



2014 National Healthcare Quality and Disparities Report

CHARTBOOK ON RURAL HEALTH CARE



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2014 NATIONAL HEALTHCARE QUALITY AND DISPARITIES REPORT CHARTBOOK ON RURAL HEALTH CARE

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Data Support Contractors: Social & Scientific Systems

RURAL HEALTH CARE

Organization of the Chartbook on Rural Health Care

- Part of a series related to the National Healthcare Quality and Disparities Report (QDR).
- Contents:
 - Overview of the QDR
 - Overview of residents of rural areas, one of the priority populations of the QDR
 - Summary of trends in health care quality and disparities for rural populations
 - Tracking of access and quality measures for rural populations:
 - ◆ Access to Health Care
 - ◆ Patient Safety
 - ◆ Person- and Family-Centered Care
 - ◆ Communication and Care Coordination
 - ◆ Prevention and Treatment of Leading Causes of Morbidity and Mortality
 - ◆ Healthy Living
 - ◆ Affordability

National Healthcare Quality and Disparities Report

This Healthy Living chartbook is part of a family of documents and tools that support the National Healthcare Quality and Disparities Reports (QDR). The QDR includes annual reports to Congress mandated in the Healthcare Research and Quality Act of 1999 (P.L. 106-129). These reports provide a comprehensive overview of the quality of health care received by the general U.S. population and disparities in care experienced by different racial, ethnic, and socioeconomic groups. The purpose of the reports is to assess the performance of our health system and to identify areas of strengths and weaknesses in the health care system along three main axes: access to health care, quality of health care, and priorities of the National Quality Strategy.

The reports are based on more than 250 measures of quality and disparities covering a broad array of health care services and settings. Data are generally available through 2012, although rates of uninsurance have been tracked through the first half of 2014. The reports are produced with the help of an Interagency Work Group led by the Agency for Healthcare Research and Quality (AHRQ) and submitted on behalf of the Secretary of Health and Human Services (HHS).

Changes for 2014

Beginning with this 2014 report, findings on health care quality and health care disparities are integrated into a single document. This new National Healthcare Quality and Disparities Report highlights the importance of examining quality and disparities together to gain a complete picture of health care. This document is also shorter and focuses on summarizing information over the many measures that are tracked.

Key Findings of the 2014 QDR

The report demonstrates that the Nation has made clear progress in improving the health care delivery system to achieve the three aims of better care, smarter spending, and healthier people, but there is still more work to do, specifically to address disparities in care.

- Access improved.
 - After years without improvement, the rate of uninsurance among adults ages 18-64 decreased substantially during the first half of 2014.
 - Through 2012, improvement was observed across a broad spectrum of access measures among children.
- Quality improved for most NQS priorities.
 - *Patient Safety* improved, led by a 17% reduction in rates of hospital-acquired conditions between 2010 and 2013, with 1.3 million fewer harms to patients, an estimated 50,000 lives saved, and \$12 billion in cost savings.
 - *Person-Centered Care* improved, with large gains in provider-patient communication.
 - Many *Effective Treatment* measures, including several measures of pneumonia care in hospitals publicly reported by the Centers for Medicare & Medicaid Services (CMS), achieved such high levels of performance that continued reporting is unnecessary.
 - *Healthy Living* improved, led by doubling of selected adolescent immunization rates from 2008 to 2012.
- Few disparities were eliminated.
 - People in poor households generally experienced less access and poorer quality.
 - Parallel gains in access and quality across groups led to persistence of most disparities.
 - At the same time, several racial and ethnic disparities in rates of childhood immunization and rates of adverse events associated with procedures were eliminated, showing that elimination is possible.
- Many challenges in improving quality and reducing disparities remain.
 - Performance on many measures of quality remains far from optimal. For example, only half of people with high blood pressure have it controlled. On average, across a broad range of measures, recommended care is delivered only 70% of the time.
 - As noted above, disparities in quality and outcomes by income and race and ethnicity are large and persistent, and were not, through 2012, improving substantially.
 - Some disparities related to hospice care and chronic disease management grew larger.
 - Data and measures need to be improved to provide more complete assessments of two NQS priorities, *Care Coordination* and *Care Affordability*, and of disparities among smaller groups, such as Native Hawaiians, people of multiple races, and people who are lesbian, gay, bisexual, or transgender.

2014 Chartbooks

The 2014 QDR is supported by a series of related chartbooks that:

- Present information on individual measures.
- Are updated annually.
- Are posted on the Web (<http://www.ahrq.gov/research/findings/nhqdr/2014chartbooks/>).

The order and topics of the chartbooks are:

- Access to care.
- Priorities of the National Quality Strategy.
- Access and quality of care for different priority populations.

Six Chartbooks Organized Around Priorities of the National Quality Strategy

1. Making care safer by reducing harm caused in the delivery of care.
2. Ensuring that each person and family is engaged as partners in their care.
3. Promoting effective communication and coordination of care.
4. Promoting the most effective prevention and treatment practices for the leading causes of mortality, starting with cardiovascular disease.
5. Working with communities to promote wide use of best practices to enable healthy living.
6. Making quality care more affordable for individuals, families, employers, and governments by developing and spreading new health care delivery models.

Other Chartbooks Organized Around AHRQ's Priority Populations

- AHRQ's priority populations, specified in the Healthcare Research and Quality Act of 1999 (Public Law 106-129):
 - Racial and ethnic minority groups
 - Low-income groups
 - Women
 - Children (under age 18)
 - Older adults (age 65 and over)
 - Residents of rural areas
 - Individuals with special health care needs, including:
 - ◆ Individuals with disabilities
 - ◆ Individuals who need chronic care or end-of-life care

Chartbook on Rural Health

- This chartbook includes:
 - Summary of trends in health care quality and disparities for rural populations.
 - Figures illustrating select measures of Access to Health Care and 6 NQS Priorities for rural populations.
- [Introduction and Methods](#) contains information about methods used in the chartbook.
- Appendixes include information about measures and data.
- A Data Query tool (<http://nhqrnet.ahrq.gov/inhqrdr/data/query>) provides access to all data tables.

Residents of Rural Areas

- Approximately 17% of Americans live in a nonmetropolitan, or rural, area.
- Although rural residents make up less than one-fifth of the U.S. population, 65% of all U.S. counties are classified as nonmetropolitan (Meit, et al., 2014).
 - This includes 445 “frontier” counties (U.S. Census Bureau, 2010) that have a population density of fewer than 7 people per square mile.

Health Issues in Rural Areas

- Compared with their urban counterparts, residents of rural counties are:
 - Older,
 - Poorer, and
 - Sicker (a higher percentage of residents has activity limitations due to chronic health conditions) (Meit, et al., 2014).

Life Expectancy in Rural Areas

- The life expectancy for U.S. residents decreases as the level of rurality increases:
 - In 2005-2009, those living in large metropolitan areas had a life expectancy of 79.1 years compared with 76.7 years for those living in rural areas.
 - This disparity widened over time.
 - Causes of death contributing most to lower life expectancy in rural areas include:
 - ◆ Heart disease,
 - ◆ Unintentional injuries,
 - ◆ Chronic obstructive pulmonary disease,
 - ◆ Lung cancer,
 - ◆ Stroke,
 - ◆ Suicide, and
 - ◆ Diabetes (Singh & Siahpush, 2014).

Health Care Providers in Rural Areas

- Metropolitan, or urban, counties tend to have a greater supply of health care providers per capita than nonmetropolitan counties.
 - This is especially true for specialists such as neurologists, anesthesiologists, and psychiatrists.
 - The same is true for the supply of dentists, which decreases per capita as the level of rurality increases.
- Rural residents often live farther away from health care resources, which can add to the burden of accessing care (Meit, et al., 2014).
- Nonphysician practitioners, such as nurse practitioners and physician assistants are also an important part of the health care landscape in rural communities.

Hospitals in Rural Areas

- Many rural residents depend on small rural hospitals for their care.
 - There are approximately 2,300 rural hospitals throughout the country; 71% have 50 or fewer beds.
 - Most of these hospitals are critical access hospitals that have 25 or fewer beds and must meet certain distance requirements or be declared a necessary provider by the State.

Services Provided by Hospitals in Rural Areas

- Although rural hospitals vary widely, the typical rural hospital offers inpatient care that includes:
 - Surgical services.
 - Obstetric services.
 - Swing bed services.
- Rural hospitals typically do not include:
 - Intensive care unit.
 - Skilled nursing facility.
 - Psychiatric unit.
 - Rehabilitation unit.
- The typical rural hospital also offers outpatient care that includes outpatient surgical services and breast cancer screening/mammography but does not offer hospice services, home health services, chemotherapy services, dental services, or outpatient drug/alcohol abuse care (Freeman, et al., 2015).

Challenges Faced by Hospitals in Rural Areas

- Rural hospitals face unique challenges due to their size and case mix.
 - During the 1980s, many were forced to close due to financial losses.
 - The rate of closures slowed in the late 1990s and early 2000s but in recent years there has been an uptick in rural hospital closures, with at least 54 closures between January 2010 and July 2015 (North Carolina Rural Health Research Program, 2015).

NCHS Urban-Rural Classification Scheme

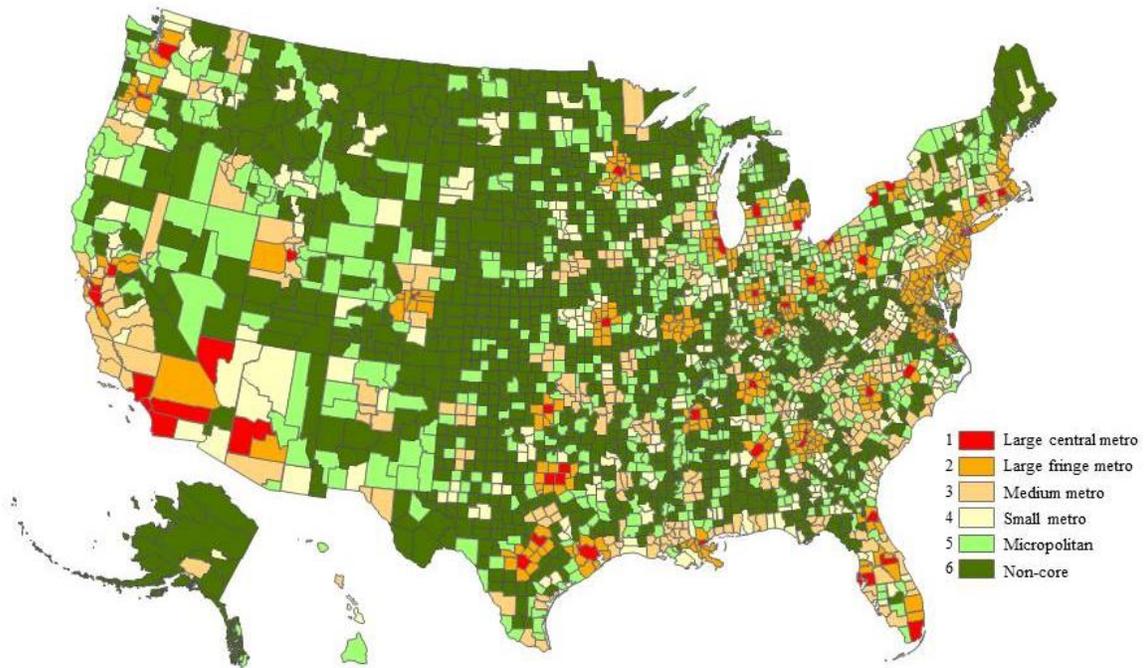
- This chartbook compares residents of nonmetropolitan (rural) areas with residents of large fringe metropolitan (suburban) areas:
- Residents of suburban areas tend to have higher quality health care and better outcomes.
- The National Center for Health Statistics (NCHS) Urban-Rural Classification Scheme is used to guide analyses involving geographic location:
 - This scheme includes six urbanization categories, including four metropolitan and two nonmetropolitan county designations.
 - The 2013 NCHS classification system is derived from data gathered from three sources: the OMB metropolitan and nonmetropolitan designations, the Rural-Urban Continuum and Urban Influence coding systems, and the U.S. Census.

2013 NCHS Urban-Rural Classification System

Metropolitan	
Large central metropolitan	Counties in a metropolitan statistical area of 1 million or more population: <ol style="list-style-type: none"> 1. That contain the entire population of the largest principal city of the metropolitan statistical area, or 2. Whose entire population resides in the largest principal city of the metropolitan statistical area, or 3. That contain at least 250,000 of the population of any principal city in the metropolitan statistical area
Large fringe metropolitan	Counties in a metropolitan statistical area of 1 million or more population that do not qualify as large central
Medium metropolitan	Counties in a metropolitan statistical area of 250,000 to 999,999 population
Small metropolitan	Counties in a metropolitan statistical area of 50,000 to 249,999 population
Nonmetropolitan	
Micropolitan	Counties with urban population of 10,000-49,999, adjacent to metropolitan area
Noncore	Counties that are neither metropolitan nor micropolitan

Source: Ingram D, Franco S. 2013 Rural-Urban Classification Scheme for Counties. CDC, NCHS, 2013. www.cdc.gov/nchs/data_access/urban_rural.htm

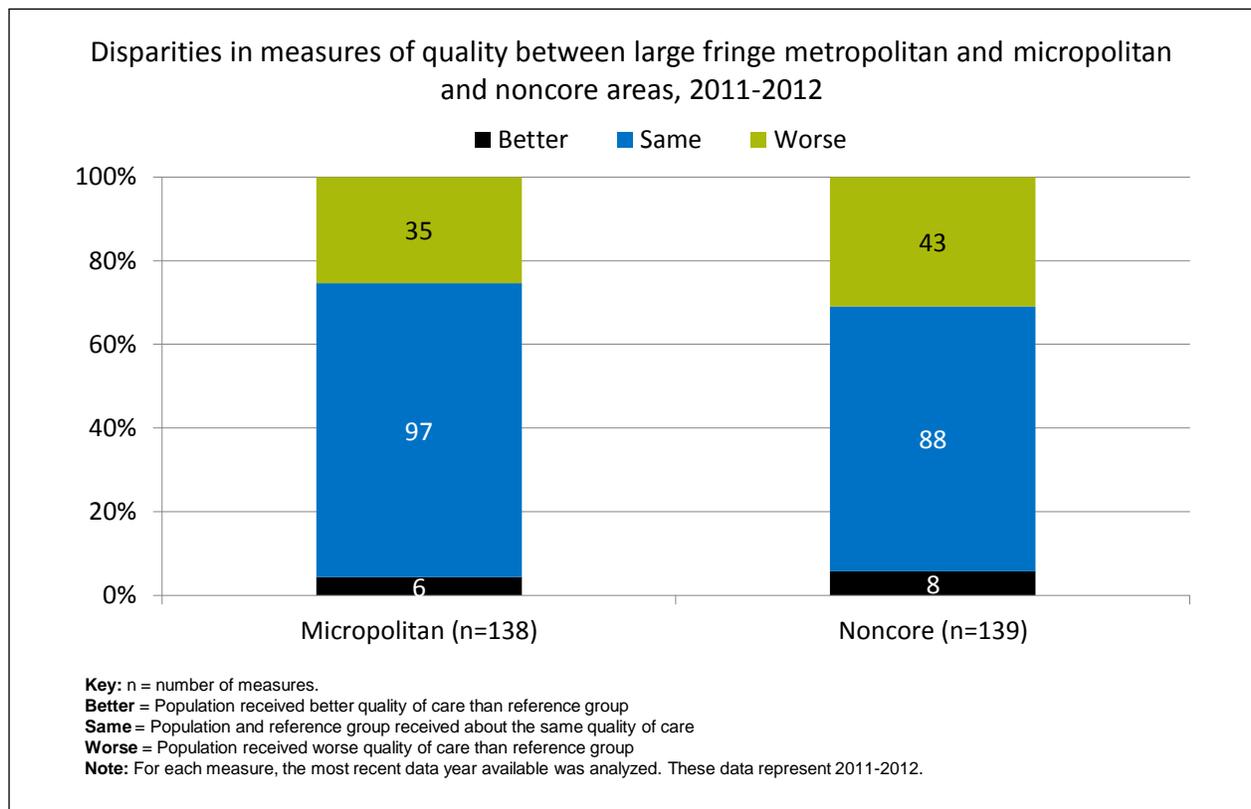
Map Applying NCHS Urban-Rural Classification Scheme



Source: 2013 NCHS Urban-Rural Classification Scheme for Counties.

