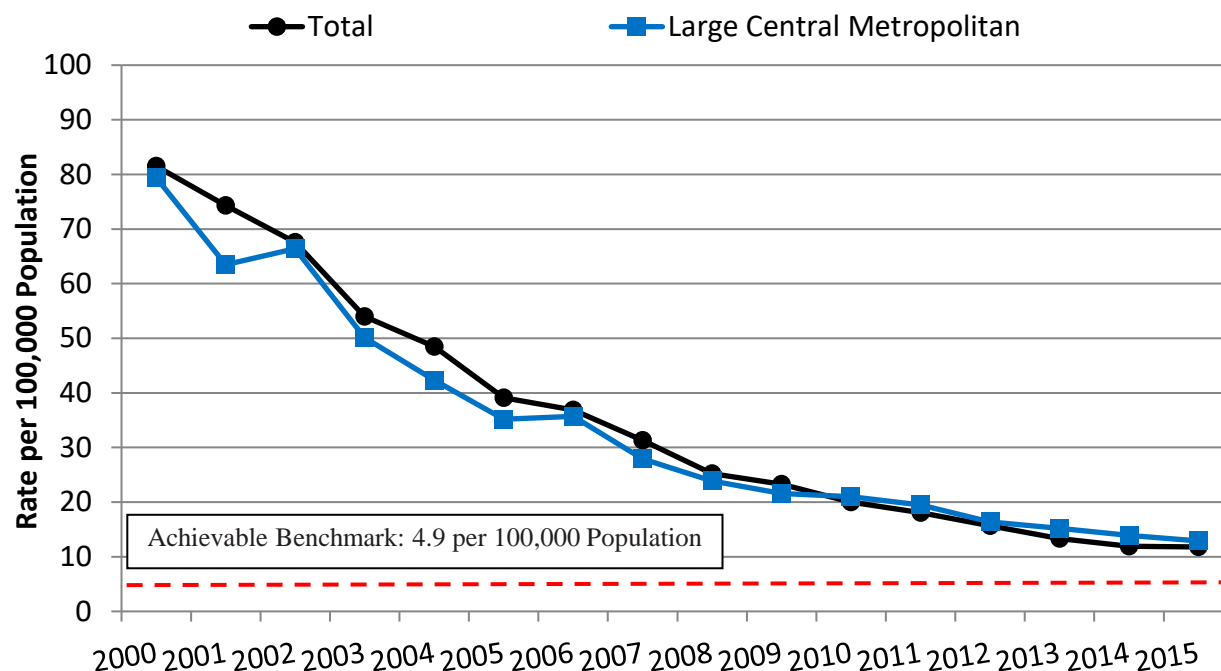


**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2008-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and the AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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**Graph 83. Improving: Potentially avoidable hospital admissions for angina per 100,000 population, adults age 18 and over, 2000-2015**

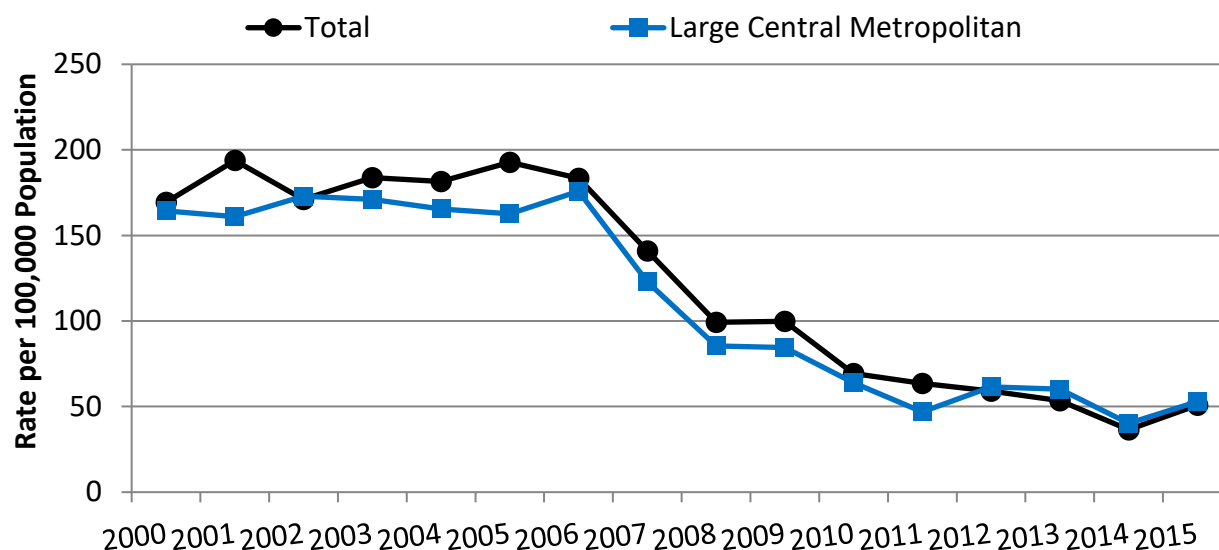


**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and the AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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**Graph 84. Improving: Hospital admissions for pediatric gastroenteritis per 100,000 population, children ages 3 months to 17 years, 2000-2015**



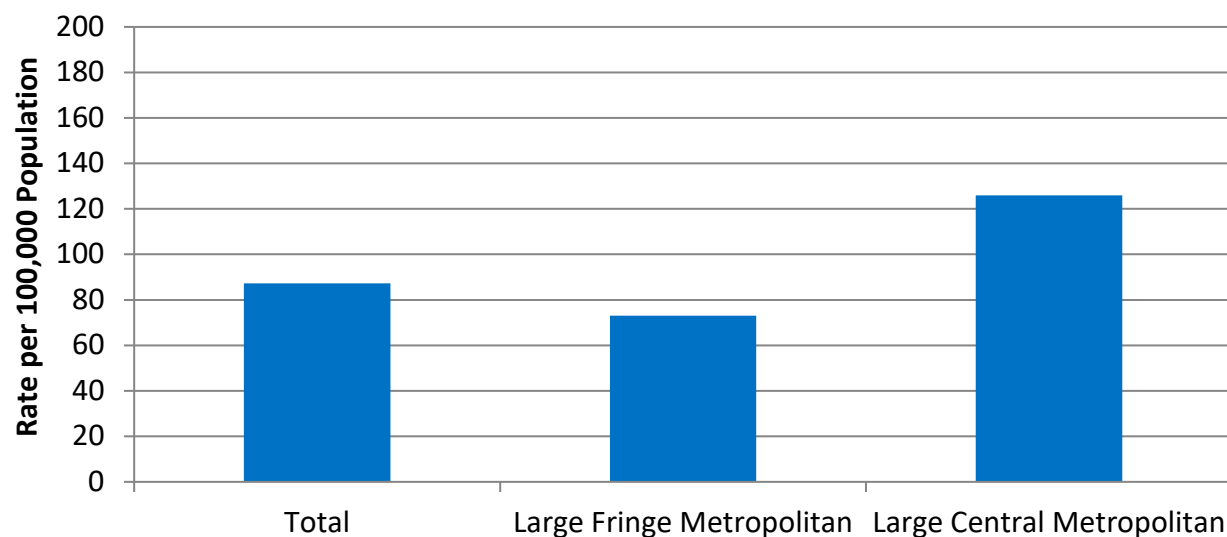
**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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### Large Central Metropolitan – Largest Disparities

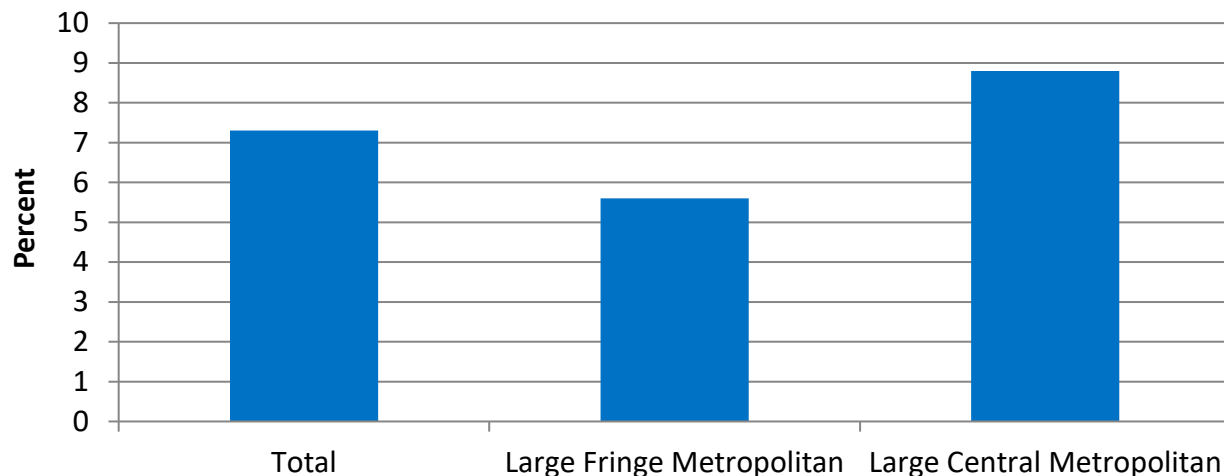
**Graph 85. Largest Disparities: Potentially avoidable hospital admissions for asthma per 100,000 population, children ages 2-17, large central metropolitan vs. large fringe metropolitan, 2015**



**Source:** Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, 2015. **Note:** For this measure, lower rates are better.

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**Graph 86. Largest Disparities: 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, large central metropolitan vs. large fringe metropolitan, 2015**



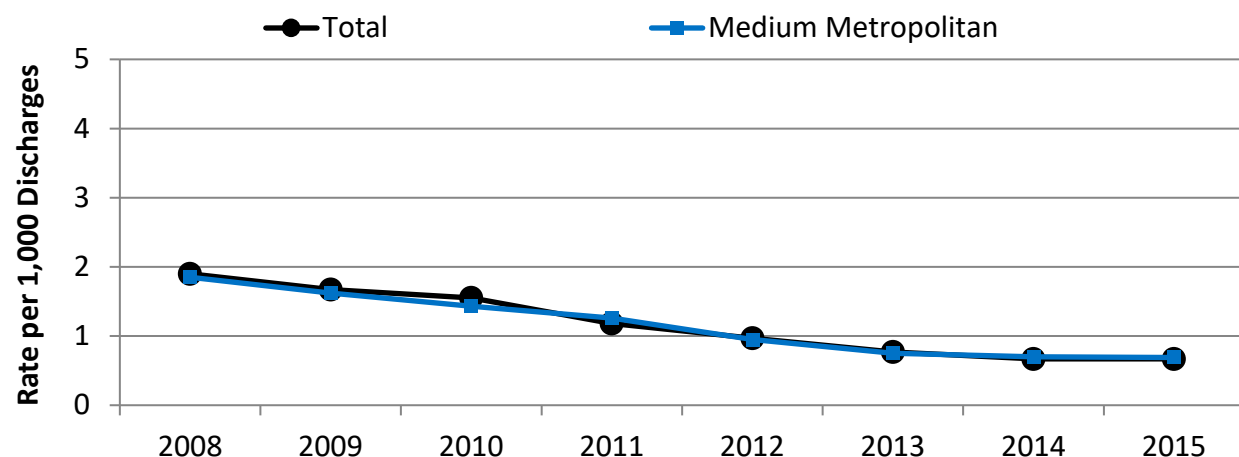
**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2015.