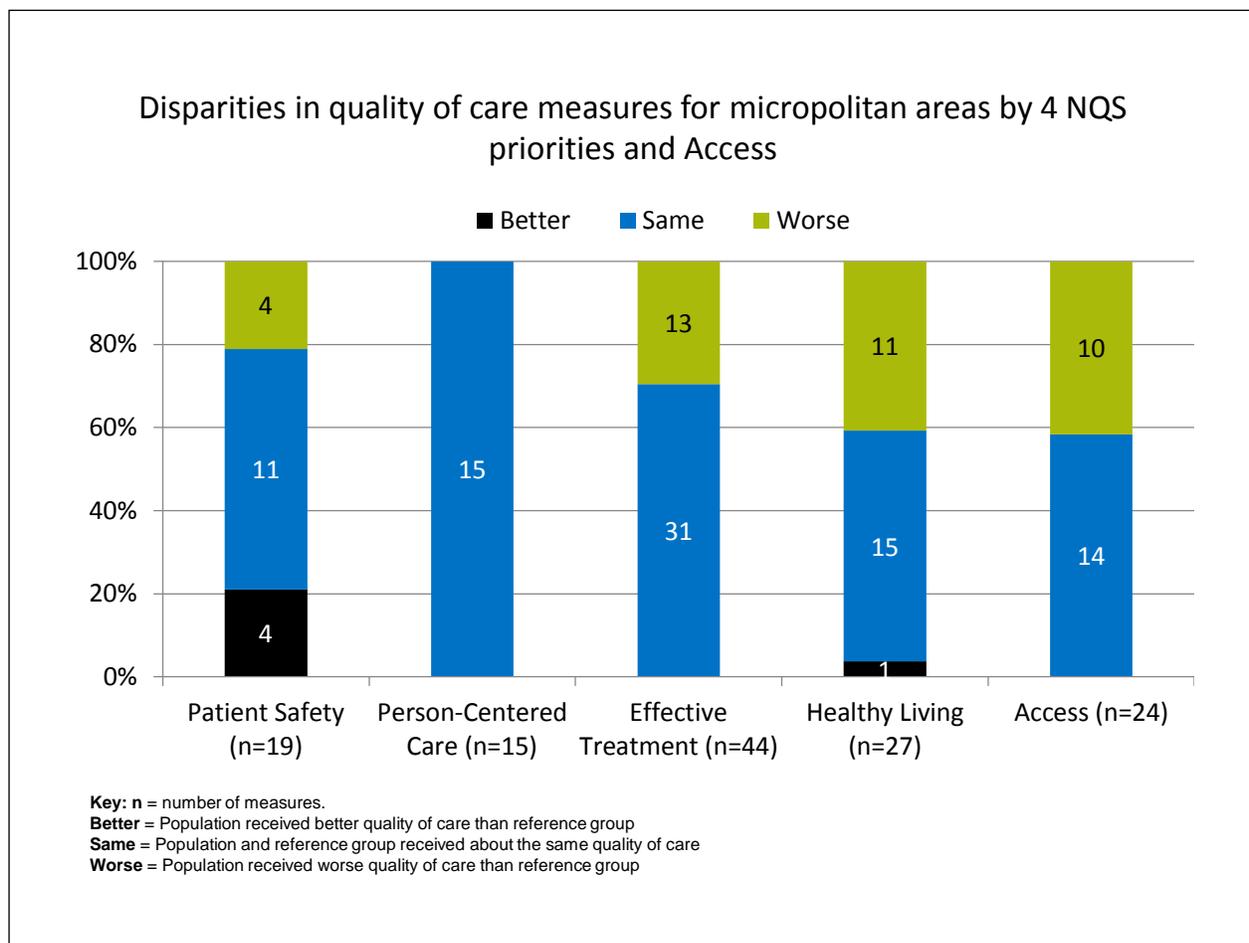
Summary of Trends

Disparities Between Large Fringe Metropolitan and Nonmetropolitan Areas



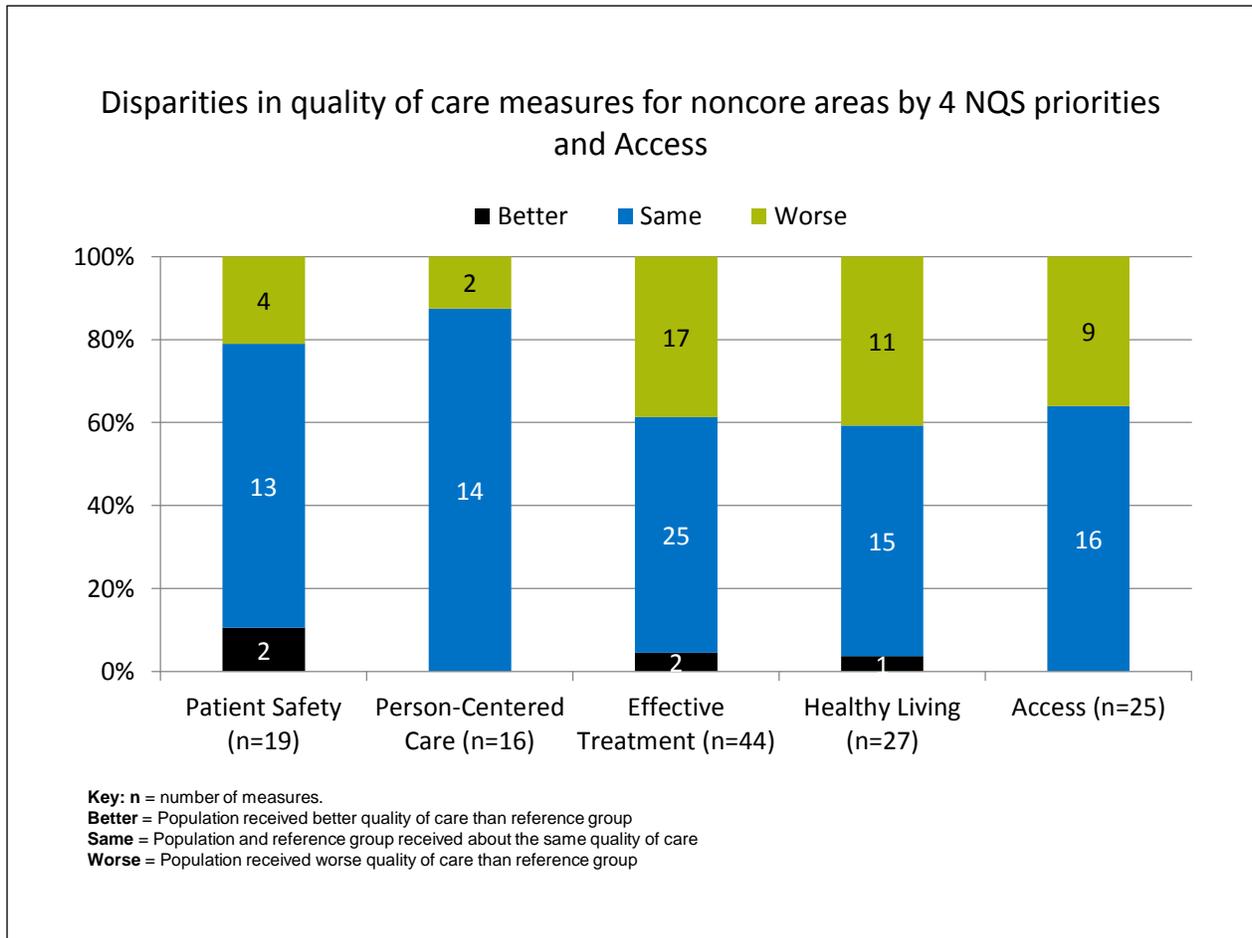
- Residents living in micropolitan areas received:
 - Better quality of care for 4% (6 out of 138) of the measures, compared with those living in large fringe metropolitan areas,
 - Worse quality of care for 25% (35 out of 138) of the measures, compared with those living in large fringe metropolitan areas, and
 - The same quality of care for 71% (97 out of 138) of the measures, compared with those living in large fringe metropolitan areas.
- Residents who live in noncore areas received:
 - Better quality of care for 6% (8 out of 139) of the measures, compared with those living in large fringe metropolitan areas,
 - Worse quality of care for 31% (43 out of 139) of the measures, compared with those living in large fringe metropolitan areas, and
 - The same quality of care for 63% (88 out of 139) of the measures, compared with those living in large fringe metropolitan areas.

Disparities in Quality of Care for Micropolitan Areas



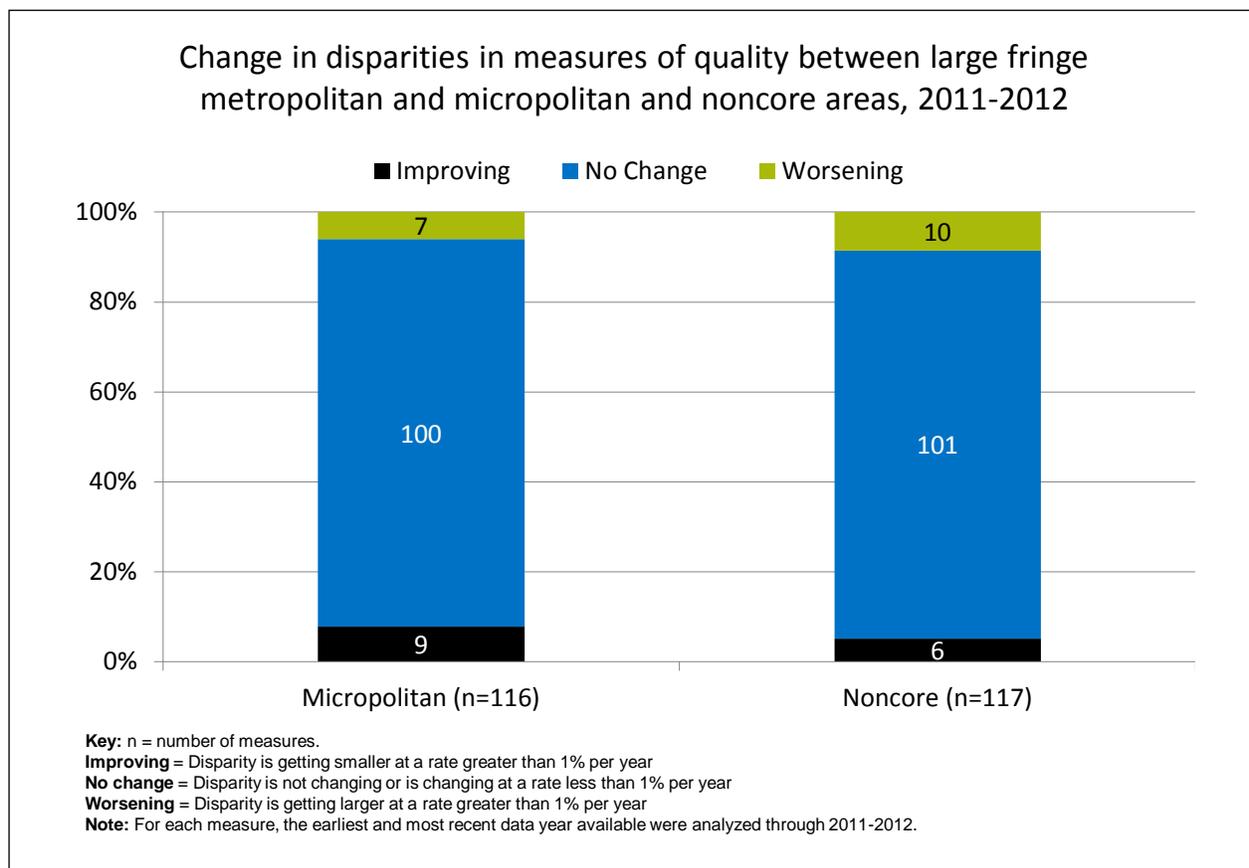
- **Overall:** Residents of micropolitan areas are doing worse than residents of large fringe metropolitan areas on Effective Treatment, Healthy Living, and Access measures compared with Person-Centered Care measures.
- **Patient Safety:** Residents of micropolitan areas received better care for 21%, same care for 58%, and worse care for 21% of the measures compared with residents of large fringe metropolitan areas.
- **Person-Centered Care:** Residents of micropolitan areas received the same care for 100% of the measures as residents of large fringe metropolitan areas.
- **Effective Treatment:** Residents of micropolitan areas received the same care for 70% and worse care for 30% of the measures compared with residents of large fringe metropolitan areas.
- **Healthy Living:** Residents of micropolitan areas received better care for 4%, the same care for 56%, and worse care for 40% of the measures compared with residents of large fringe metropolitan areas.
- **Access:** Residents of micropolitan areas received the same care for 58% and worse care for 42% of the measures compared with residents of large fringe metropolitan areas.
- There are insufficient numbers of reliable measures of Care Coordination and Care Affordability to summarize in this way.

Disparities in Quality of Care for Noncore Areas



- **Overall:** Residents of noncore areas are doing worse than residents of large fringe metropolitan areas on Effective Treatment, Healthy Living, and Access measures compared with Person-Centered Care measures.
- **Patient Safety:** Residents of noncore areas received better care for 11%, the same care for 68%, and worse care for 21% of the measures compared with residents of large fringe metropolitan areas.
- **Person-Centered Care:** Residents of noncore areas received the same care for 88% and worse care for 12% of the measures compared with residents of large fringe metropolitan areas.
- **Effective Treatment:** Residents of noncore areas received better care for 4%, the same care for 57%, and worse care for 39% of the measures compared with residents of large fringe metropolitan areas.
- **Healthy Living:** Residents of noncore areas received better care for 3%, the same care for 56%, and worse care for 41% of the measures compared with residents of large fringe metropolitan areas.
- **Access:** Residents of noncore areas received the same care for 64% and worse care for 36% of the measures compared with residents of large fringe metropolitan areas.
- There are insufficient numbers of reliable measures of Care Coordination and Care Affordability to summarize in this way.

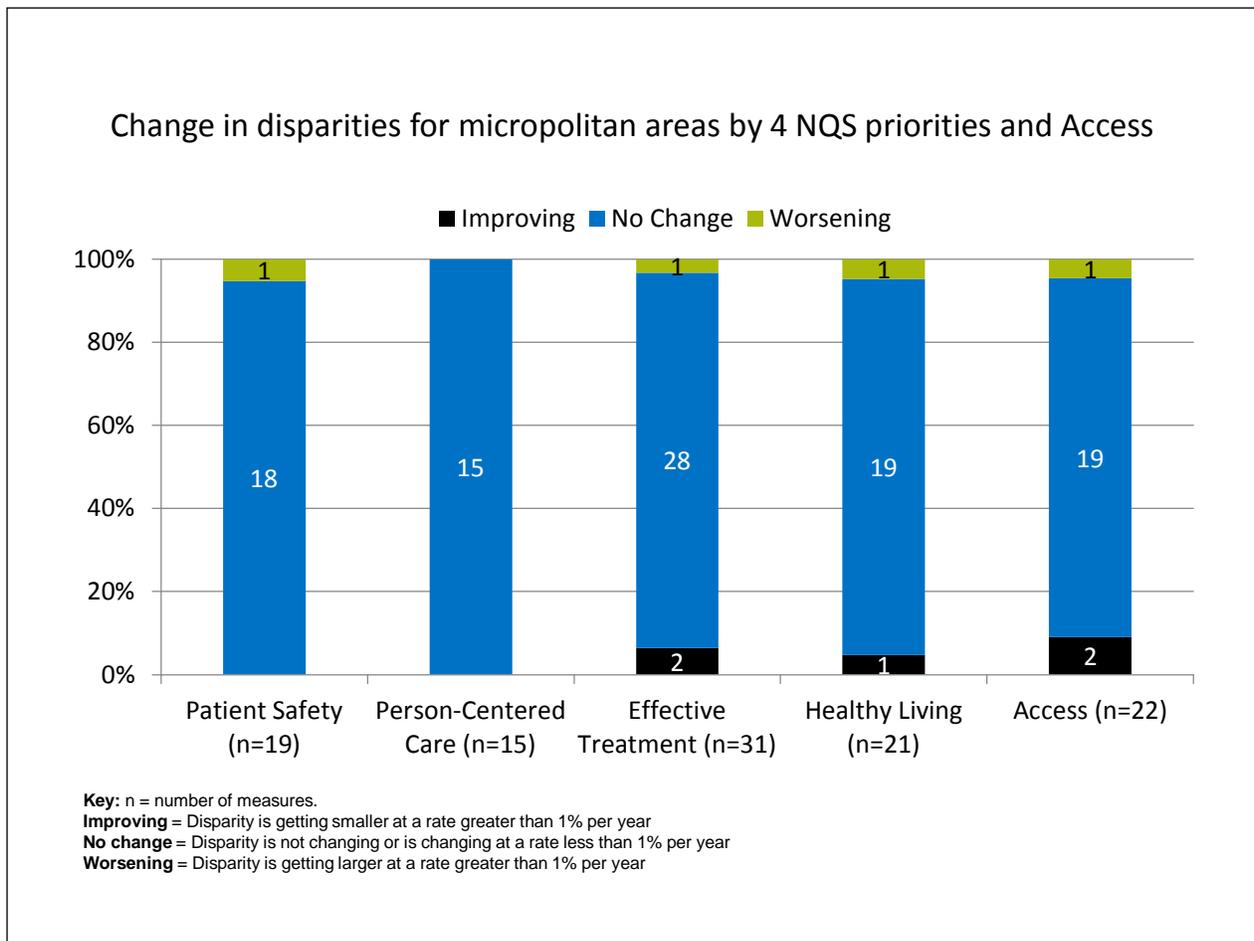
Change in Disparities Between Large Fringe Metropolitan and Nonmetropolitan Areas



- For residents of micropolitan areas:
 - Disparities were getting smaller for 8% (9 out of 116) of the measures, compared with residents of large fringe metropolitan areas,
 - Disparities were getting larger for 6% (7 out of 116) of the measures, compared with residents of large fringe metropolitan areas, and
 - Disparities did not change for 86% (100 out of 116) of the measures, compared with residents of large fringe metropolitan areas.