**Note:** For this measure, lower rates are better. The wording reflects a Likert-type scale with the following options: Always, Usually, Sometimes, Never. Sometimes and Never are combined into a single category that is the opposite of Always.

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### Medium Metropolitan - Improvements

**Graph 87. Improving: Hospital admissions with central venous catheter-related bloodstream infection per 1,000 medical and surgical discharges of length 2 or more days, adults age 18 and over or obstetric admissions, 2008-2015**

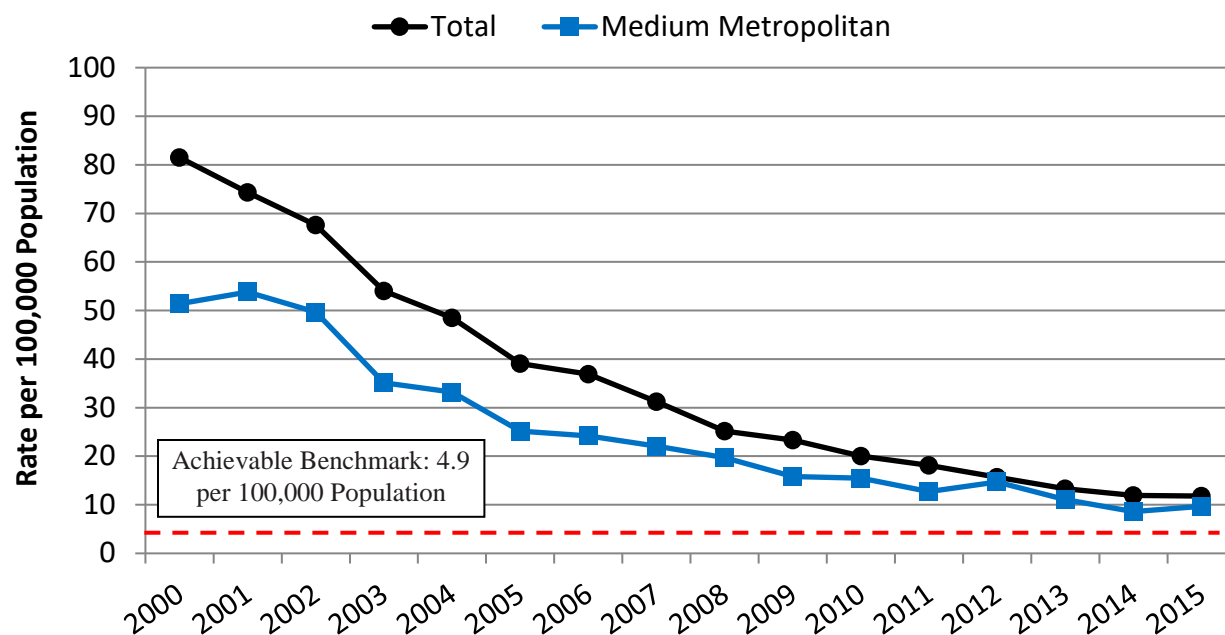


**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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**Graph 88. Improving: Potentially avoidable hospital admissions for angina per 100,000 population, adults age 18 and over, 2000-2015**

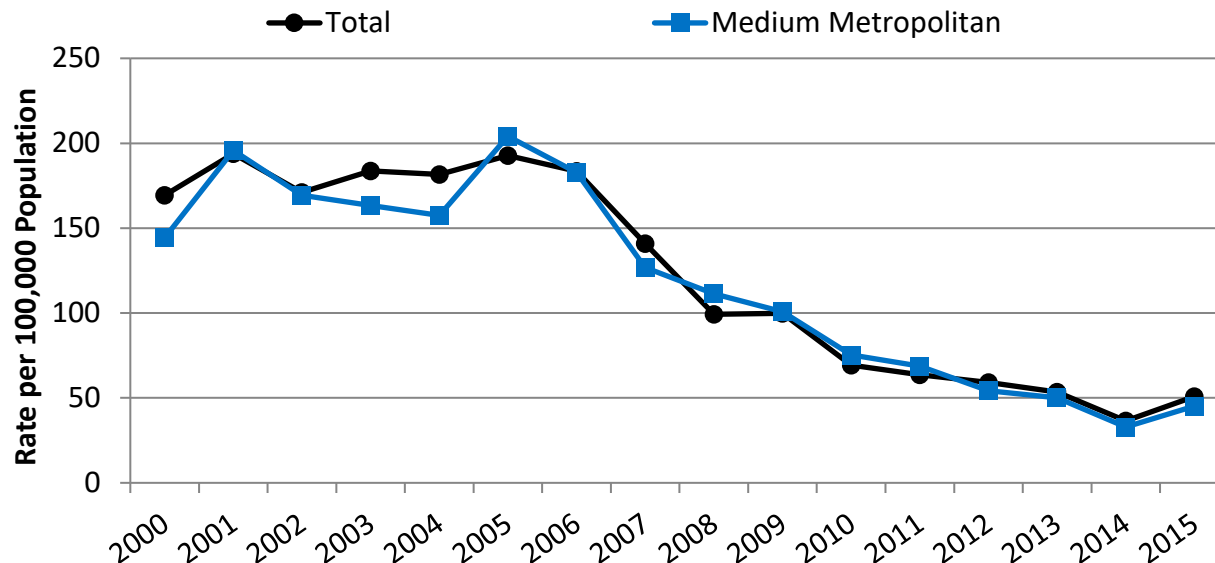


**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and the AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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**Graph 89. Improving: Hospital admissions for pediatric gastroenteritis per 100,000 population, children ages 3 months to 17 years, 2000-2015**



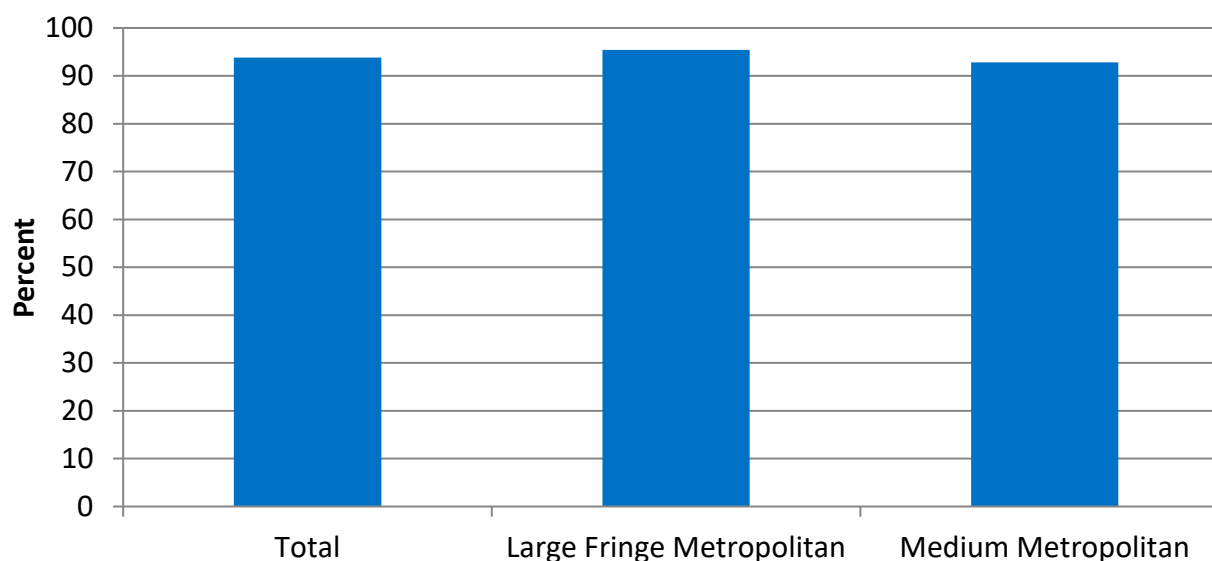
**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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### Medium Metropolitan - Largest Disparities

**Graph 90. Largest Disparities: Children who had their height and weight measured by a health provider within the past 2 years, medium metropolitan vs. large fringe metropolitan, 2015**

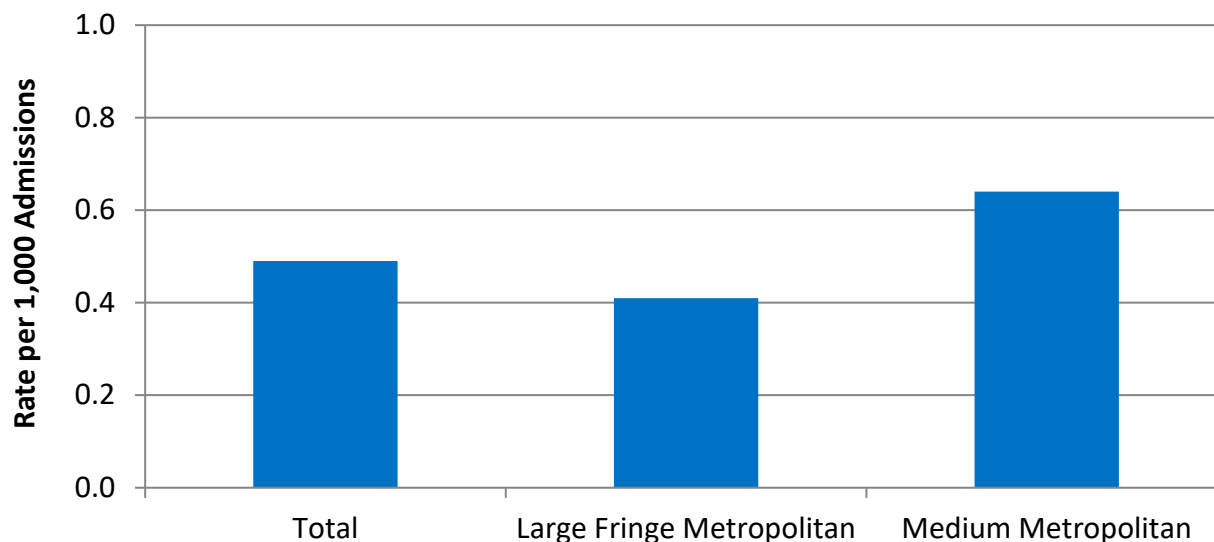


**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2015.

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**Graph 91. Largest Disparities: Accidental puncture or laceration during procedure per 1,000 medical and surgical admissions, children under 18 years, medium metropolitan vs. large fringe metropolitan, 2015**