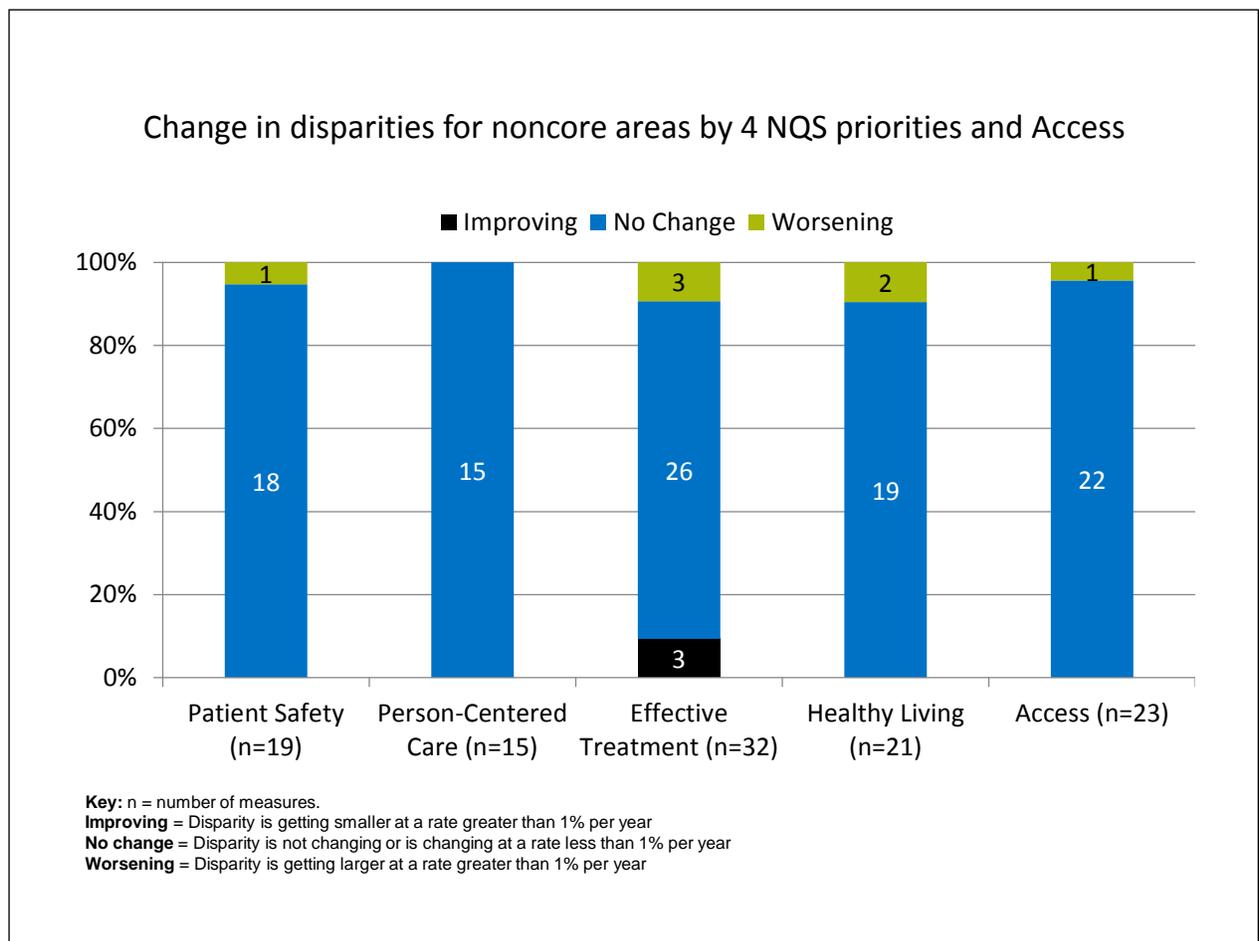
- For residents of noncore areas:
 - Disparities were getting smaller for 5% (6 out of 117) of the measures, compared with residents of large fringe metropolitan areas,
 - Disparities were getting larger for 9% (10 out of 117) of the measures, compared with residents of large fringe metropolitan areas, and
 - Disparities did not change for 86% (101 out of 117) of the measures, compared with residents of large fringe metropolitan areas.

Change in Disparities for Micropolitan Areas



- **Overall:** There is no clear pattern in the reduction of disparities between people living in micropolitan areas and people living in large fringe metropolitan areas.
- **Patient Safety:** Disparities got larger for 5% of the measures and there was no change in 95% of the measures.
- **Person-Centered Care:** There was no change in disparities for 100% of the measures.
- **Effective Treatment:** Disparities got smaller for 7% of the measures, there was no change in 90%, and disparities got larger for 3% of the measures.
- **Healthy Living:** Disparities got smaller for 5% of the measures, there was no change in 90%, and disparities got larger for 5% of the measures.
- **Access:** Disparities got smaller for 9% of the measures, there was no change in 86%, and disparities got larger for 5% of the measures.
- There are insufficient numbers of reliable measures of Care Coordination and Care Affordability to summarize in this way.

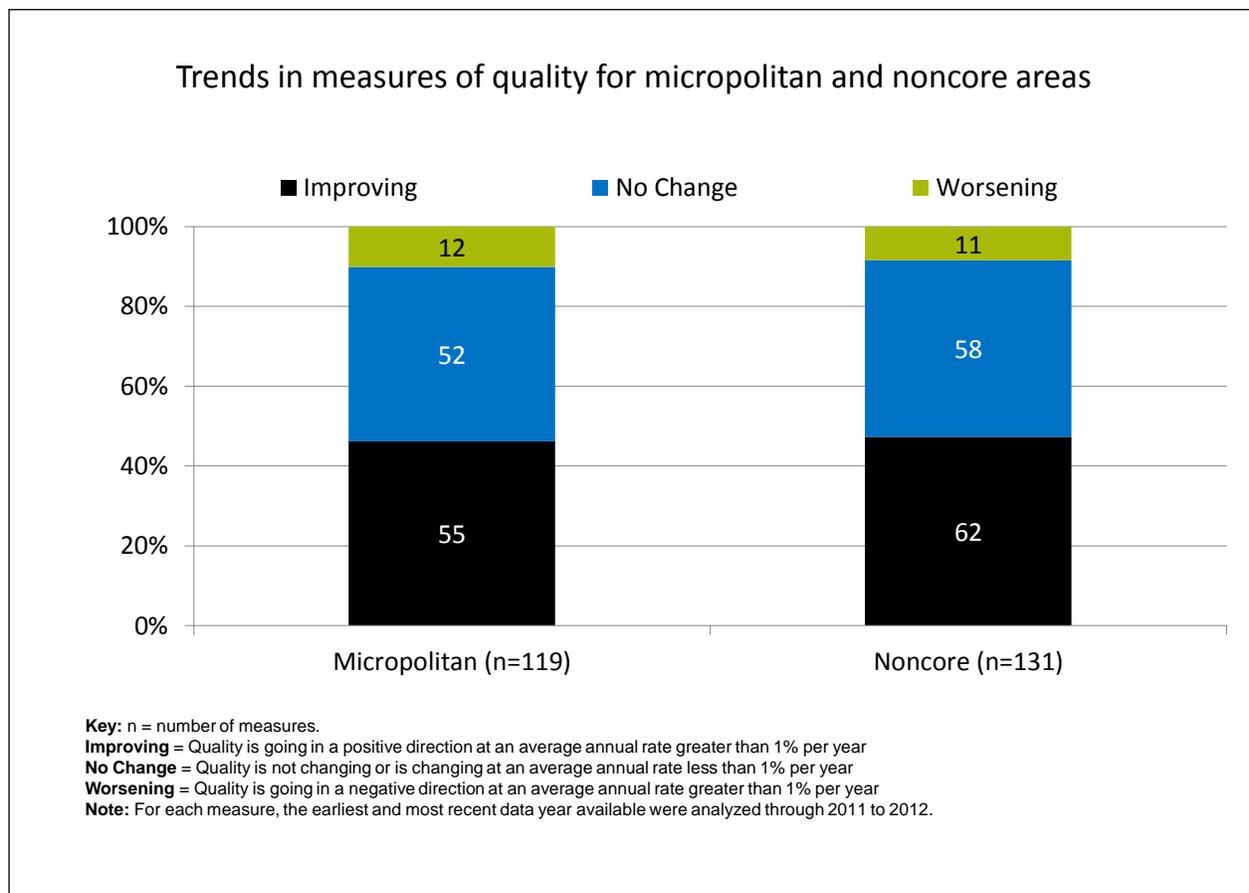
Change in Disparities for Noncore Areas



- **Overall:** There is no clear pattern in the reduction of disparities between people living in noncore areas and people living in large fringe metropolitan areas.
- **Patient Safety:** Disparities got larger for 5% and did not change for 95% of the measures.

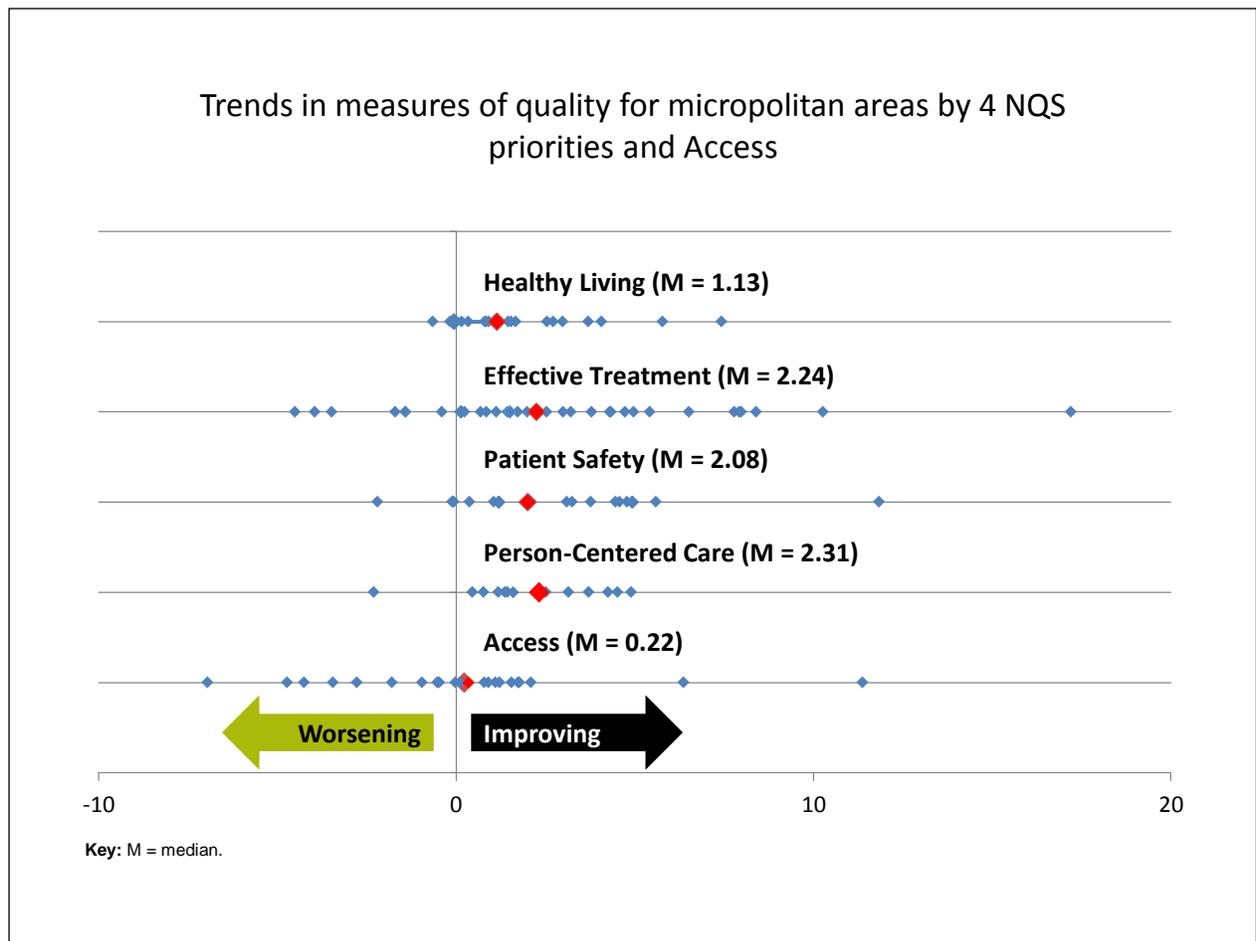
- **Person-Centered Care:** There was no change in disparities in 100% of the measures.
- **Effective Treatment:** Disparities got smaller for 9% of the measures, there was no change in 82%, and disparities got larger for 9% of the measures.
- **Healthy Living:** Disparities got larger for 10% and did not change for 90% of the measures.
- **Access:** Disparities got larger for 4% and did not change for 96% of the measures.
- There are insufficient numbers of reliable measures of Care Coordination and Care Affordability to summarize in this way.

Trends in Measures of Quality for Nonmetropolitan Areas



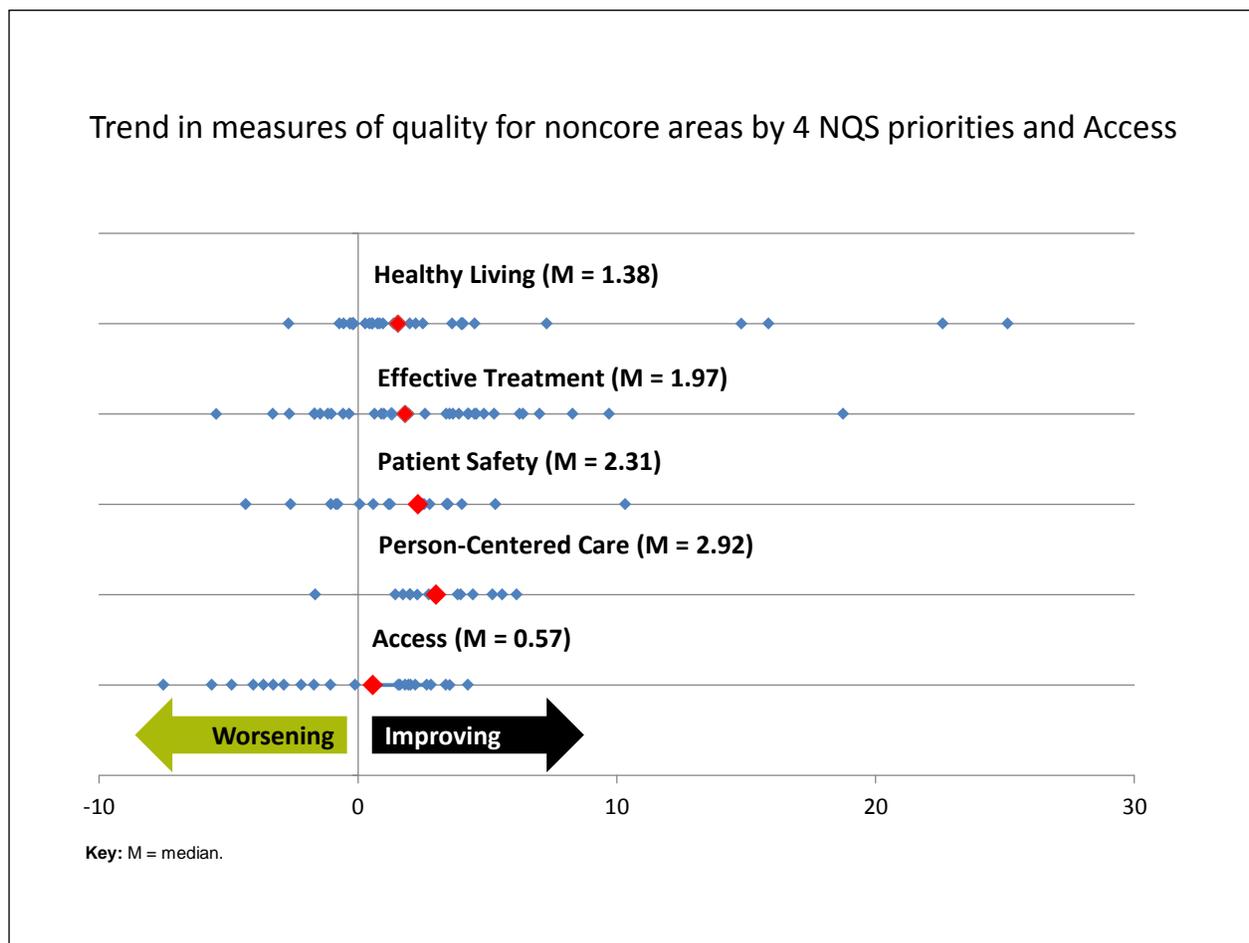
- The quality of care for residents living in micropolitan areas:
 - Improved for 46% (55 out of 119) of the measures,
 - Worsened for 10% (12 out of 119) of the measures, and
 - Did not change for 44% (52 out of 119) of the measures.
- The quality of care for residents living in noncore areas:
 - Improved for 48% (62 out of 131) of the measures
 - Worsened for care for 8% (11 out of 131) of the measures, and
 - Did not change for 44% (58 out of 131) of the measures.

Trends in Measures of Quality for Micropolitan Areas



- Each point represents one measure. The large red diamonds indicate median values. Quality of health care has improved steadily but the median pace of change varies across National Quality Strategy (NQS) priorities and Access.
- Median change in quality for residents of micropolitan areas was:
 - 1.13% per year among measures of Healthy Living.
 - 2.24 per year among measures of Effective Treatment.
 - 2.08% per year among measures of Patient Safety.
 - 2.31% per year among measures of Person-Centered Care.
 - 0.22% per year among measures of Access.
- There are insufficient numbers of reliable measures of Care Coordination and Care Affordability to summarize in this way.

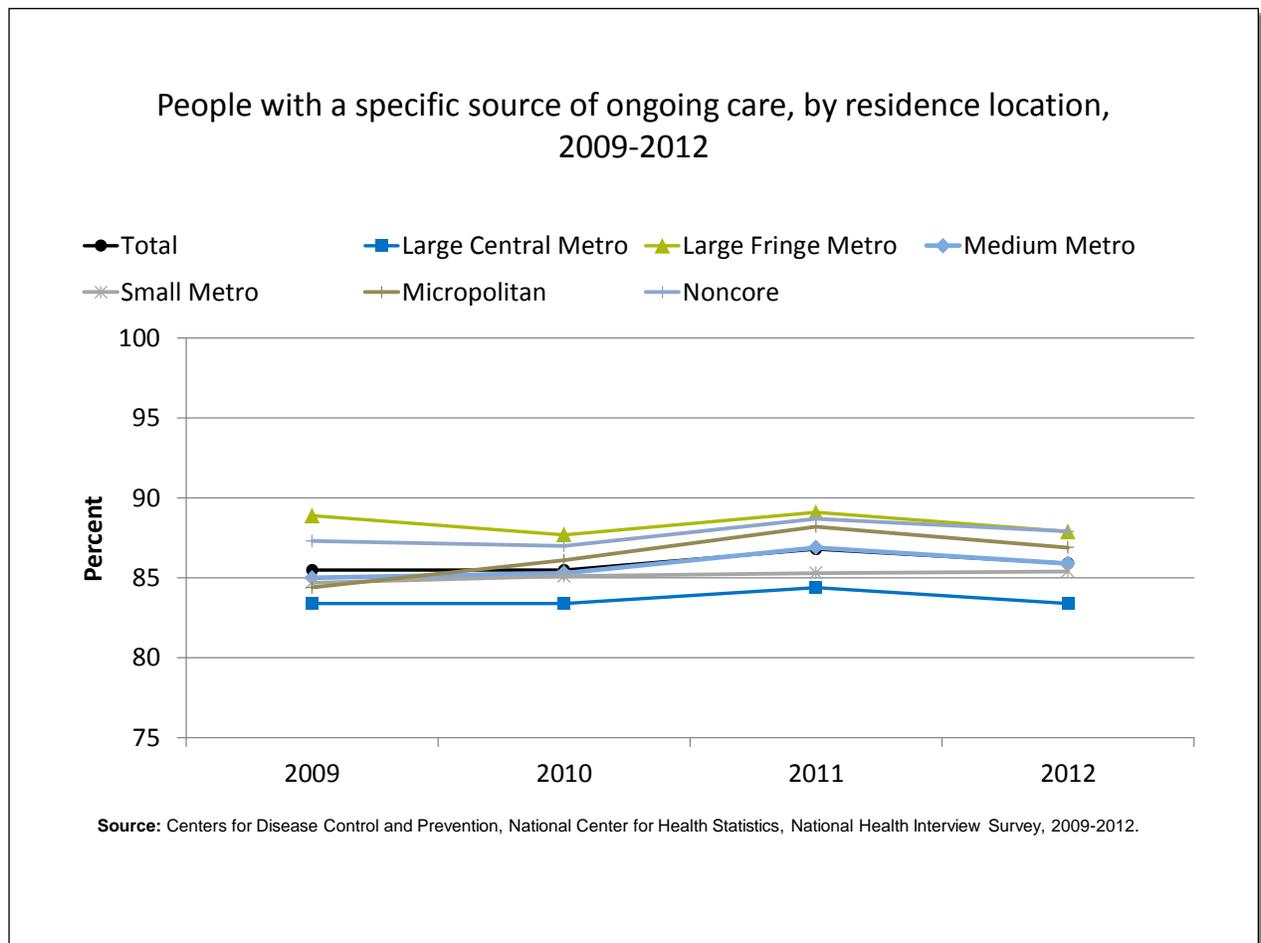
Trends in Measures of Quality for Noncore Areas



- Each point represents one measure. The large red diamonds indicate median values. Quality of health care has improved steadily but the median pace of change varies across National Quality Strategy (NQS) priorities and Access.
- Median change in quality for residents on noncore areas was:
 - 1.38% per year among measures of Healthy Living.
 - 1.97 per year among measures of Effective Treatment.
 - 2.31% per year among measures of Patient Safety.
 - 2.92% per year among measures of Person-Centered Care.
 - 0.57% per year among measures of Access.
- There are insufficient numbers of reliable measures of Care Coordination and Care Affordability to summarize in this way.

Access to Health Care

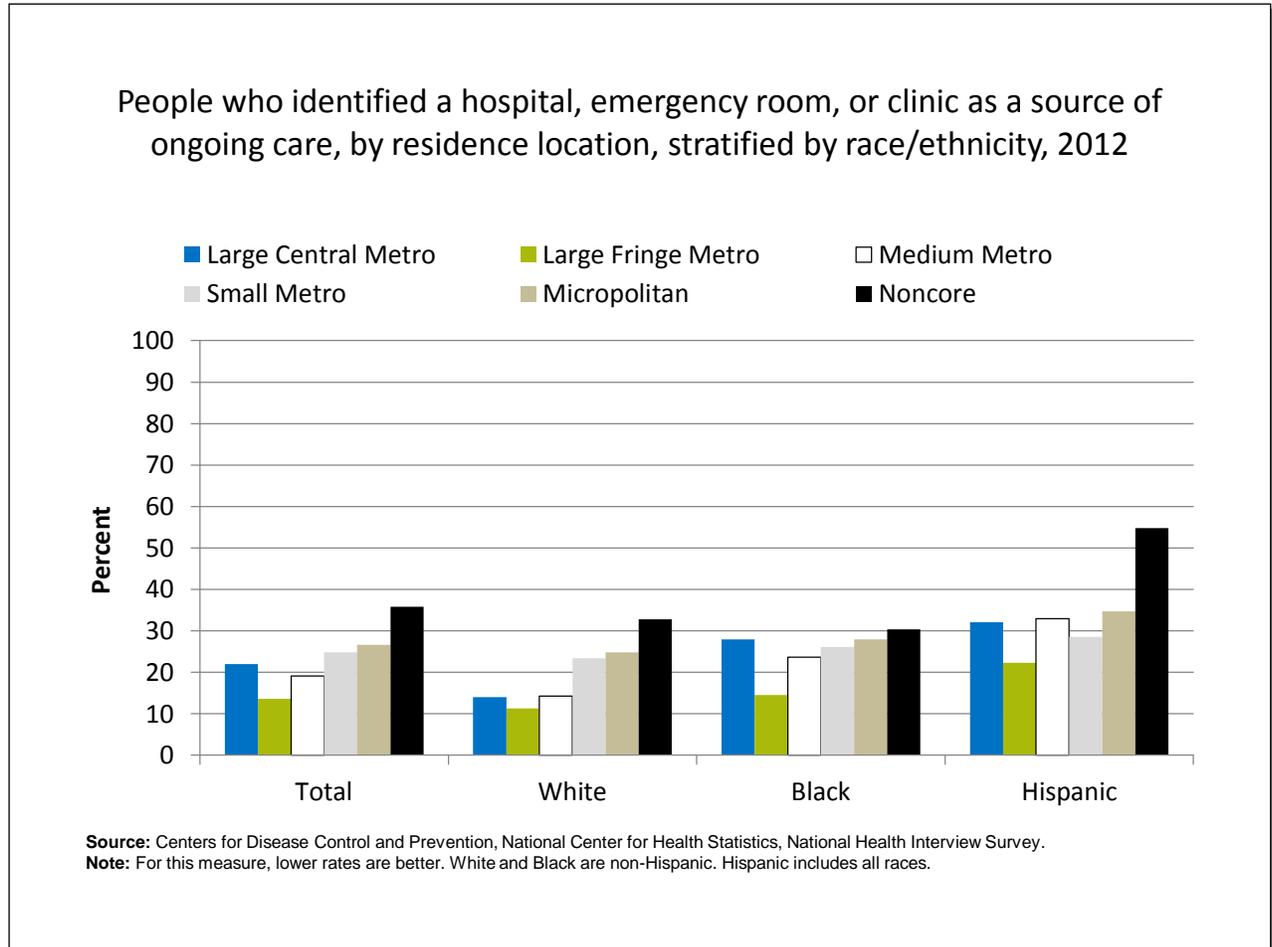
Specific Source of Ongoing Care



- **Importance:** People with a usual source of care have better health outcomes and fewer disparities and costs (Healthy People 2020). Having a usual place of care and a usual provider are associated with an increased likelihood of receiving preventive services and recommended screenings compared with having no usual source of care (Blewett, et al., 2008).
- **Overall Rate:** In 2012, the percentage of people with a specific source of ongoing care was 85.9%.
- **Change Over Time:** From 2009 to 2012, the percentage of people with a specific source of ongoing care improved for residents of small metropolitan areas.
- **Groups With Disparities:**
 - In 2012, the percentage of people with a specific source of ongoing care was lower for residents of large central metropolitan, medium metropolitan, and small metropolitan areas compared with residents of large fringe metropolitan areas.

- In all years, the percentage of people with a specific source of ongoing care was lower for residents of large central metropolitan, medium metropolitan, and small metropolitan areas compared with residents of large fringe metropolitan areas.

Hospital, Emergency Room, or Clinic as a Source of Ongoing Care

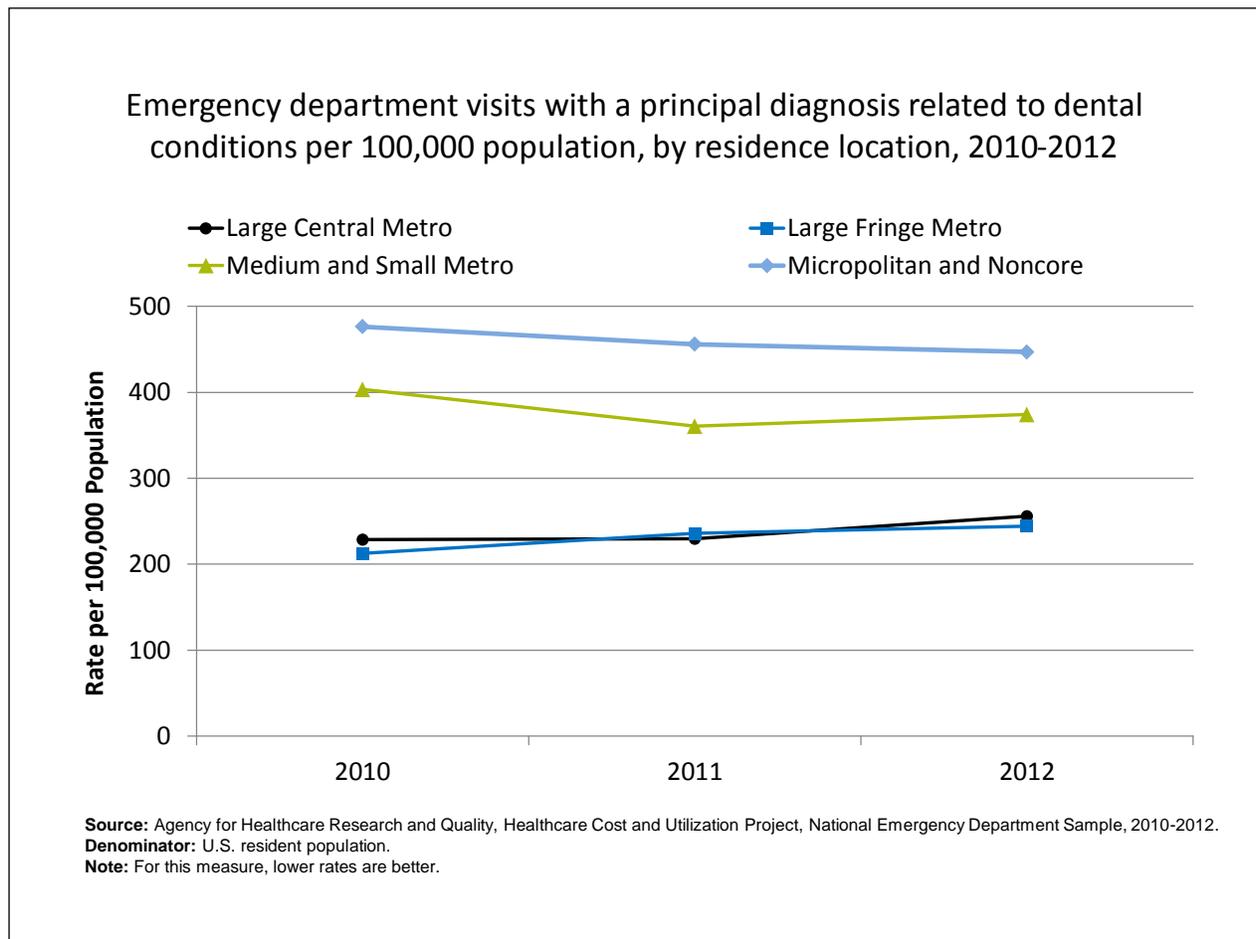


- **Overall Rate:** In 2012, the percentage of people who identified a hospital, emergency room, or clinic as a source of ongoing care was higher for residents of large central metropolitan, medium metropolitan, small metropolitan, micropolitan, and noncore areas compared with residents of large fringe metropolitan areas.
- **Groups With Disparities:**
 - In 2012, the percentage of people who identified a hospital, emergency room, or clinic as a source of ongoing care was higher for residents of large central metropolitan, medium metropolitan, small metropolitan, micropolitan, and noncore areas compared with residents of large fringe metropolitan areas among non-Hispanic Whites and non-Hispanic Blacks.
 - In 2012, the percentage of people who identified a hospital, emergency room, or clinic as a source of ongoing care was higher for residents of large central metropolitan, medium

metropolitan, micropolitan, and noncore areas compared with residents of large fringe metropolitan areas among Hispanics.

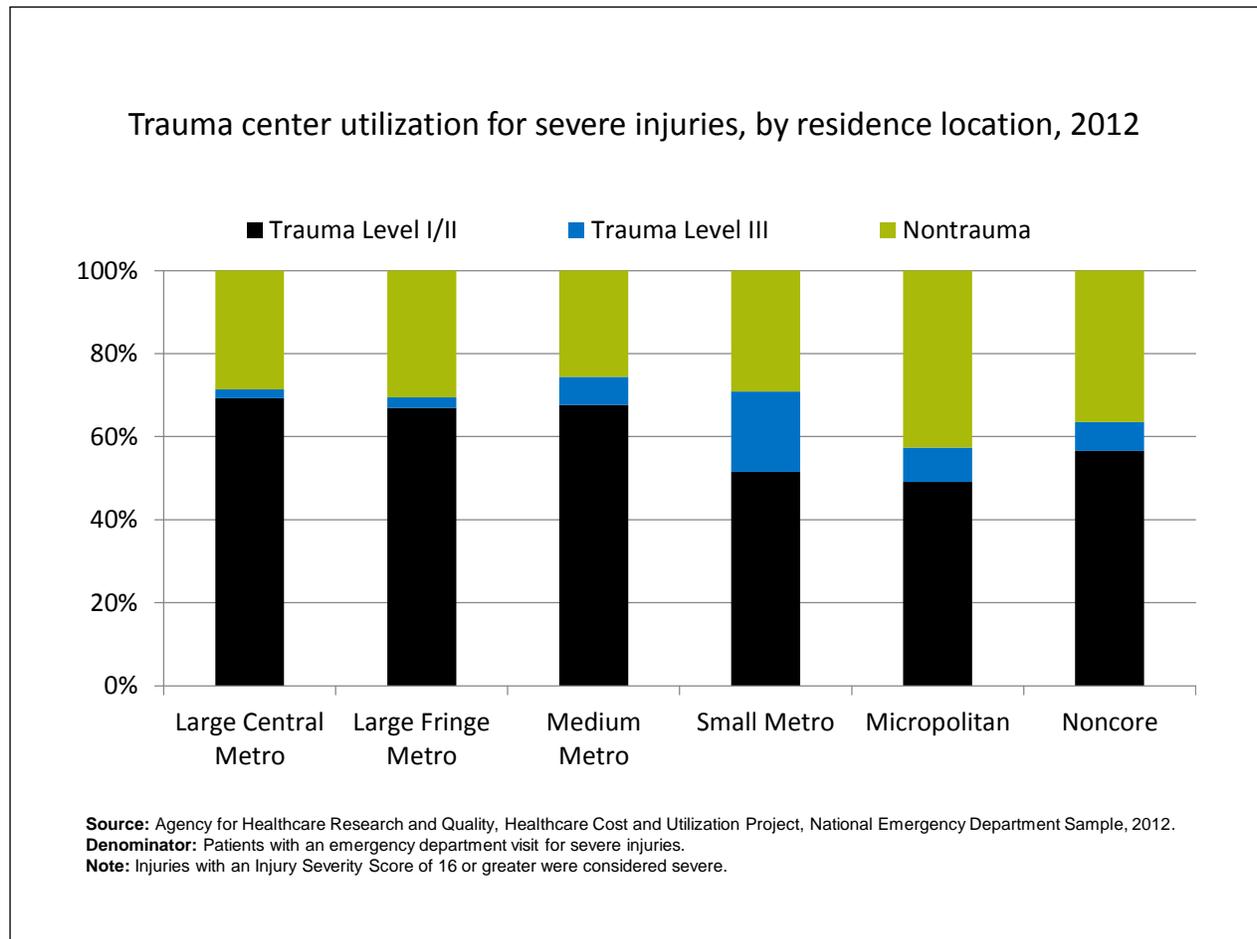
- In 2012, more than half of Hispanics living in noncore areas identified a hospital, emergency room, or clinic as a source of ongoing care.