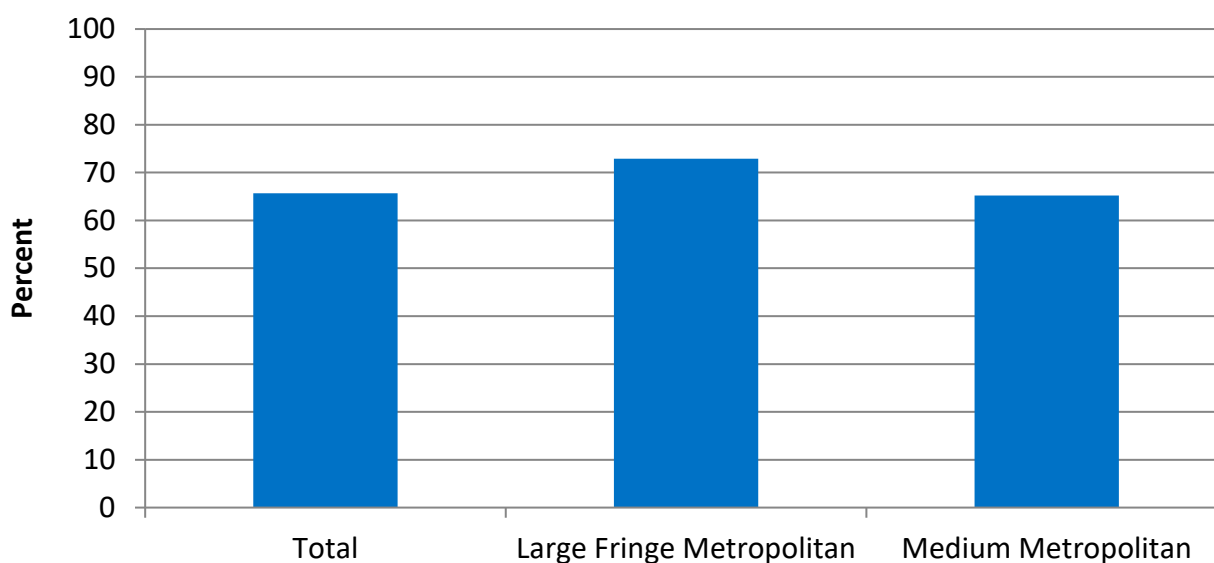


**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases, 2001-2015, weighted to provide national estimates using the same methodology as the HCUP Nationwide Inpatient Sample; and the AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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>), 2015.

**Note:** For this measure, lower rates are better.

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**Graph 92. Largest Disparities: People under age 65 with any private health insurance, medium metropolitan vs. large fringe metropolitan, 2016**

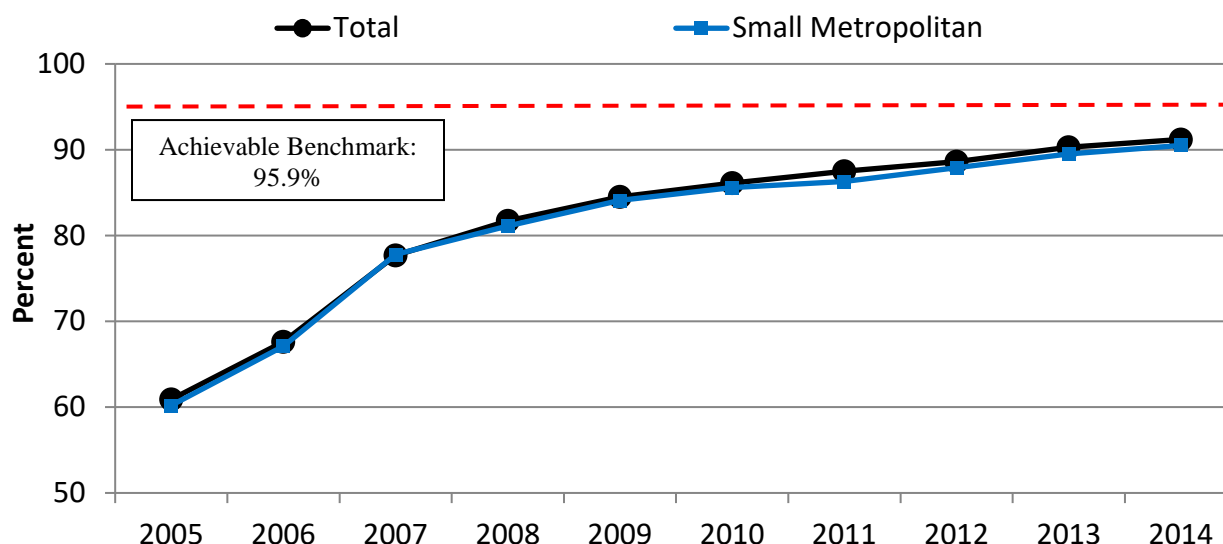


**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2016.

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### Small Metropolitan - Improvements

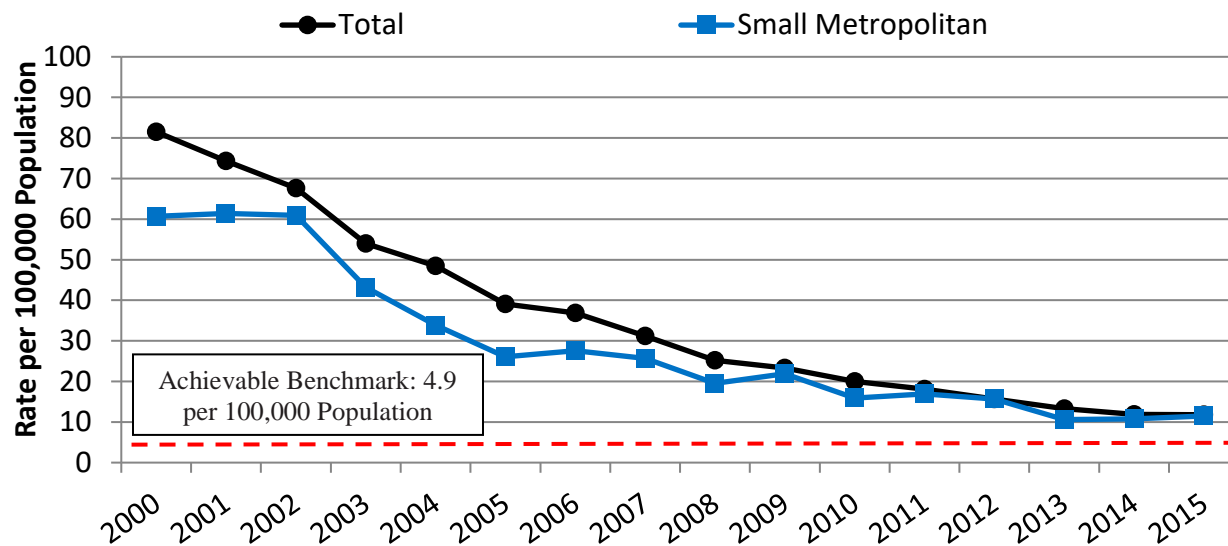
**Graph 93. Improving: Patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined, 2005-2014**



**Source:** Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base, 2005-2014.

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**Graph 94. Improving: Potentially avoidable hospital admissions for angina per 100,000 population, adults age 18 and over, 2000-2015**

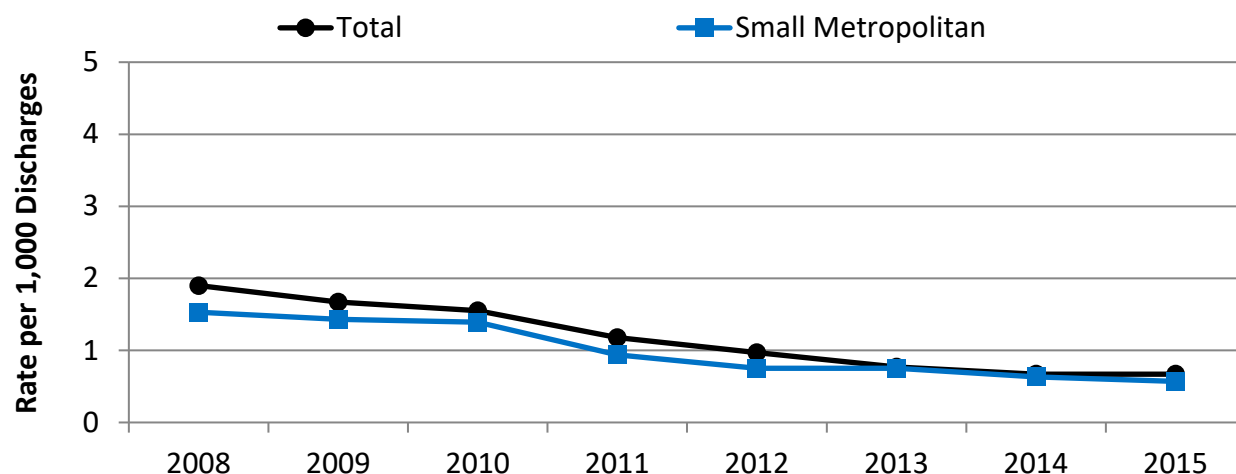


**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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**Graph 95. Improving: Hospital admissions with central venous catheter-related bloodstream infection per 1,000 medical and surgical discharges of length 2 or more days, adults age 18 and over or obstetric admissions, 2008-2015**



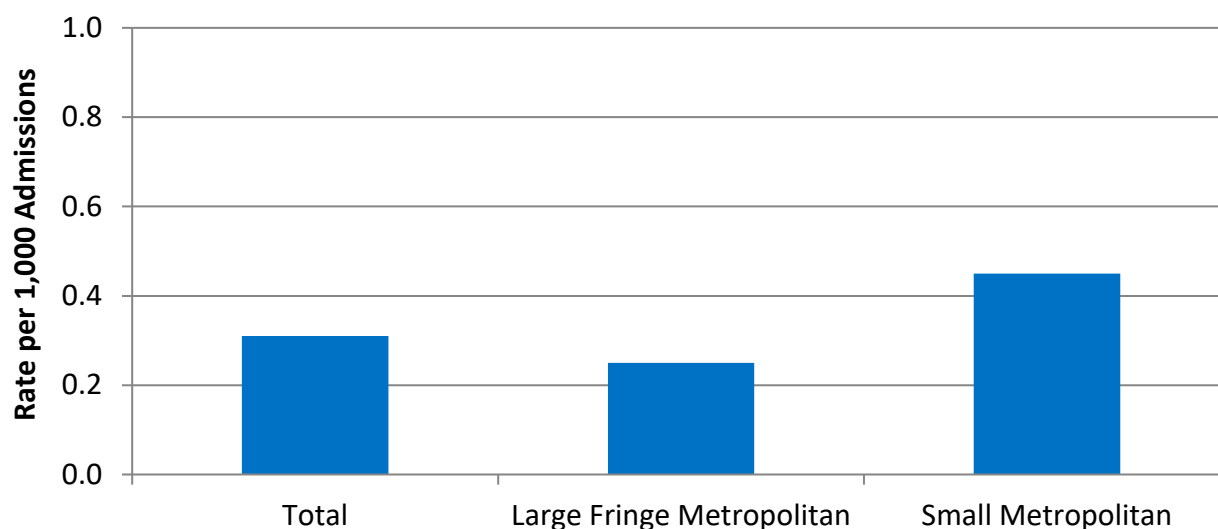
**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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### Small Metropolitan - Largest Disparities

**Graph 96. Largest Disparities: Deaths per 1,000 hospital admissions with expected low-mortality, small metropolitan vs. large fringe metropolitan, 2015**

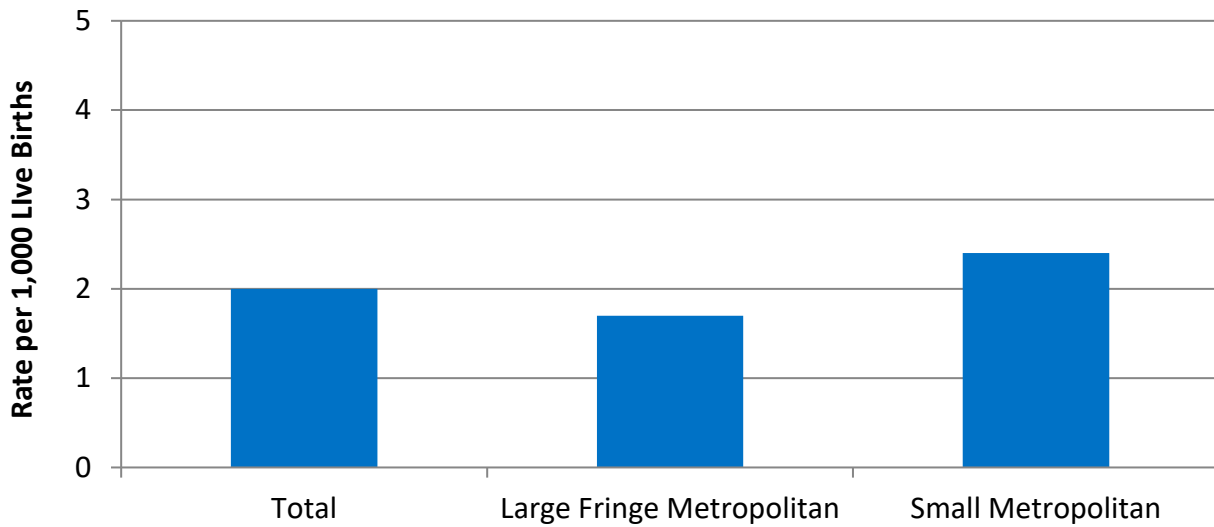


**Source:** Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, 2015.

**Note:** For this measure, lower rates are better.

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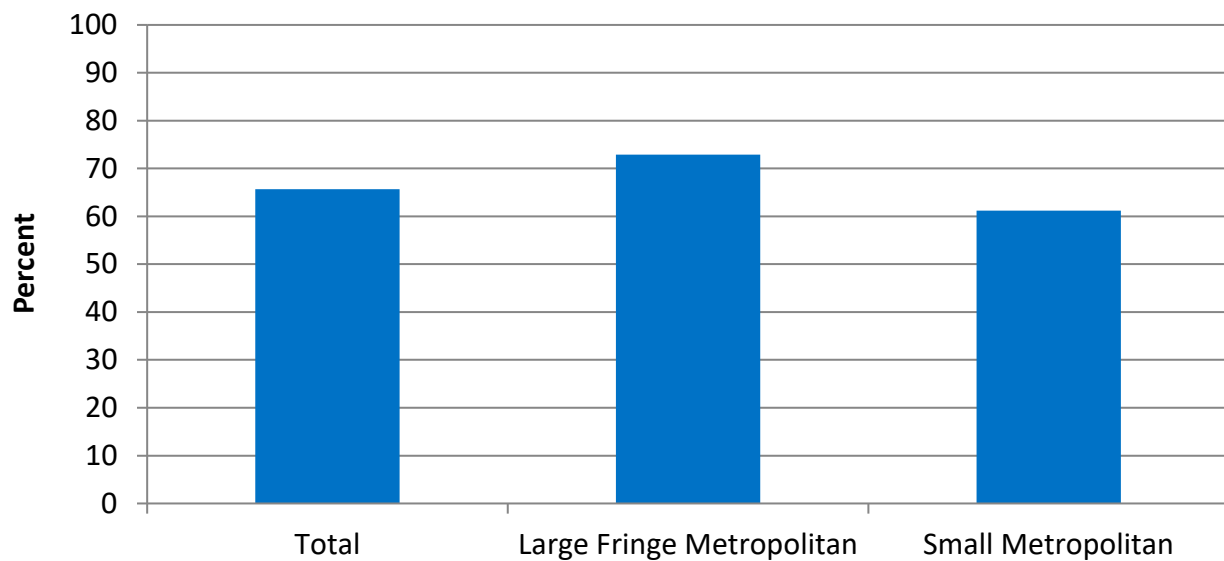
**Graph 97. Largest Disparities: Infant mortality per 1,000 live births, birth weight more than 2,499 grams, small metropolitan vs. large fringe metropolitan, 2014**



**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System – Linked Birth and Infant Death Data, 2014.

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**Graph 98. Largest Disparities: People under age 65 with any private health insurance, small metropolitan vs. large fringe metropolitan, 2016**

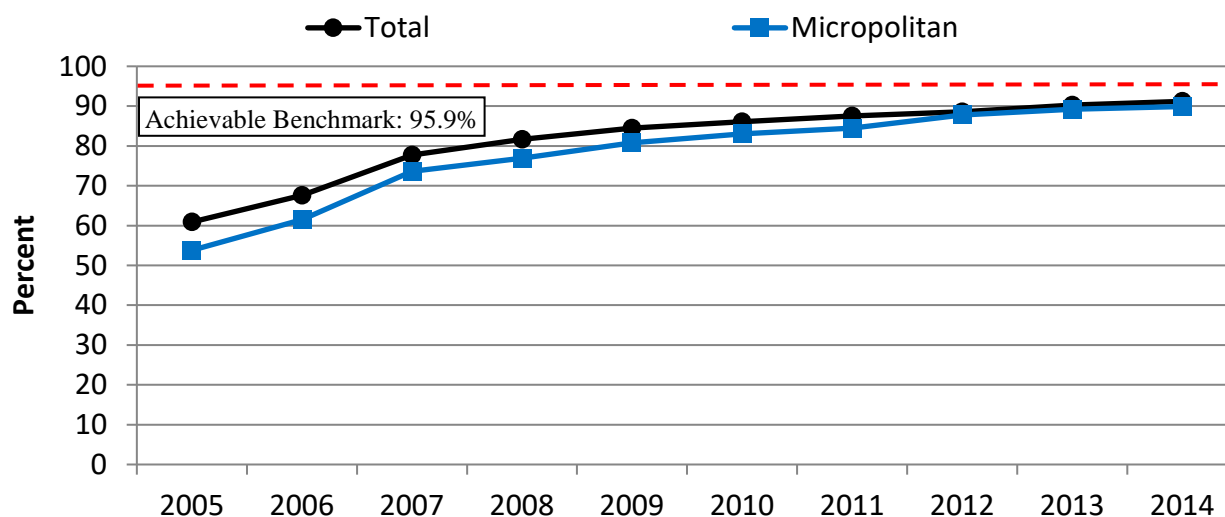


**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2016.

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### Micropolitan - Improvements

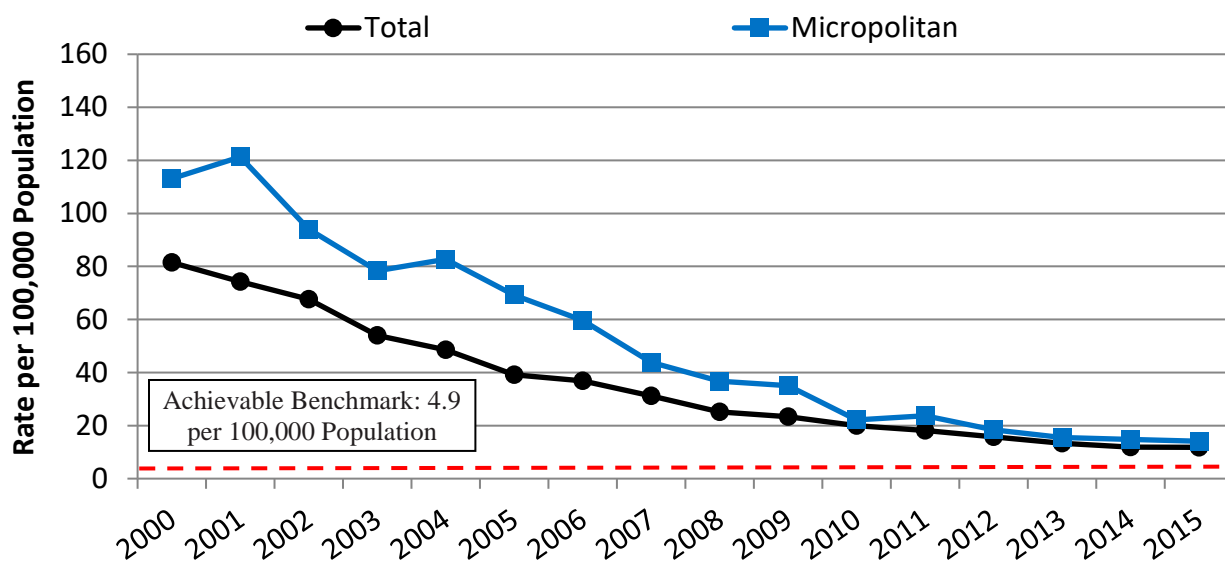
**Graph 99. Improving: Patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined, 2005-2014**