Emergency Department Visits With a Principal Diagnosis Related to Dental Conditions



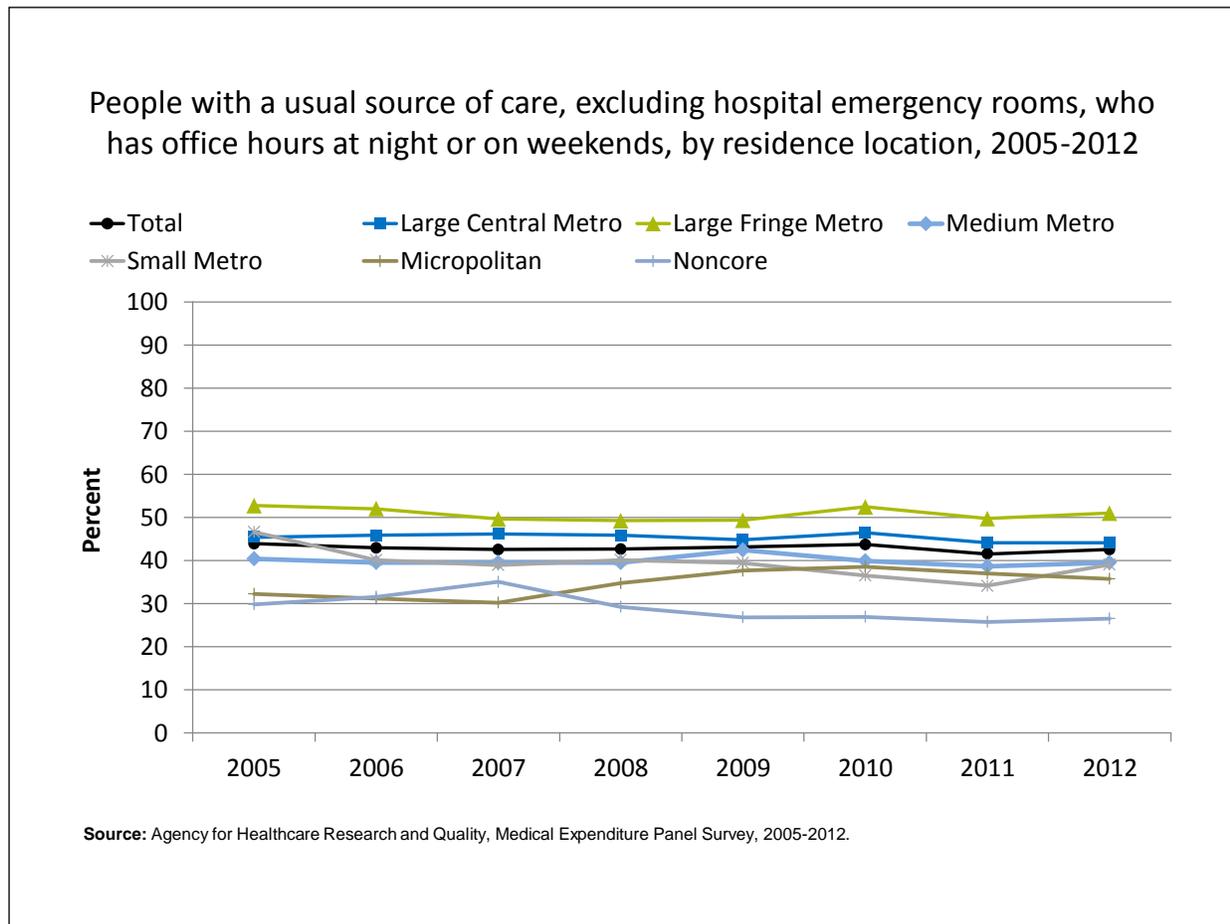
- **Importance:** Patients with limited access to community dental providers may seek dental care in emergency departments.
- **Overall Rate:** In 2012, the rate of emergency department visits for dental conditions was 447 per 100,000 population among residents of micropolitan and noncore areas.
- **Groups With Disparities:** In all years, use of emergency departments for dental conditions was higher among residents of micropolitan and noncore areas and of medium and small metropolitan areas than among residents of large fringe metropolitan areas (suburbs).

Trauma Center Utilization



- **Importance:** Most patients with severe injuries are treated in Level I or II trauma centers, but access to trauma centers may be more difficult for residents of rural areas.
- **Overall Rate:** In 2012, 63% of all patients with severe injuries were treated in Level I or II trauma centers (data not shown).
- **Groups With Disparities:** Residents of micropolitan and noncore areas with severe injuries were less likely to be treated in Level I or II trauma centers and more likely to be treated in nontrauma emergency departments compared with residents of large fringe metropolitan areas (suburbs), but some of these difference were not statistically significant due to small sample sizes.

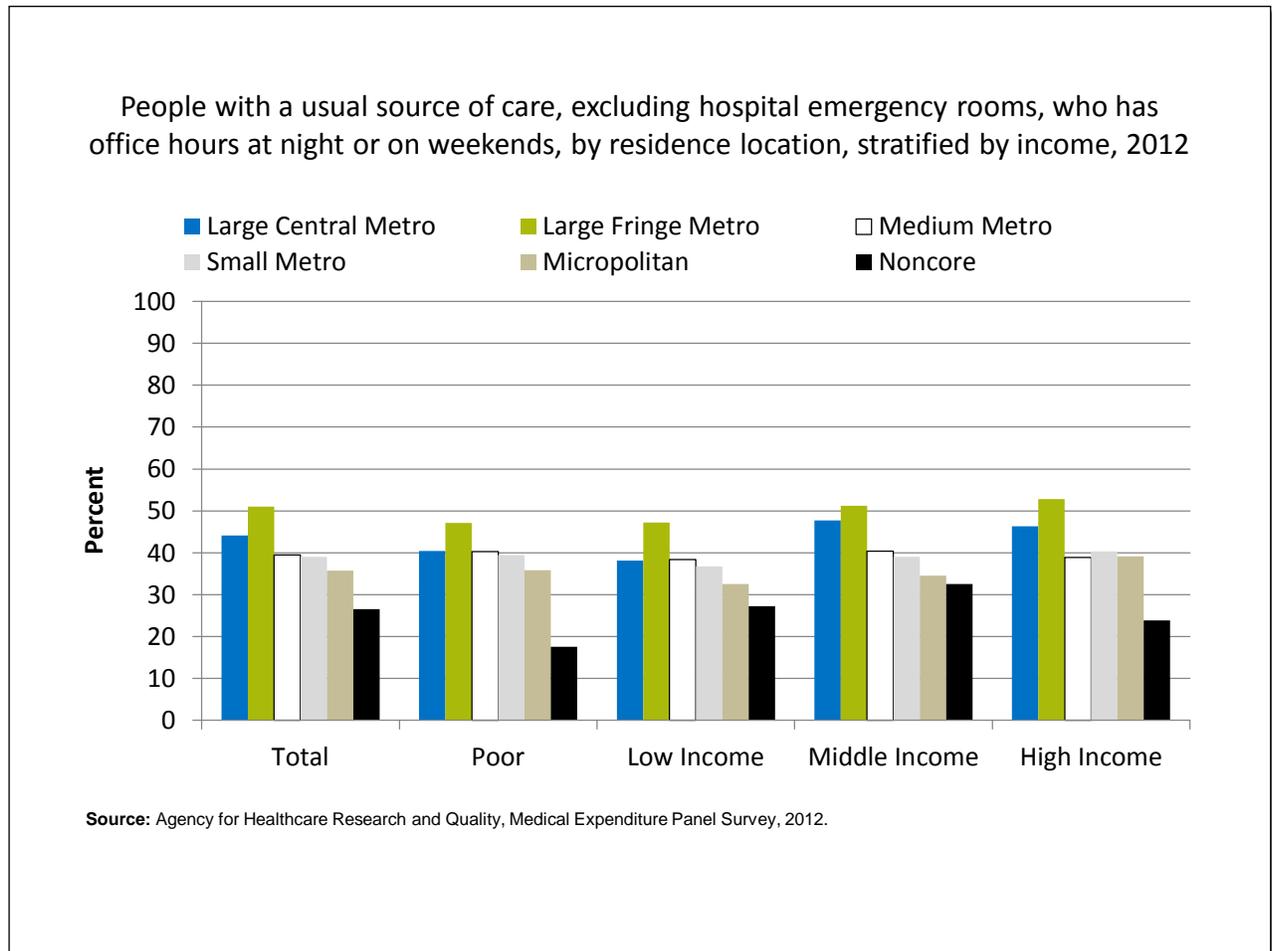
Usual Source of Care With Office Hours at Night or on Weekends



- **Overall Rate:** In 2012, 42.5% of people had a usual source of care, excluding hospital emergency rooms, with office hours at night or on weekends.
- **Change Over Time:** From 2005 to 2012, the percentage of people with a usual source of care, excluding hospital emergency rooms, who had office hours at night or on weekends, improved for people living in micropolitan areas and worsened for those living in small metropolitan areas.
- **Groups With Disparities:**
 - In 2012, the percentage of people with a usual source of care, excluding hospital emergency rooms, who had office hours at night or on weekends was lower for people living in large central metropolitan, medium metropolitan, small metropolitan, micropolitan, and noncore areas compared with those living in large fringe metropolitan areas.
 - In all years, the percentage of people with a usual source of care, excluding hospital emergency rooms, who had office hours at night or on weekends was lower for people living in medium metropolitan, micropolitan, and noncore areas compared with those living in large fringe metropolitan areas.

- In 7 of 8 years, the percentage of people with a usual source of care, excluding hospital emergency rooms, who had office hours at night or on weekends was lower for people living in small metropolitan areas compared with those living in large fringe metropolitan areas.
- In 5 of 8 years, the percentage of people with a usual source of care, excluding hospital emergency rooms, who had office hours at night or one weekends was lower for people living in large central metropolitan areas compared with those living in large fringe metropolitan areas.

Usual Source of Care With Office Hours at Night or on Weekends



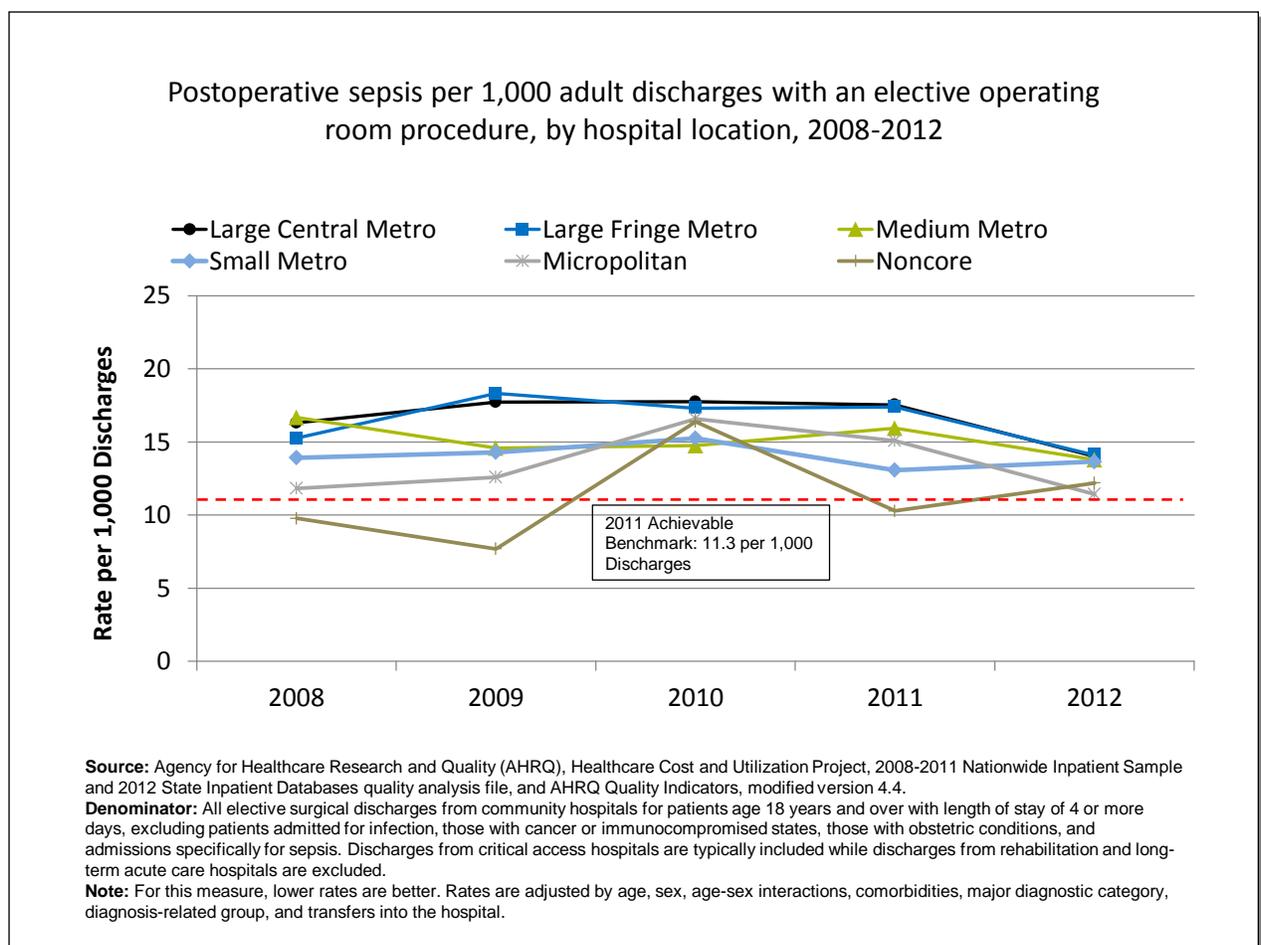
- **Overall Rate:** In 2012, the percentage of people with a usual source of care, excluding hospital emergency rooms, who had office hours at night or on weekends was lower for residents of large central metropolitan, medium metropolitan, small metropolitan, micropolitan, and noncore areas compared with residents of large fringe metropolitan areas.
- **Groups With Disparities:**
 - In 2012, among people with middle and high income, the percentage of people with a usual source of care, excluding hospital emergency rooms, who had office hours at night or on weekends was lower for residents of medium metropolitan, small metropolitan,

micropolitan, and noncore areas compared with residents of large fringe metropolitan areas.

- In 2012, among people with low income, the percentage of people with a usual source of care, excluding hospital emergency rooms, who had office hours at night or on weekends was lower for residents of large central metropolitan, small metropolitan, micropolitan, and noncore areas compared with residents of large fringe metropolitan areas.
- In 2012, among poor people, the percentage of people with a usual source of care, excluding hospital emergency rooms, who had office hours at night or on weekends was lower for residents of large central metropolitan, micropolitan, and noncore areas compared with residents of large fringe metropolitan areas.

Patient Safety

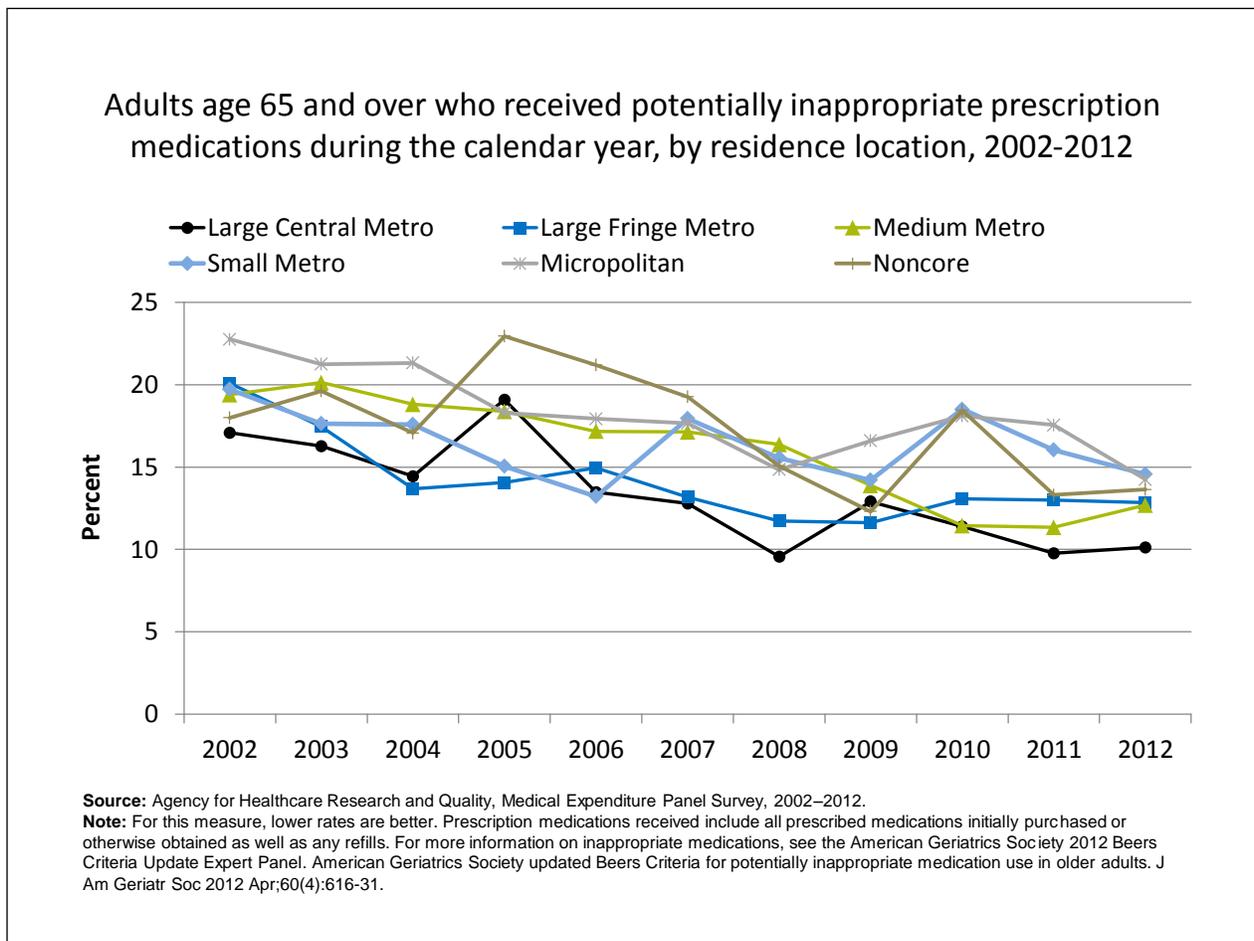
Postoperative Sepsis



- **Importance:** Infections acquired during hospital care—also known as nosocomial infections—are among the most common complications of hospital care. Patients are particularly vulnerable to healthcare-associated infections after surgery. Hospitals in more rural areas may refer patients to hospitals in urban areas for complex surgeries.
- **Change Over Time:** From 2008 through 2012, the rate of postoperative sepsis did not change overall (data not shown) or for any hospital location group.