**Source:** Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base, 2005-2014.

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**Graph 100. Improving: Potentially avoidable hospital admissions for angina per 100,000 population, adults age 18 and over, 2000-2015**

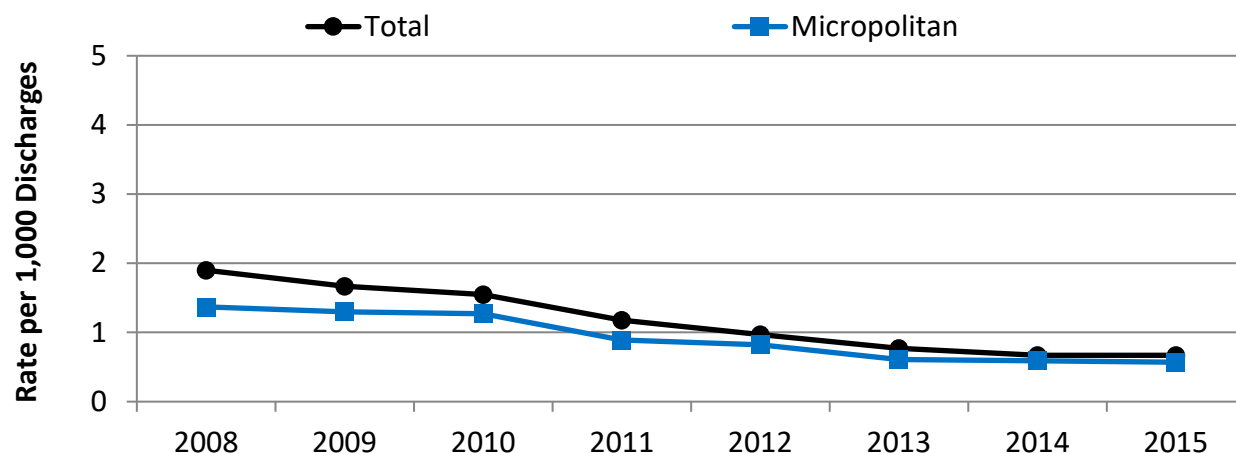


**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and the AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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**Graph 101. Improving: Hospital admissions with central venous catheter-related bloodstream infection per 1,000 medical and surgical discharges of length 2 or more days, adults age 18 and over or obstetric admissions, 2008-2015**



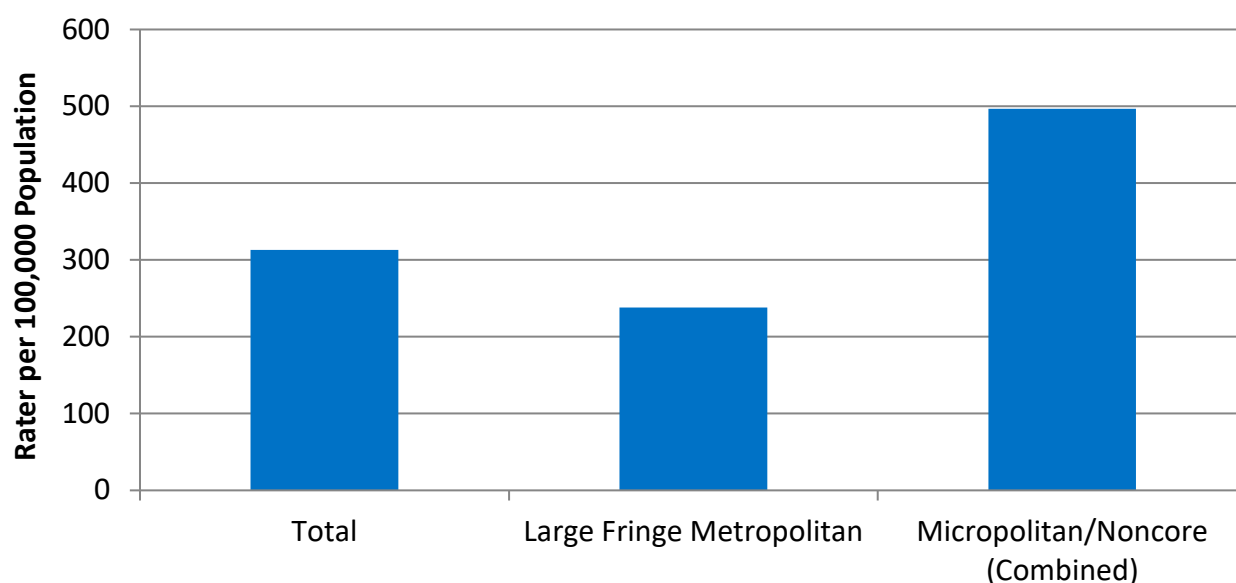
**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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### Micropolitan - Largest Disparities

**Graph 102. Largest Disparities: Emergency department visits with a principal diagnosis related to dental conditions per 100,000 population, micropolitan and noncore combined vs. large fringe metropolitan, 2015**

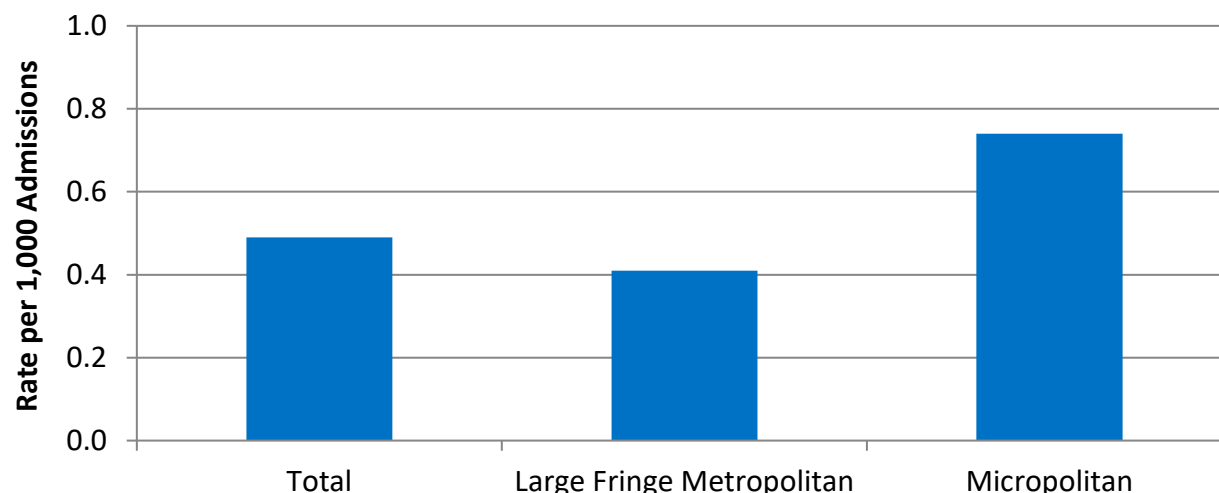


**Source:** Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Nationwide Emergency Department Sample, 2015.

**Note:** For this measure, lower rates are better.

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**Graph 103. Largest Disparities: Accidental puncture or laceration during procedure per 1,000 medical and surgical admissions, children, micropolitan vs. large fringe metropolitan, 2015**

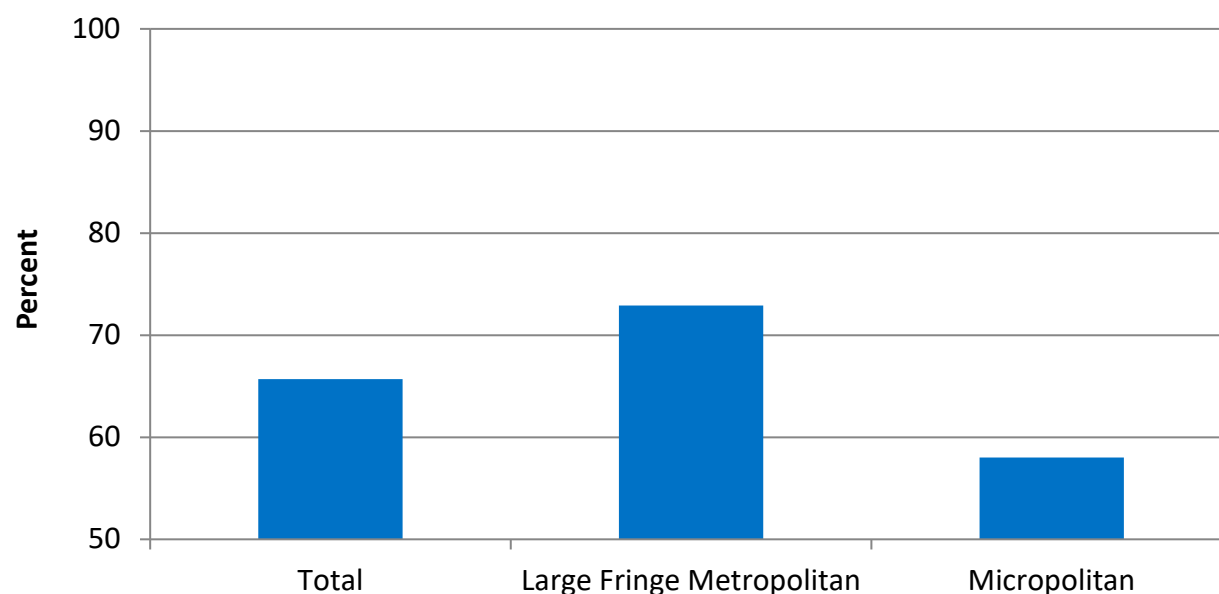


**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), State Inpatient Databases, 2001-2015, weighted to provide national estimates using the same methodology as the HCUP Nationwide Inpatient Sample; and the AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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>), 2015.

**Note:** For this measure, lower rates are better.

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**Graph 104. Largest Disparities: People under age 65 with any private health insurance, micropolitan vs. large fringe metropolitan, 2016**

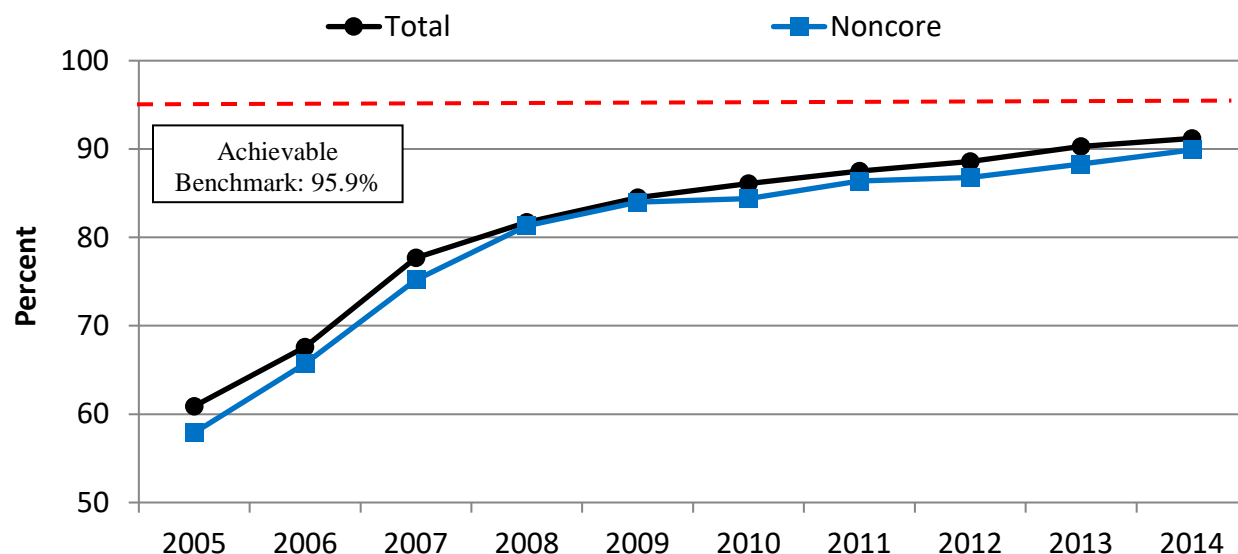


**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2016.

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## Noncore - Improvements

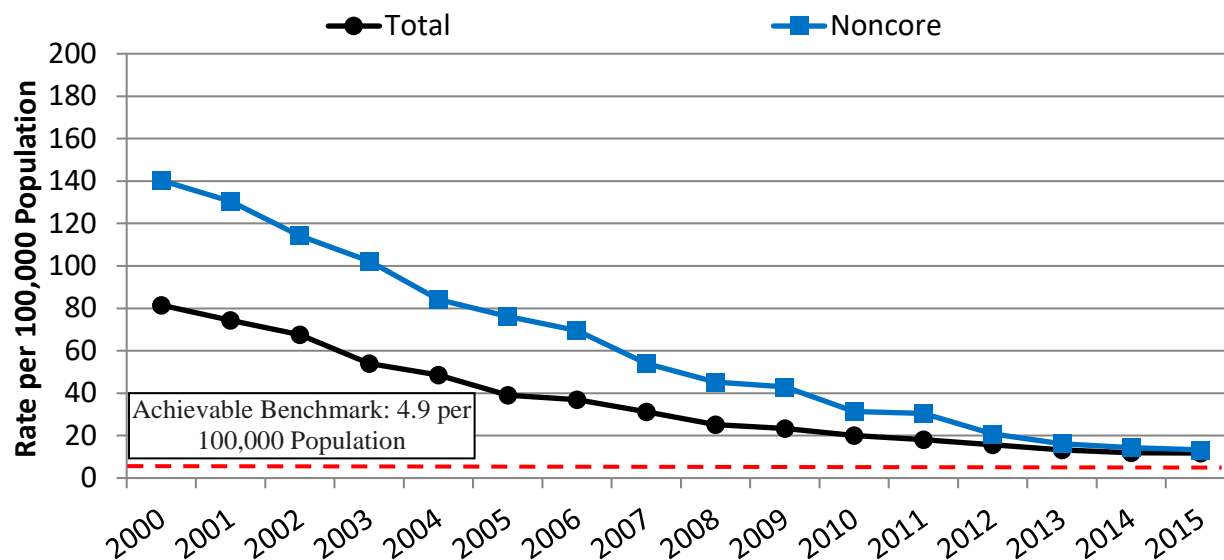
**Graph 105. Improving: Patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined, 2005-2014**



**Source:** Commission on Cancer, American College of Surgeons and American Cancer Society, National Cancer Data Base, 2005-2014.

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**Graph 106. Improving: Potentially avoidable hospital admissions for angina per 100,000 population, adults age 18 and over, 2000-2015**



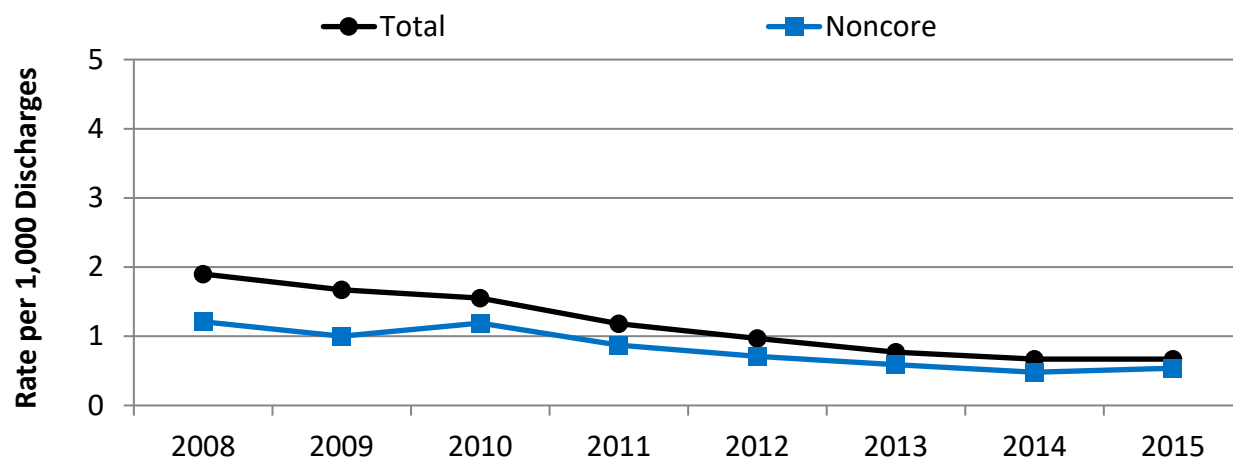
**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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**Graph 107. Improving: Hospital admissions with central venous catheter-related bloodstream infection per 1,000 medical and surgical discharges of length 2 or more days, adults age 18 and over or obstetric admissions, 2008-2015**



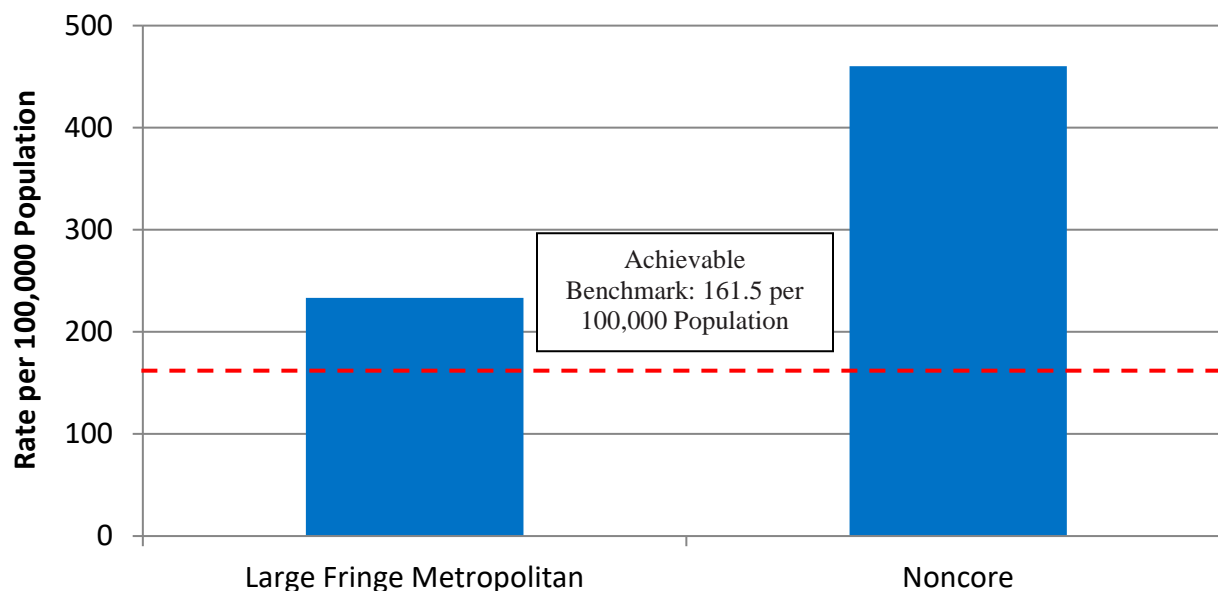
**Source:** Agency for Healthcare Research and Quality (AHRQ), Healthcare Cost and Utilization Project (HCUP), Nationwide Inpatient Sample (NIS), 2000-2011; State Inpatient Databases, 2012-2015, weighted to provide national estimates using the same methodology as the 2000-2011 NIS; and AHRQ Quality Indicators, version 4.4. Estimates for 2015 were based on 9 months of data (January-September) with International Classification of Diseases, 9<sup>th</sup> Revision coding. For more information on the sampling approach, included states, and special handling of 2015 data, 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.