- **Groups With Disparities:** From 2008 to 2011, hospitals in noncore, micropolitan, and small metropolitan areas had lower rates of postoperative sepsis than hospitals in large fringe metropolitan areas (suburbs), but differences were often not statistically significant.
- **Achievable Benchmark:**
 - The 2011 top 4 State achievable benchmark was 11.3 per 1,000 discharges. The top 4 States were Alaska, Minnesota, Montana, and Wisconsin.
 - At current rates of improvement, the benchmark could be met in 5 to 10 years by hospitals in most metropolitan areas.
 - While having lower rates, hospitals in noncore and micropolitan areas show no movement toward the benchmark.

Potentially Inappropriate Prescription Medications

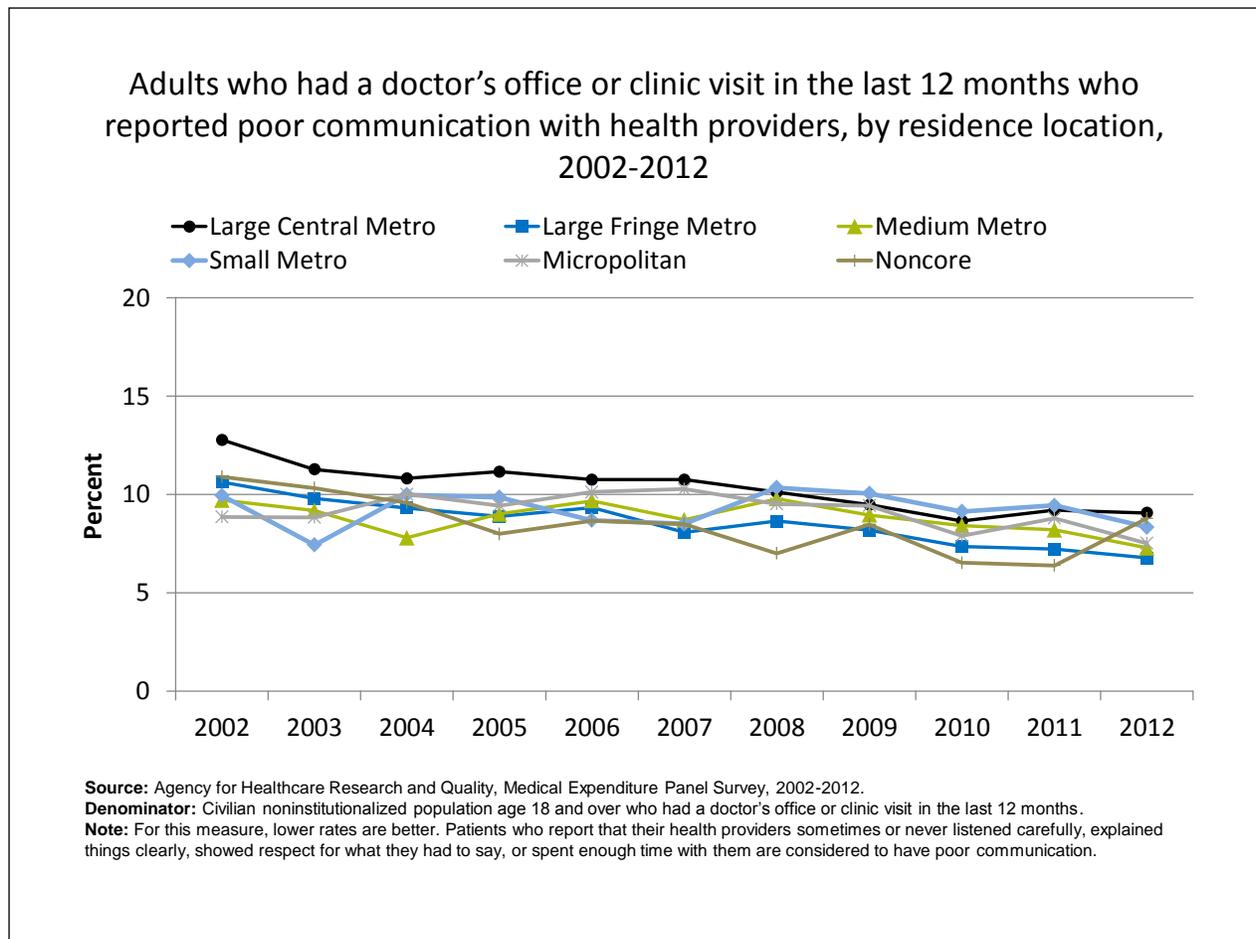


- **Importance:** Some drugs that are prescribed for older patients are known to be potentially harmful for this age group.
- **Change Over Time:** From 2002 to 2012, the percentage of adults age 65 years and over who received potentially inappropriate prescription medications decreased overall (data not shown) and for all residence location groups except residents of small metropolitan areas.

- Groups With Disparities:** In almost all years, the percentage of adults age 65 years and over who received potentially inappropriate prescription medications was higher among residents of noncore, micropolitan, and small metropolitan areas than among residents of large fringe metropolitan areas (suburbs), but these difference were often not statistically significant due to small sample sizes.

Person- and Family-Centered Care

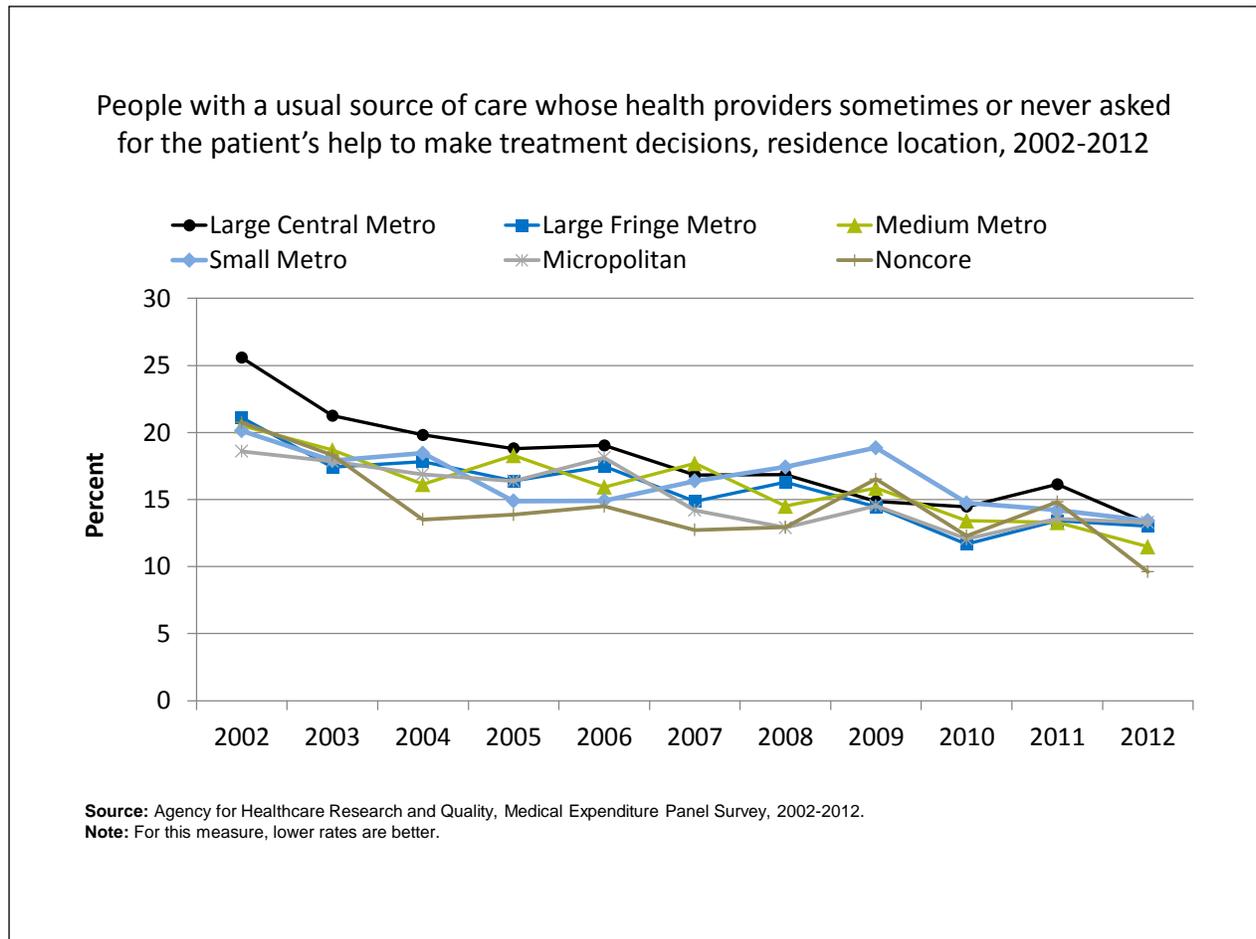
Poor Communication With Health Providers



- Importance:** Optimal health care requires good communication between patients and providers, yet barriers to provider-patient communication are common. To provide all patients with the best possible care, providers need to understand patients' diverse health care needs and preferences and communicate clearly with patients about their care.
- Change Over Time:** From 2002 to 2012, the percentage of adults who reported poor communication with health providers decreased overall and for all residence location groups except residents of micropolitan and small metropolitan areas.

- **Groups With Disparities:** In almost all years, the percentage of adults who reported poor communication with health providers was higher among residents of micropolitan and large central metropolitan areas than among residents of large fringe metropolitan areas (suburbs), but these difference were often not statistically significant due to small sample sizes.

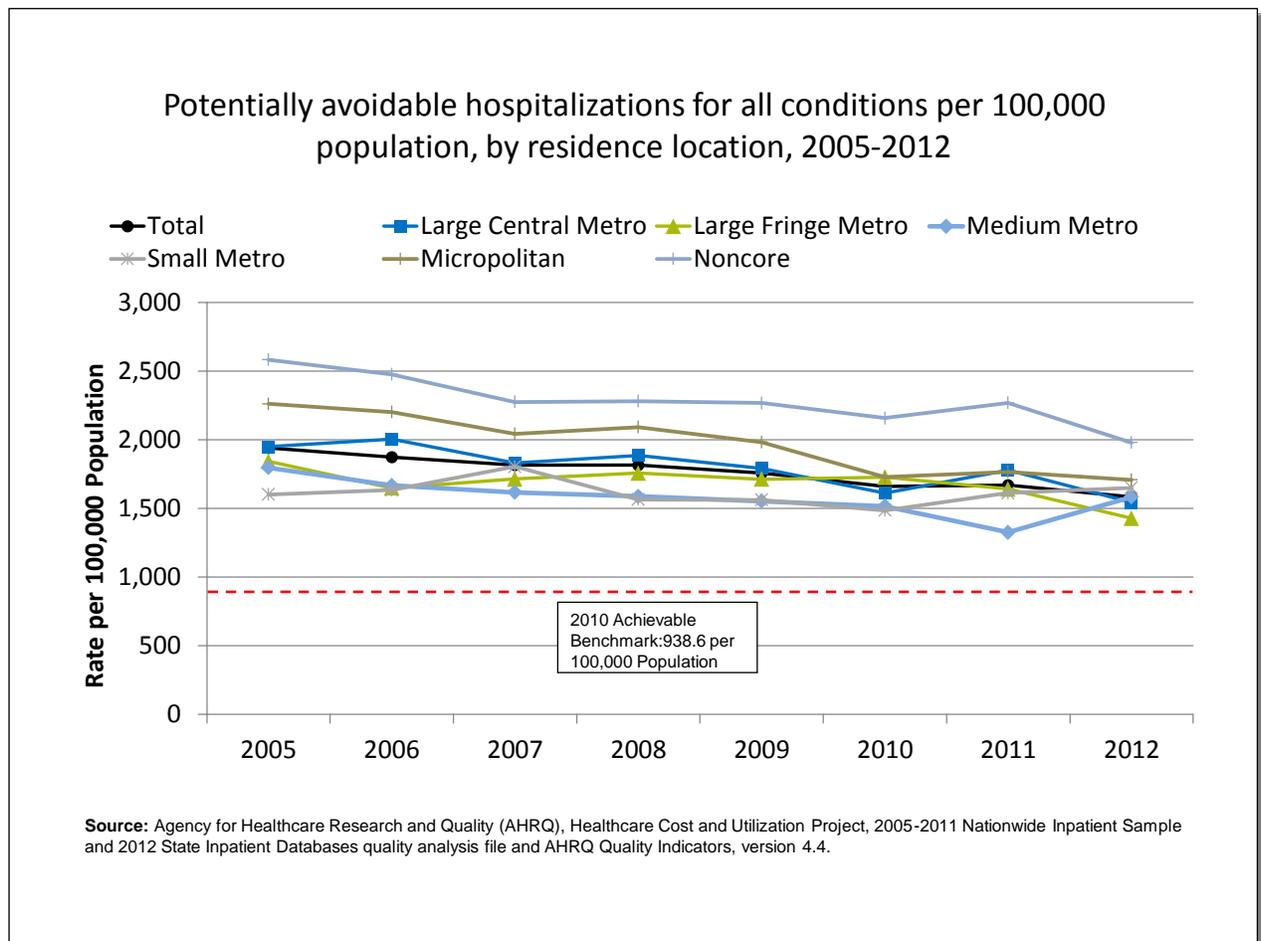
Providers Who Asked for Patient's Help With Treatment Decisions



- **Importance:** The increasing prevalence of chronic diseases has placed more responsibility on patients, since conditions such as diabetes and hypertension require self-management. Patients need to be provided with information that allows them to make educated decisions and feel engaged in their treatment.
- **Change Over Time:** From 2002 to 2012, the percentage of people whose health care providers sometimes or never asked them to help make treatment decisions decreased overall and for all residence location groups.
- **Groups With Disparities:** In almost all years, the percentage of people whose health care providers sometimes or never asked them to help make treatment decisions was higher among residents of large central metropolitan areas than among residents of large fringe metropolitan areas (suburbs), but these difference were often not statistically significant due to small sample sizes.

Communication and Care Coordination

Potentially Avoidable Hospitalizations



- **Importance:** Hospitalizations due to ambulatory care-sensitive conditions (ACSCs) such as hypertension and pneumonia should be largely prevented if ambulatory care is provided in a timely and effective manner. Evidence suggests that effective primary care is associated with lower ACSC hospitalization (also referred to as avoidable hospitalization) (Gao, et al., 2014).
- **Overall Rate:** In 2012, the overall rate of potentially avoidable hospitalizations for all conditions was 1,582 per 100,000 population.
- **Change Over Time:**
 - From 2005 through 2012, the overall rate of potentially avoidable hospitalizations for all conditions improved from 1,941 per 100,000 population to 1,582 per 100,000 population.
 - The rate of potentially avoidable hospitalizations for all conditions improved for all residence locations except small metropolitan: large central metropolitan, large fringe metropolitan, medium metropolitan, micropolitan, and noncore areas.
 - The disparity between residents living in micropolitan and large fringe metropolitan areas narrowed.

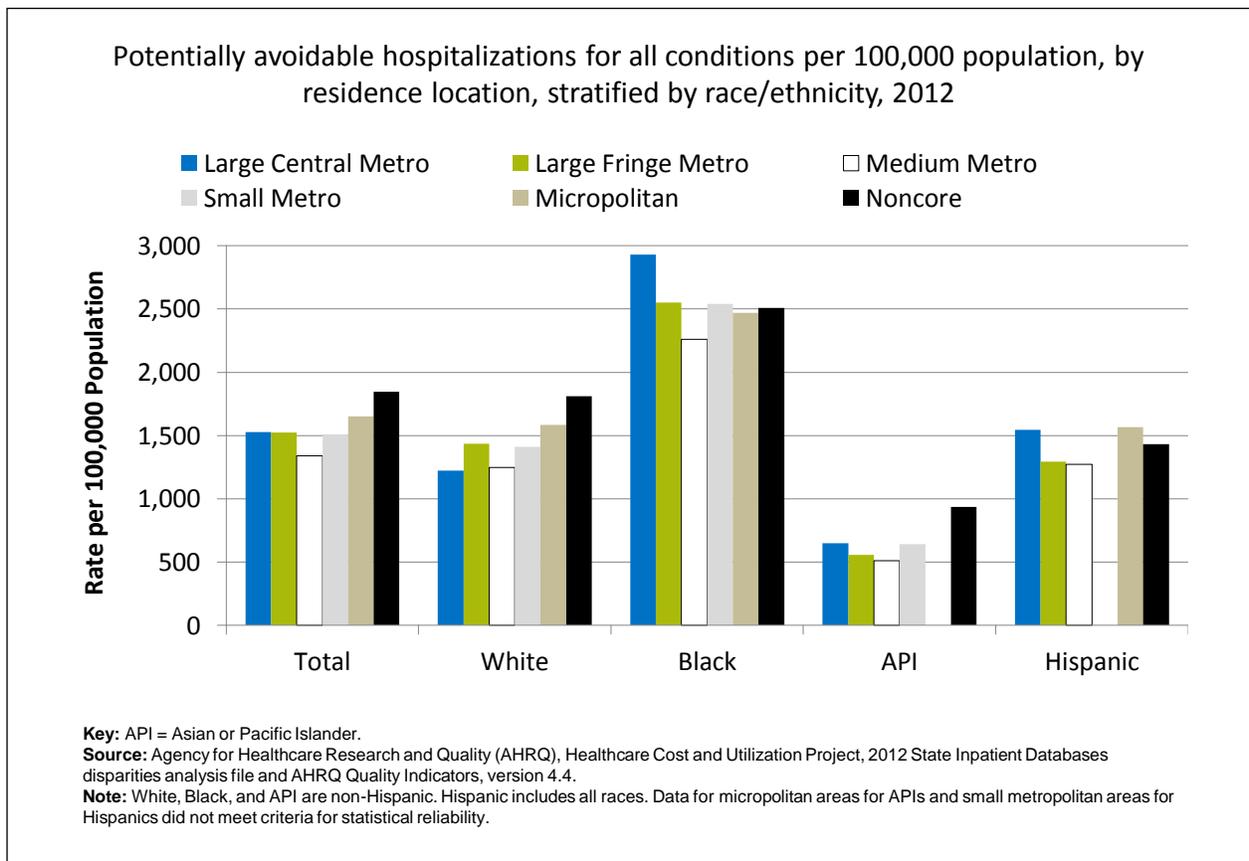
• **Groups With Disparities:**

- From 2005 to 2012, the rate of potentially avoidable hospitalizations for all conditions was higher for people living in noncore areas compared with those living in large fringe metropolitan areas.
- In 5 of 8 years, the rate of potentially avoidable hospitalizations for all conditions was higher for people living in micropolitan areas compared with those living in large fringe metropolitan areas.
- In 2012, the rate of potentially avoidable hospitalizations for all conditions for people living in noncore (1,979 per 100,000) and micropolitan (1,707 per 100,000) areas was higher than for residents living in large fringe metropolitan areas (1,427 per 100,000).