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### Noncore - Largest Disparities

**Graph 108. Largest Disparities: Avoidable hospital admissions for bacterial pneumonia per 100,000 population, adults age 18 and over, noncore vs. large fringe metropolitan, 2015**

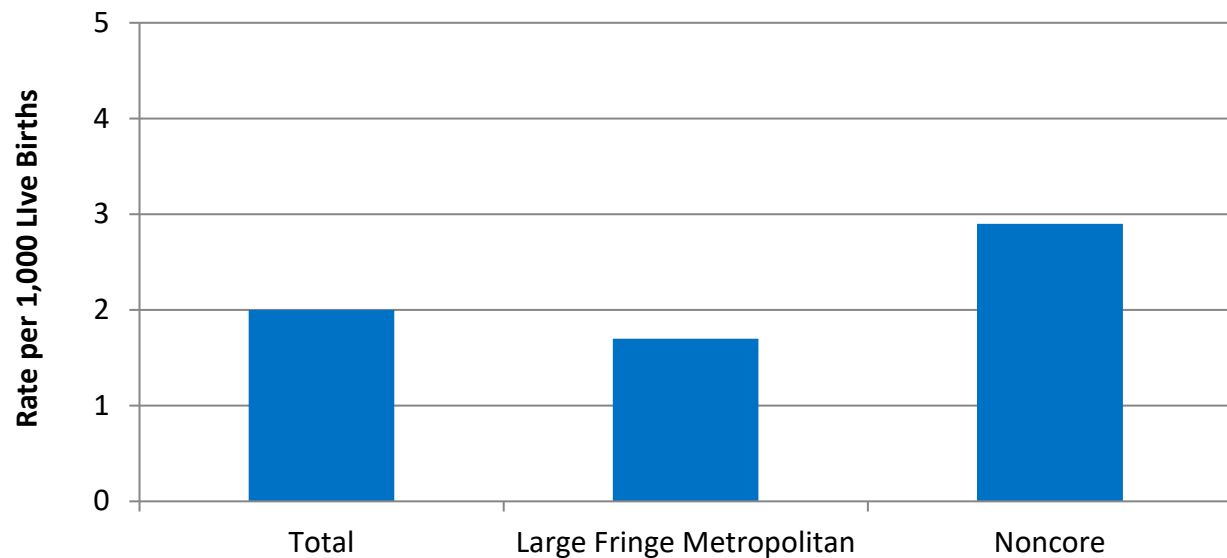


**Source:** Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, 2015.

**Note:** For this measure, lower rates are better.

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**Graph 109. Largest Disparities: Infant mortality per 1,000 live births, birth weight more than 2,499 grams, noncore vs. large fringe metropolitan, 2014**

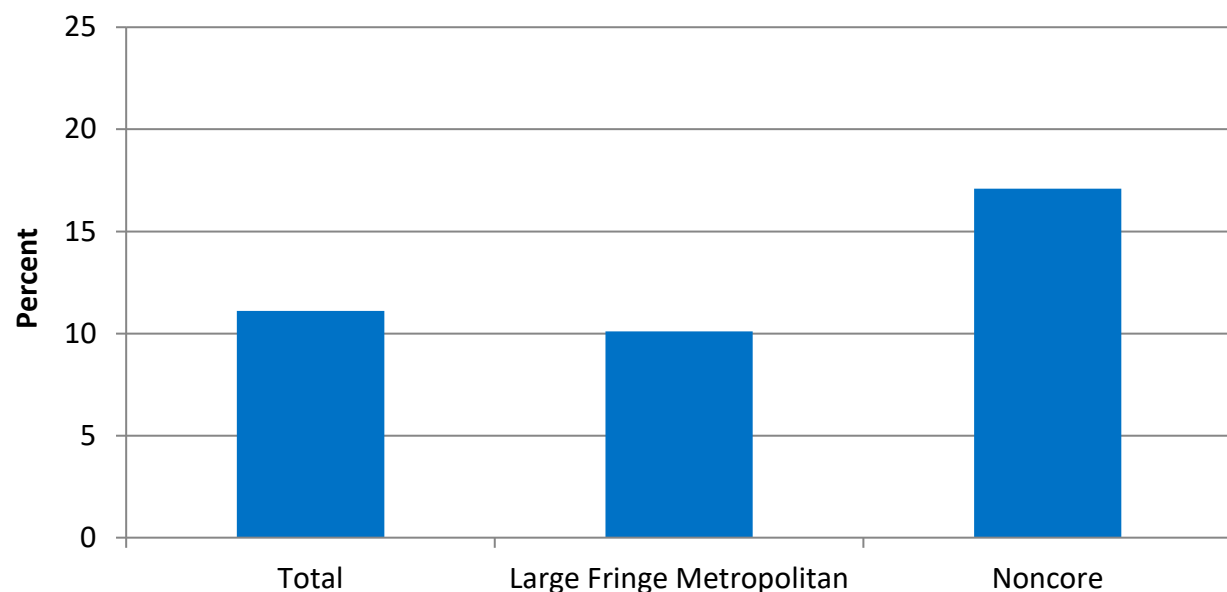


**Source:** Centers for Disease Control and Prevention, National Center for Health Statistics, National Vital Statistics System - Linked Birth and Infant Death Data, 2014.

**Note:** For this measure, lower rates are better.

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**Graph 110. Largest Disparities: Rating of health care 0-6 on a scale from 0 to 10 (best grade) by adults who had a doctor's office or clinic visit in the last 12 months, noncore vs. large fringe metropolitan, 2015**



**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2015.

**Notes:** For this measure, lower rates are better.

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## APPENDIX B. LIST OF MEASURES AND SUMMARY OF RESULTS FOR FIGURES

Due to its length, Appendix B is provided separately and contains information on the measures used for the QDR figures below.

- Figure 9: Overall Quality of Care by State, 2014-2016
- Figure 10: Average Differences in Quality of Care for Blacks, Hispanics, and Asians Compared With Whites, by State, 2015-2016
- Figure 11: Number and Percentage of Access Measures for Which Measure Trends Were Improving, Not Changing, or Worsening, 2000-2016
- Figure 12: Number and Percentage of Access Measures for Which Members of Selected Groups Experienced Better, Same, or Worse Access to Care Compared With Reference Group, 2014-2016
- Figure 18: Number and Percentage of All Quality Measures That Were Improving, Not Changing, or Worsening, Total and by Priority Area, From 2000 Through 2016
- Figure 19: Number and Percentage of Quality Measures for Which Members of Selected Groups Experienced Better, Same, or Worse Quality of Care Compared With Reference Group (White) in 2014-2016
- Figure 20: Number and Percentage of Quality Measures With Disparity at Baseline for Which Disparities Related to Race and Ethnicity Were Improving, Not Changing, or Worsening, 2000 Through 2014-2016
- Figure 21: Number and Percentage of All Quality Measures That Were Improving, Not Changing, or Worsening, Total for Blacks and by Priority Area, From 2000 Through 2016
- Figure 22: Number and Percentage of All Quality Measures That Were Improving, Not Changing, or Worsening, Total for Asians and by Priority Area, From 2000 Through 2016
- Figure 23: Number and Percentage of All Quality Measures That Were Improving, Not Changing, or Worsening, Total for American Indians and Alaska Natives and by Priority Area, From 2000 Through 2016
- Figure 24: Number and Percentage of All Quality Measures That Were Improving, Not Changing, or Worsening, Total for Native Hawaiians/Pacific Islanders and by Priority Area, From 2001 Through 2016
- Figure 25: Number and Percentage of All Quality Measures That Were Improving, Not Changing, or Worsening, Total for Hispanics and by Priority Area, From 2000 Through 2016
- Figure 26: Number and Percentage of All Quality Measures That Were Improving, Not Changing, or Worsening, Total for Poor People and by Priority Area, From 2000 Through 2015
- Figure 27: Number and Percentage of Quality Measures for Which Income Groups Experienced Better, Same, or Worse Quality of Care Compared With Reference Group (High Income), 2014-2015
- Figure 28: Number and Percentage of Quality Measures With Disparity at Baseline for Which Disparities Related to Income Were Improving, Not Changing, or Worsening, 2000 Through 2015
- Figure 29: Number and Percentage of Quality Measures for Which Insurance Groups Experienced Better, Same, or Worse Quality of Care Compared With Reference Group (Privately Insured), 2014-2015
- Figure 30: Number and Percentage of Quality and Access Measures for Which Members of Selected Groups Experienced Better, Same, or Worse Quality of Care Compared With Reference Group (Large Fringe Metro) in 2014-2016, by Geographic Location



## APPENDIX C. DATA SOURCES USED FOR 2017 REPORT

The *National Healthcare Quality and Disparities Report* 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)
- Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)
- Home Health Consumer Assessment of Healthcare Providers and Systems (HHCAHPS)
- Medical Expenditure Panel Survey (MEPS)
- National CAHPS® Benchmarking Database (NCBD) – Health Plan Survey Database

#### Centers for Disease Control and Prevention

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

#### Centers for Medicare & Medicaid Services

- Hospital Inpatient Quality Reporting (HIQR) Program

#### Health Resources and Services Administration

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

#### Indian Health Service

- Indian Health Service National Data Warehouse (NDW)

#### National Institutes of Health

- United States Renal Data System (USRDS)

#### Substance Abuse and Mental Health Services Administration

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

## Multi-Agency Data Sources

- Medicare Patient Safety Monitoring System (MPSMS)

## Academic Institutions

### University of Michigan

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

## Professional Organizations and Associations

### American Hospital Association

- American Hospital Association Annual Survey Information Technology Supplement

### Commission on Cancer and American Cancer Society

- National Cancer Data Base (NCDB)

## Additional Information on Agency for Healthcare Research and Quality HCUP Partners

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

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

### Sources of HCUP Data

- **Alaska** Department of Health and Social Services
- **Alaska** State Hospital and Nursing Home Association
- **Arizona** Department of Health Services
- **Arkansas** Department of Health
- **California** Office of Statewide Health Planning and Development
- **Colorado** Hospital Association
- **Connecticut** Hospital Association
- **District of Columbia** Hospital Association
- **Florida** Agency for Health Care Administration
- **Georgia** Hospital Association
- **Hawaii** Health Information Corporation
- **Illinois** Department of Public Health
- **Indiana** Hospital Association
- **Iowa** Hospital Association
- **Kansas** Hospital Association