• **Achievable Benchmark:**

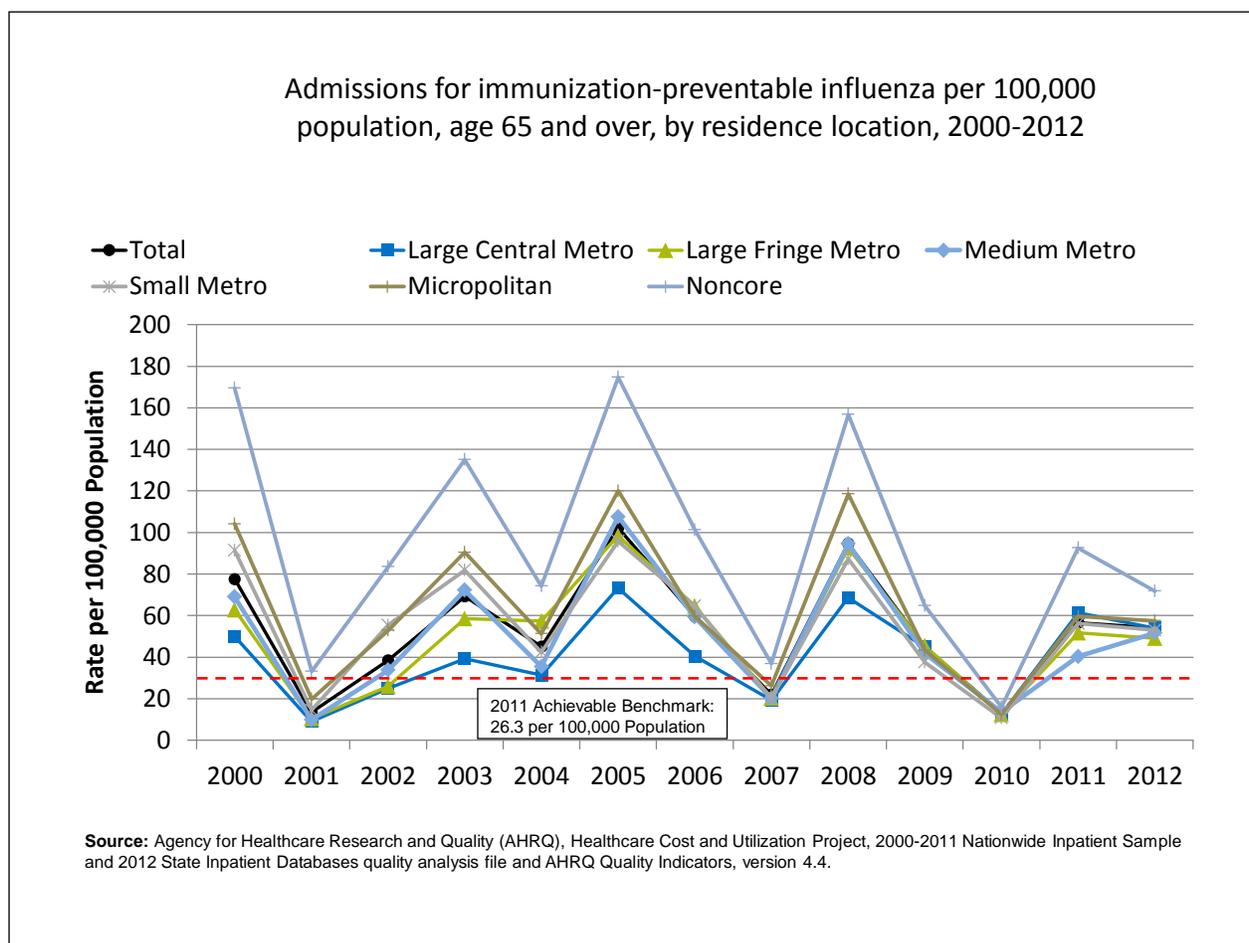
- The 2010 top 4 State achievable benchmark was 938.6. The top 4 States that contributed to the achievable benchmark are Hawaii, Oregon, Utah, and Washington.
- At current rates of improvement, it would take 13 years for the total population to reach the achievable benchmark.
- The benchmark for residents of micropolitan, large central metropolitan, large fringe metropolitan, medium metropolitan, and noncore areas could be achieved in 9, 10, 14, 15, and 16 years, respectively. Residents of small metropolitan areas are not making progress toward the benchmark.

Potentially Avoidable Hospitalizations



- **Overall Rate:** In 2012, the rate of potentially avoidable hospitalizations for all conditions per 100,000 population was 1,529 for large central metropolitan, 1,524 for large fringe metropolitan, 1,340 for medium metropolitan, 1,509 for small metropolitan, 1,653 for micropolitan, and 1,847 for noncore areas.
- **Groups With Disparities:**
 - In 2012, the rate of potentially avoidable hospitalizations for all conditions was higher for Whites living in noncore areas (1,813 per 100,000 population) compared with those living in large fringe metropolitan areas (1,436 per 100,000 population).
 - In 2012, the rate of potentially avoidable hospitalizations for all conditions was higher for Asians and Pacific Islanders (APIs) living in noncore areas (938 per 100,000 population) compared with those living in large fringe metropolitan areas (559 per 100,000 population).

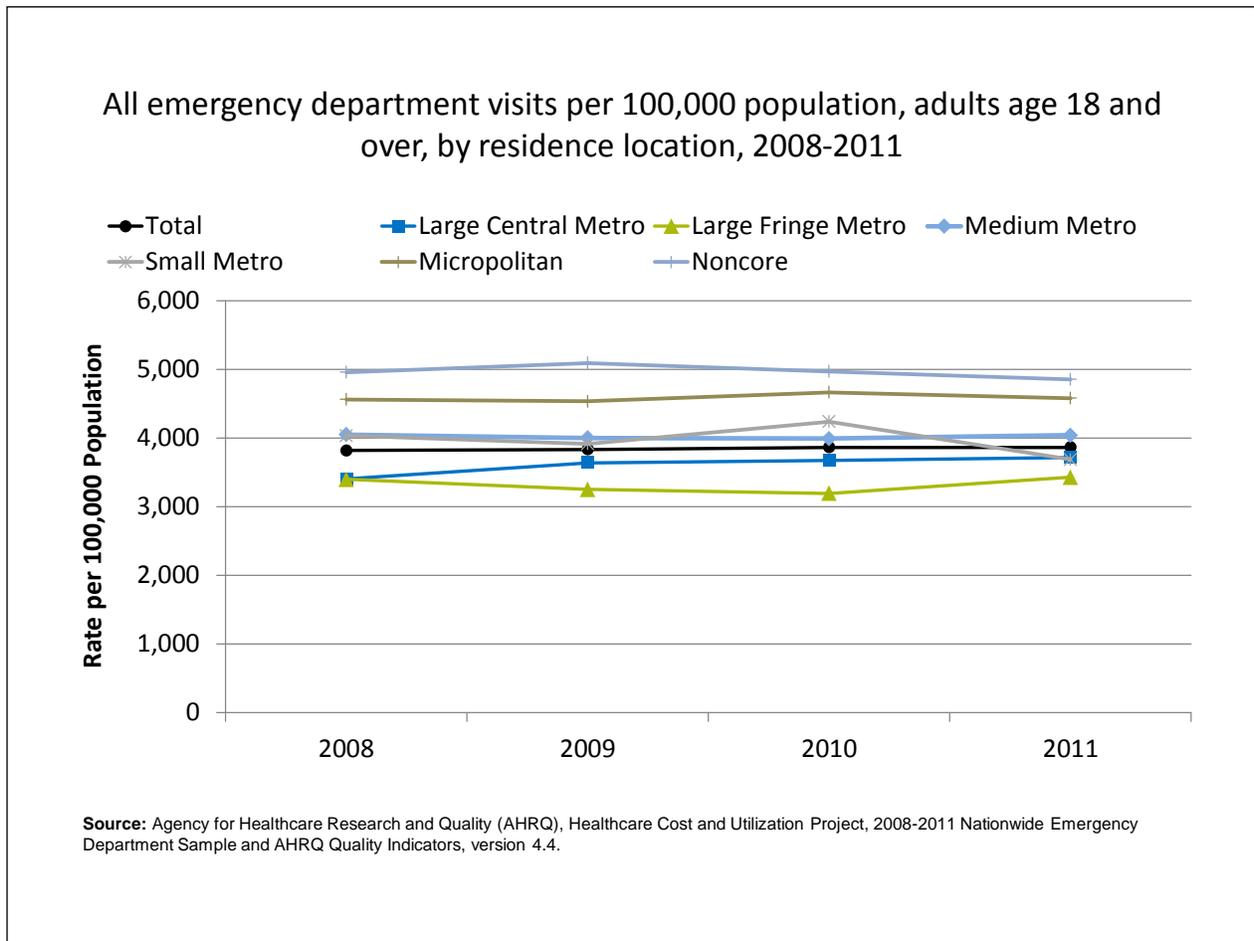
Admissions for Influenza



- **Importance:** Immunization is a cost-effective strategy for reducing illness, death, and disparities associated with influenza.
- **Overall Rate:** In 2012, the rate of admissions for immunization-preventable influenza in patients age 65 and over was 54 per 100,000 population.

- **Change Over Time:** From 2000 to 2012, there was no clear geographic pattern in the rate of admissions for immunization-preventable influenza among people age 65 and over.
- **Groups With Disparities:** In 11 of 13 years, admissions for immunization-preventable influenza per 100,000 population age 65 and over was higher for people living in noncore areas compared with those living in large fringe metropolitan areas.
- **Achievable Benchmark:**
 - The 2011 top 4 State achievable benchmark was 26.3 per 100,000 population. The top 4 States that contributed to the achievable benchmark are Hawaii, Nevada, New Jersey, and Oregon.
 - The total population and residents of large central metropolitan and small metropolitan areas are moving away from the benchmark. Residents of large fringe metropolitan areas are not making progress toward the benchmark.
 - Residents of micropolitan, noncore, and medium metropolitan areas could not achieve the benchmark for more than 20 years.

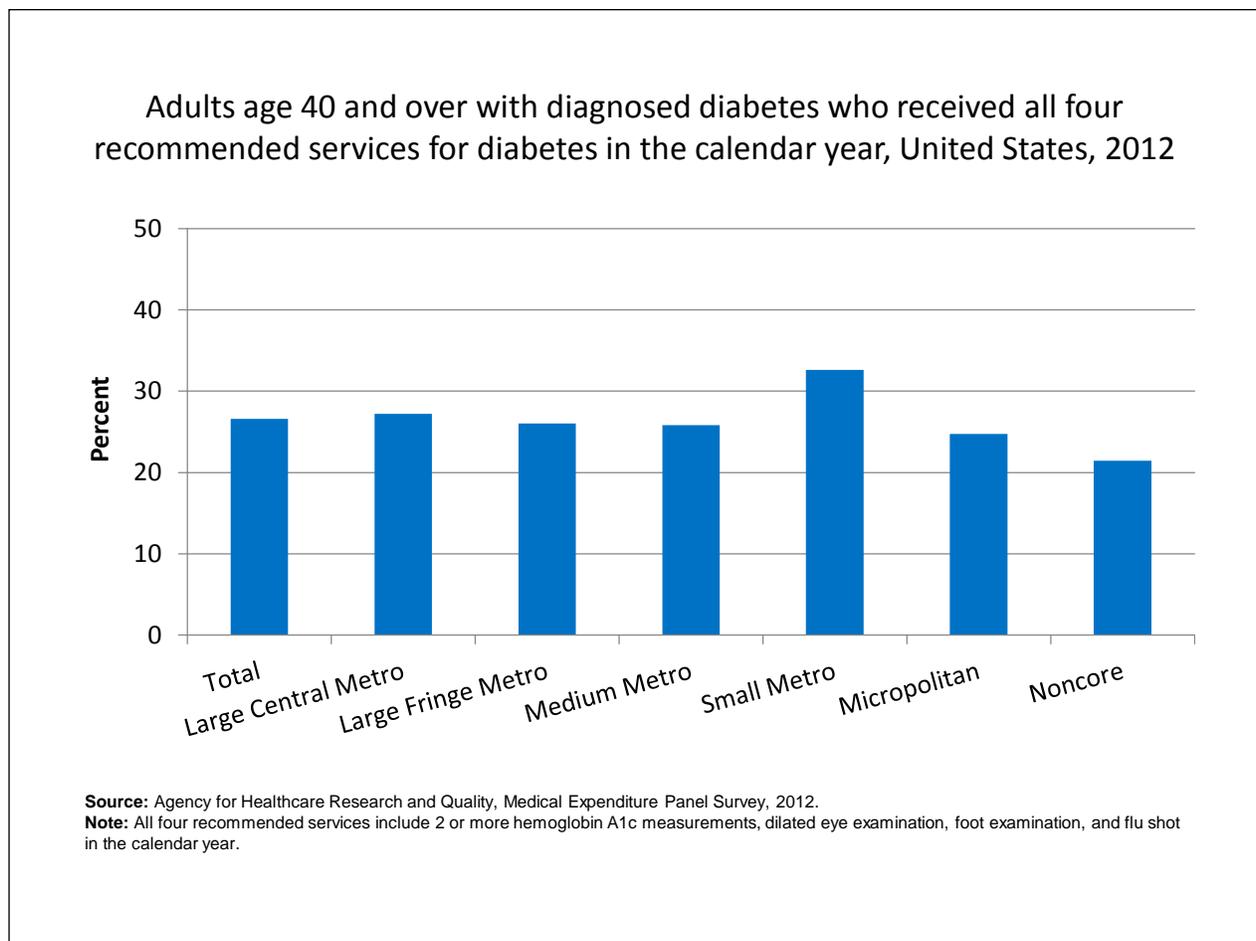
Emergency Department Visits



- **Importance:** Emergency department (ED) visits are costly. Because some visits are potentially avoidable, they may be indicative of poor care management, inadequate access to care, or poor choices on the part of beneficiaries (Dowd, et al., 2014). ED visits for conditions that are preventable or treatable with appropriate primary care lower health system efficiency and raise costs (Enard & Ganelin, 2013). An estimated 13% to 27% of ED visits in the United States could be managed in physician offices, clinics, and urgent care centers, saving \$4.4 billion annually (Weinick, et al., 2010).
- **Overall Rate:** In 2011, the rate of all ED visits was 3,865 per 100,000 population.
- **Change Over Time:** There were no statistically significant changes over time in the rate of ED visits overall or by residence location.
- **Groups With Disparities:** In 2011, the rate of ED visits per 100,000 population was higher for residents of noncore areas (4,853) and micropolitan areas (4,579) compared with residents of large fringe metropolitan areas (3,430).