- **Kentucky** Cabinet for Health and Family Services
- **Louisiana** Department of Health
- **Maine** Health Data Organization
- **Maryland** Health Services Cost Review Commission
- **Massachusetts** Center for Health Information and Analysis
- **Michigan** Health & Hospital Association
- **Minnesota** Hospital Association
- **Mississippi** State Department of Health
- **Missouri** Hospital Industry Data Institute
- **Montana** Hospital Association
- **Nebraska** Hospital Association
- **Nevada** Department of Health and Human Services
- **New Hampshire** Department of Health & Human Services
- **New Jersey** Department of Health
- **New Mexico** Department of Health
- **New York** State Department of Health
- **North Carolina** Department of Health and Human Services
- **North Dakota** (data provided by the Minnesota Hospital Association)
- **Ohio** Hospital Association
- **Oklahoma** State Department of Health
- **Oregon** Association of Hospitals and Health Systems
- **Oregon** Office of Health Analytics
- **Pennsylvania** Health Care Cost Containment Council
- **Rhode Island** Department of Health
- **South Carolina** Revenue and Fiscal Affairs Office
- **South Dakota** Association of Healthcare Organizations
- **Tennessee** Hospital Association
- **Texas** Department of State Health Services
- **Utah** Department of Health
- **Vermont** Association of Hospitals and Health Systems
- **Virginia** Health Information
- **Washington** State Department of Health
- **West Virginia** Health Care Authority
- **Wisconsin** Department of Health Services
- **Wyoming** Hospital Association







## APPENDIX D. DEFINITIONS USED IN 2017 REPORT

### Racial and Ethnic Groups

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

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

7. **American Indian or Alaska Native.** A person having origins in any of the original peoples of North and South America (including Central America) and who maintains tribal affiliation or community attachment.
8. **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.
9. **Black or African American.** A person having origins in any of the black racial groups of Africa. Terms such as “Haitian” or “Negro” can be used in addition to “Black or African American.”
10. **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.”
11. **Native Hawaiian/Pacific Islander.** A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.
12. **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:

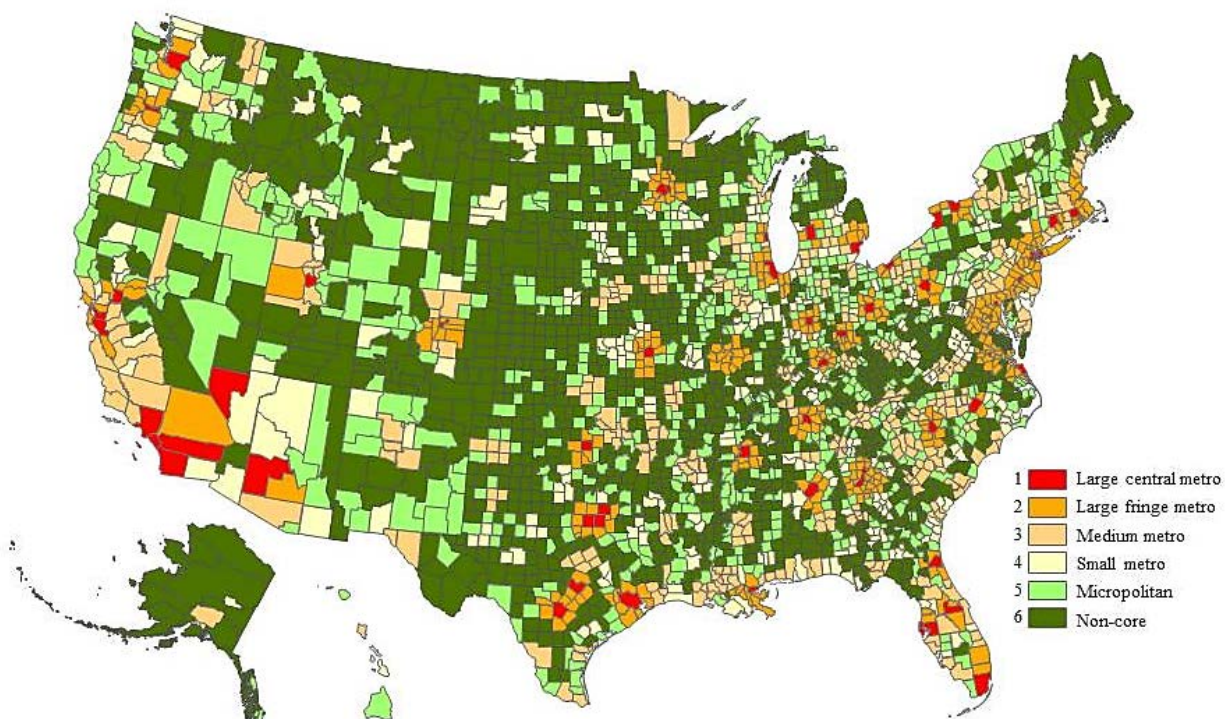
- Poor: Less than 100% of FPL
- Low income: 100% to less than 200% of FPL
- Middle income: 200% to less than 400% of FPL
- High income: 400% or more of FPL

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 2006 Urban-Rural Classification Scheme, shown in the map below.

**Figure D-1. Map showing county classifications**



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

More information is available at [https://www.cdc.gov/nchs/data\\_access/urban\\_rural.htm](https://www.cdc.gov/nchs/data_access/urban_rural.htm).

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## Activity Limitations

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

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

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



## APPENDIX E. NATIONAL HEALTHCARE QUALITY AND DISPARITIES REPORT CROSSWALK WITH VITAL SIGNS: CORE METRICS FOR HEALTH AND HEALTHCARE PROGRESS

A comparison of the QDR core measures with the Vital Signs core metrics illustrates how findings from the QDR can be used to fill in details needed to inform a broader discussion of health and well-being in the United States.

**Table 1. NHQDR and Vital Signs crosswalk**

Domain	Key Element	Core Measure Focus	Vital Signs Measure	Relevant Measures	Source	Year	Current National Performance
Healthy people	Length of life	Life expectancy at birth	Life expectancy at birth	Life expectancy at birth for the total U.S. population	CDC NCHS, NVSS <sup>i</sup>	2015	78.8 years
	Quality of life	Well-being	Self-reported health	Adults who reported their health status as excellent, very good, or good <sup>1</sup>	QDR AHRQ, MEPS	2015	86.9%
		Overweight and obesity	Body mass index (BMI)	Prevalence of obesity among youth ages 2-19 and adults age 20 and older <sup>2</sup>	CDC, NHANES	2015-2016	18.5% of youth; 39.8% of adults
	Healthy behaviors	Addictive behavior	Addiction death rate	Death rates for drug poisoning and drug poisoning involving opioid analgesics and heroin per 100,000 population <sup>3</sup>	CDC NCHS	2015	16.3 people
		Unintended pregnancy	Teen pregnancy rate	Births per 1,000 females, ages 15-19	CDC NCHS, NVSS	2015	22.3%
	Healthy social circumstances	Healthy communities	High school graduation rate	Percentage of public high school freshmen who graduate with a regular diploma within 4 years of starting 9th grade	ED NCES	2014-2015	83%

<sup>i</sup> CDC NCHS = Centers for Disease Control and Prevention, National Center for Health Statistics; NVSS = National Vital Statistics System; QDR = National Healthcare Quality and Disparities Report; AHRQ, MEPS = Agency for Healthcare Research and Quality, Medical Expenditure Survey; NHANES = National Health and Nutrition Examination Survey; ED NCES = Department of Education National Center for Education Statistics.

Domain	Key Element	Core Measure Focus	Vital Signs Measure	Relevant Measures	Source	Year	Current National Performance
	Prevention	Preventive services	Childhood immunization rate	Children ages 19-35 months who received ≥4 doses of diphtheria-tetanus-pertussis vaccine, ≥3 doses of polio vaccine, ≥1 dose of measles-mumps-rubella vaccine, full series for HiB, ≥3 doses of hepatitis B vaccine, ≥1 dose of varicella vaccine, and ≥4 doses of PCV	QDR CDC, NIS <sup>ii</sup>	2015	72.2%
	Access to care	Care access	Unmet care need	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	QDR AHRQ, MEPS	2015	11.9%
Care quality	Safe care	Patient safety	HAI rate	Postoperative sepsis per 1,000 elective-surgery admissions of ≥4 days, age 18 and over; catheter-associated urinary tract infections in surgery patients age 18 and over	QDR AHRQ, HCUP; AHRQ, MPSMS	2015	15.3 per 1,000; 2.67%
	Appropriate treatment	Evidence-based care	Preventable hospitalization rate	Potentially avoidable hospitalizations for all conditions per 100,000 population, adults 18 and over	QDR AHRQ, HCUP	2015	1,415.7 people
	Person-centered care	Care match with patient goals	Patient-clinician communication satisfaction	Adults who had a doctor's office or clinic visit in the last 12 months whose health providers always listened carefully, explained things clearly, respected what they had to say, and spent enough time with them	QDR AHRQ, MEPS	2015	64.45%
Care cost	Affordability	Personal spending burden	High-spending relative to income	People under age 65 whose family's health insurance premiums and out-of-pocket medical expenditures were more than 10% of total family income	QDR AHRQ, MEPS	2016	16.7%

<sup>ii</sup> HiB = *Haemophilus influenzae* type B; PCV = pneumococcal conjugate vaccine; NIS = National Immunization Survey; HAI = healthcare-associated infection; HCUP = Healthcare Cost & Utilization Project; MPSMS = Medicare Patient Safety Monitoring System.



Domain	Key Element	Core Measure Focus	Vital Signs Measure	Relevant Measures	Source	Year	Current National Performance
	Sustainability	Population spending burden	Per capita expenditures on healthcare	Healthcare expenditure per capita	CMS, NHE <sup>iii</sup>	2016	\$10,348
Engaged people	Individual engagement	Individual engagement	Health literacy rate	Adults ≥18 who report their healthcare provider always gave them easy-to-understand instructions about what to do to take care of their illness or health condition; adults who reported their provider always asked them to describe how they would follow instructions (teach-back); and adults who reported their provider's office always offered help in filling out forms	AHRQ, MEPS	2015	68.4%; 30.1%; 17.2%
	Community engagement	Community engagement	Social support	Inadequate family and social support	CDC, BRFSS	2005-2011	21%

### Additional Related NHQDR Measures

1. People in fair or poor health with a specific source of ongoing care
2. Adults age ≥20 with obesity who had been told by a doctor or health professional that they were overweight
3. People age ≥12 who needed treatment for illicit drug use or an alcohol problem and who received such treatment at a specialty facility in the last 12 months

People age ≥12 treated for substance abuse who completed the treatment course

### Reference

Institute of Medicine. 2015. Vital Signs: Core Metrics for Health and Health Care Progress. Washington, DC: The National Academies Press. <https://doi.org/10.17226/19402>.

<sup>iii</sup> CMS, NHE = Centers for Medicare & Medicaid National Health Expenditures data; BRFSS = Behavioral Risk Factor Surveillance System.









AHRQ Publication No. 18-0033-EF  
July 2018

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