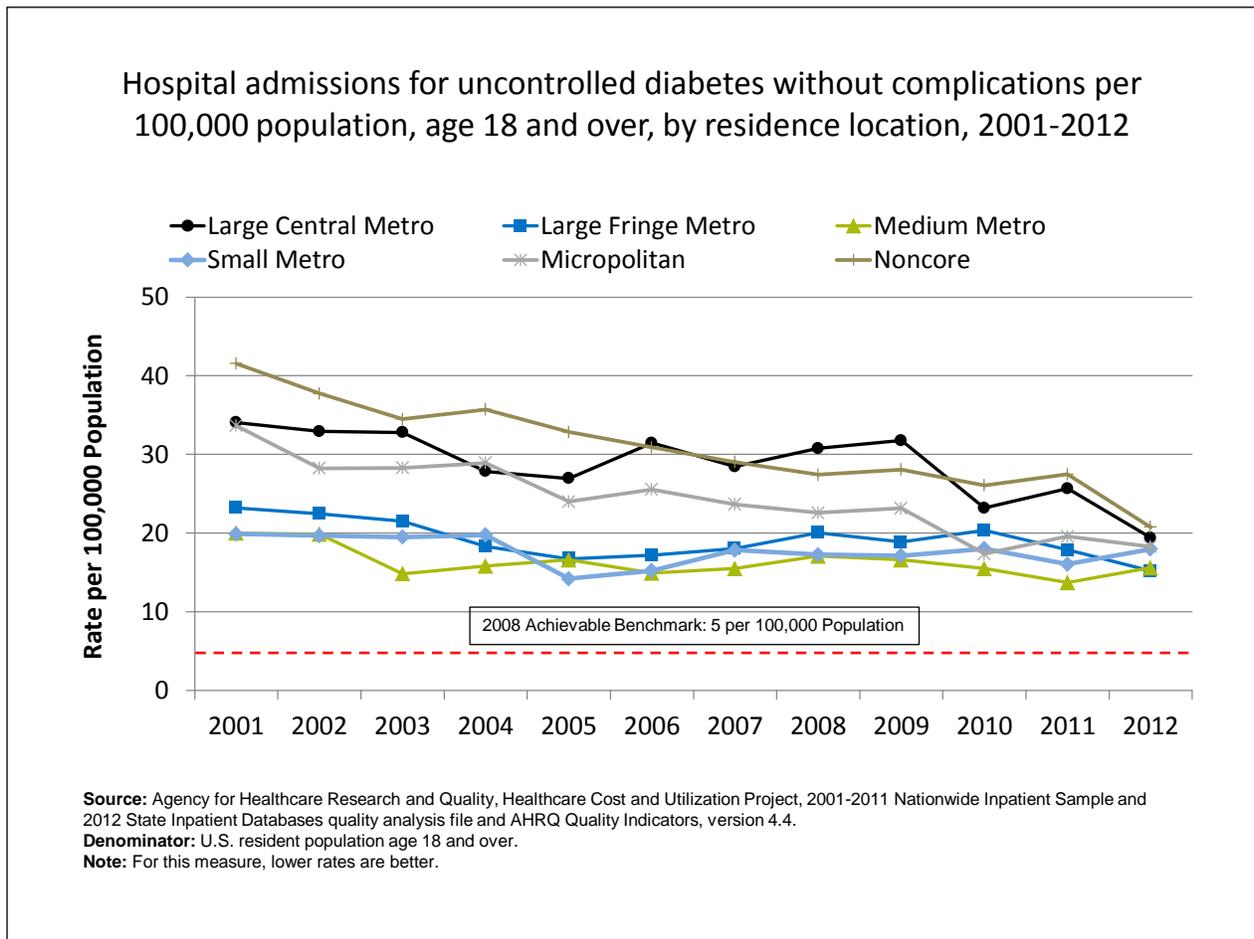
Prevention and Treatment of Leading Causes of Morbidity and Mortality

Adults With Diabetes Who Received Recommended Services



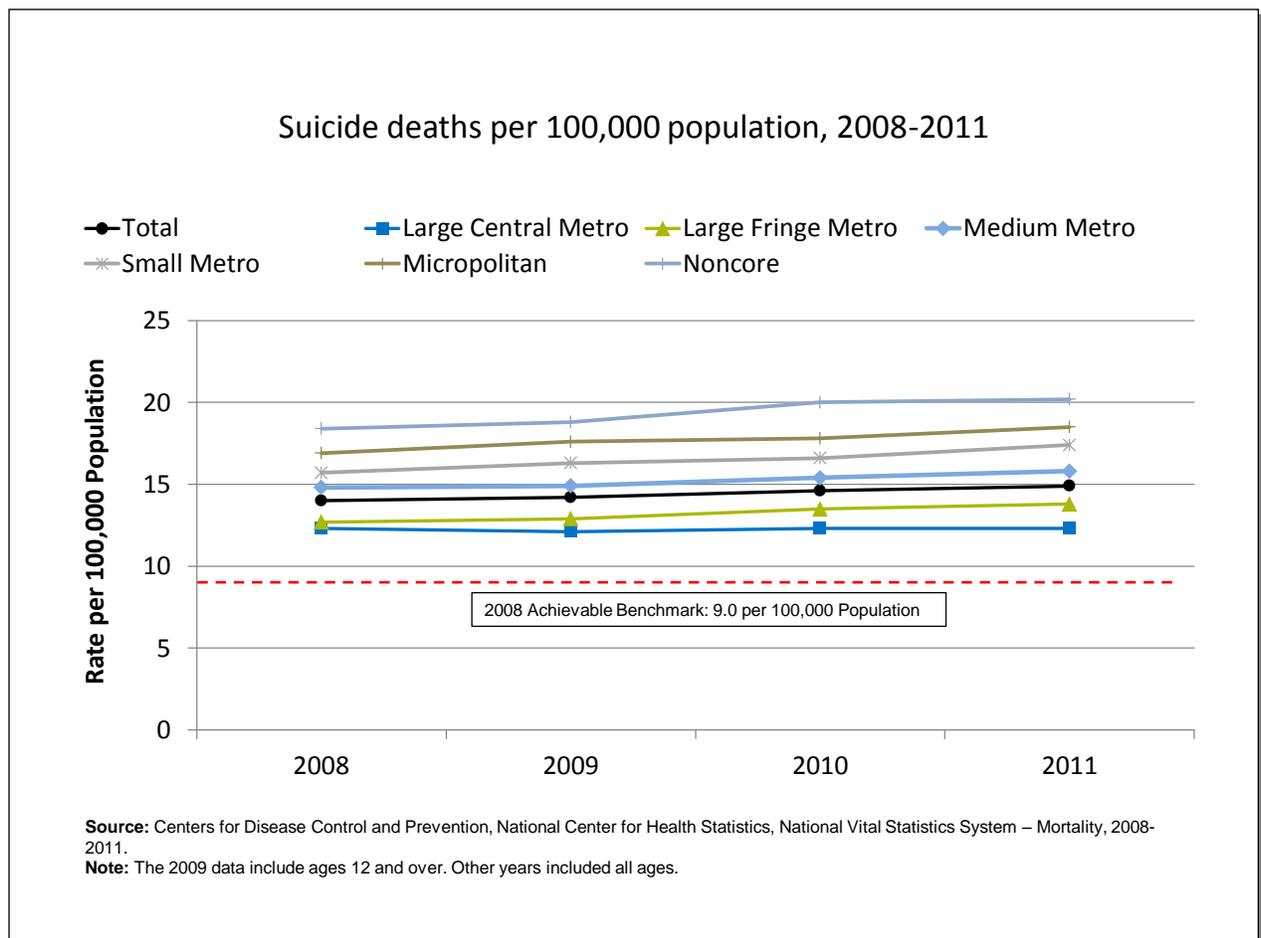
- **Importance:** Diabetes is one of the leading causes of hospitalization in the United States, with more than 600,000 discharges in 2009 (CDC, 2011). With appropriate and timely ambulatory care, it may be possible to prevent many hospitalizations for diabetes and related complications.
- **Overall Rate:** In 2012, 26.6% of adults diagnosed with diabetes received all four recommended services for diabetes.
 - The percentage of adults diagnosed with diabetes who received all four recommended services for diabetes was highest in small metropolitan areas (32.6%) and lowest in noncore areas (21.4%).
 - The percentage of adults with diagnosed diabetes who received all four recommended services was 27.2% in large central metropolitan areas, 26.0% in large fringe metropolitan areas, 25.8% in medium metropolitan areas, and 24.7% in micropolitan areas.

Hospital Admissions for Uncontrolled Diabetes



- **Importance:** Individuals who do not achieve good control of their diabetes may develop symptoms that require correction through hospitalization. Admission rates for uncontrolled diabetes may be reduced by better outpatient treatment and patients’ tighter adherence to diet and medication.
- **Trends:** From 2001 to 2012, the rate of hospital admissions for uncontrolled diabetes decreased overall and for all residence location groups.
- **Groups With Disparities:** In almost all years, the rates of hospital admissions for uncontrolled diabetes were higher among residents of noncore, micropolitan, and large central metropolitan areas and lower among residents of medium metropolitan areas compared with residents of large fringe metropolitan areas (suburbs), but these differences were often not statistically significant due to small sample sizes.
- **Achievable Benchmark:**
 - The 2008 top 4 State achievable benchmark was 5 admissions per 100,000 population age 18 and over. The top 4 States that contributed to the achievable benchmark were Colorado, Hawaii, Utah, and Vermont.
 - At the current rates, residents of noncore and micropolitan (nonmetropolitan) areas should reach the benchmark in about 10 years, sooner than residents of metropolitan areas, whose rates are not decreasing as quickly.

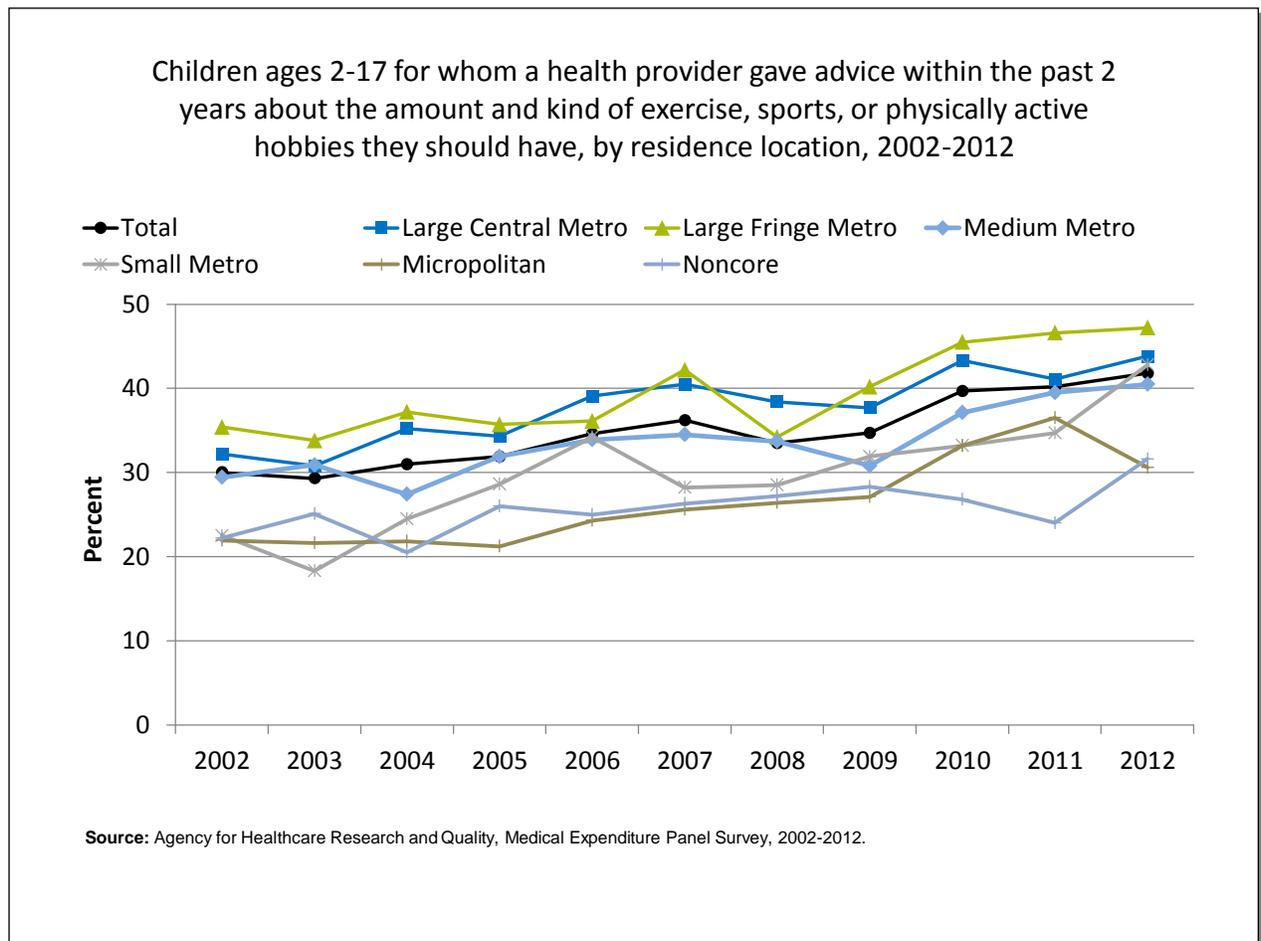
Suicide Deaths



- **Importance:** Suicide may be prevented when its warning signs are detected and treated. Identification of suicidal ideas and plans among individuals being treated for depression is expected to increase with the growing use of standardized screening instruments and electronic medical records.
- **Overall Rate:** In 2011, the total suicide rate was 14.9 per 100,000 population.
- **Trends:**
 - From 2008 to 2011, the overall suicide rate and rates for residents of large fringe metropolitan, medium metropolitan, small metropolitan, micropolitan, and noncore areas got worse.
- **Groups With Disparities:**
 - In 2011, residents of medium and small metropolitan, micropolitan, and noncore areas had higher rates of suicide than residents of large fringe metropolitan areas.
 - Residents of large central metropolitan areas had lower rates than residents of large fringe metropolitan areas.
- **Achievable Benchmark:**
 - The 2008 top 5 State achievable benchmark was 9.0 per 100,000 population. The top 5 States that contributed to the achievable benchmark were and Connecticut, District of Columbia, Massachusetts, New Jersey, and New York.
 - No group showed progress toward the benchmark.

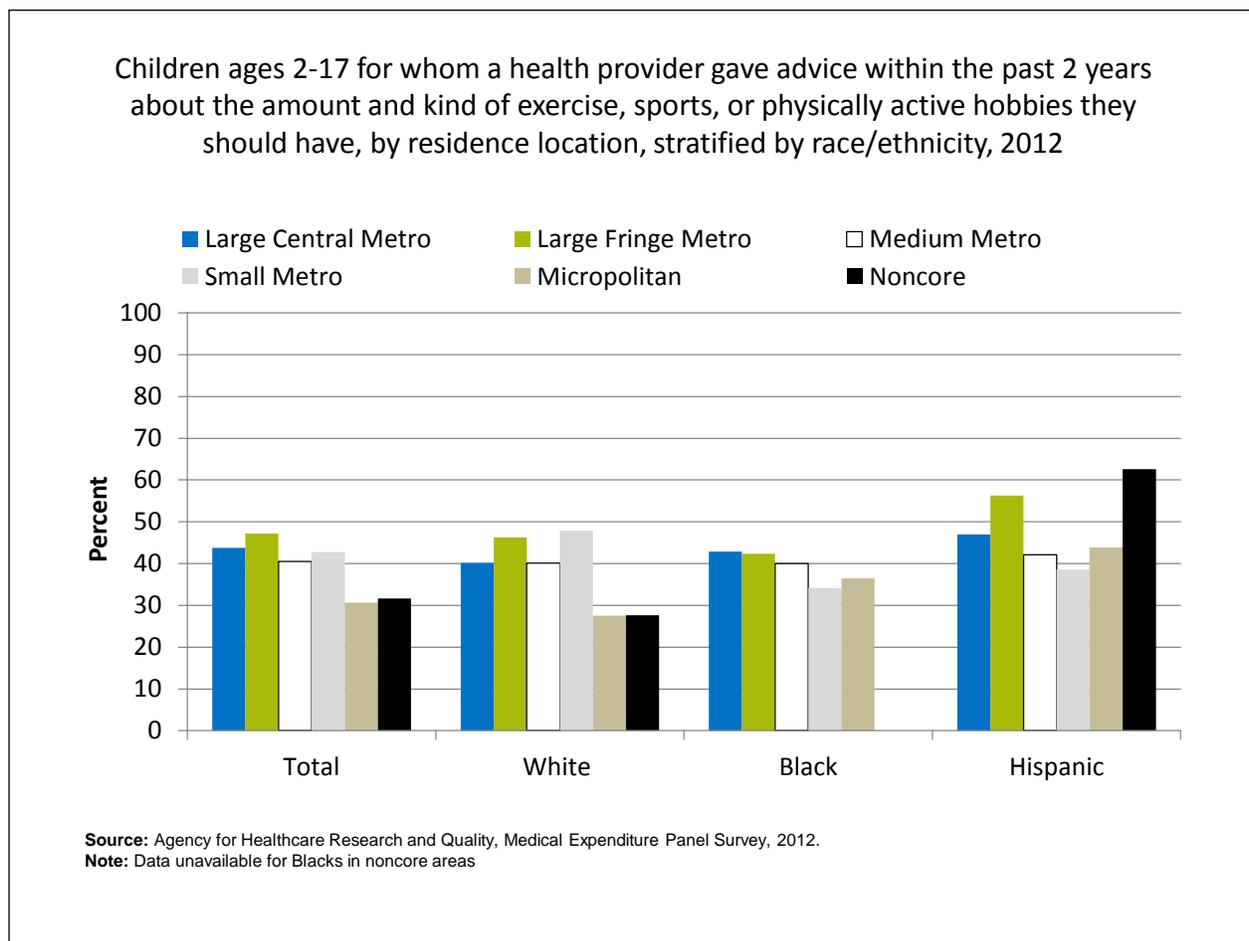
Healthy Living

Advice for Children About Exercise



- **Importance:** Childhood is often a time when people establish healthy lifelong habits. Physicians can play an important role in encouraging healthy behaviors from a young age. For example, they can educate children and parents about the importance of regular exercise.
- **Overall Rate:** In 2012, 41.8% of children ages 2-17 received advice about exercise, sports, or physically active hobbies.
- **Trends:**
 - From 2002 to 2012, the overall percentage of children who received advice about exercise improved from 30.0% to 41.8%.
 - Children residing in all geographic locations showed improvement.
- **Groups With Disparities:** In 2012, children in medium metropolitan, micropolitan, and noncore areas were less likely to receive advice about exercise, sports, or physically active hobbies than children in large fringe metropolitan areas.

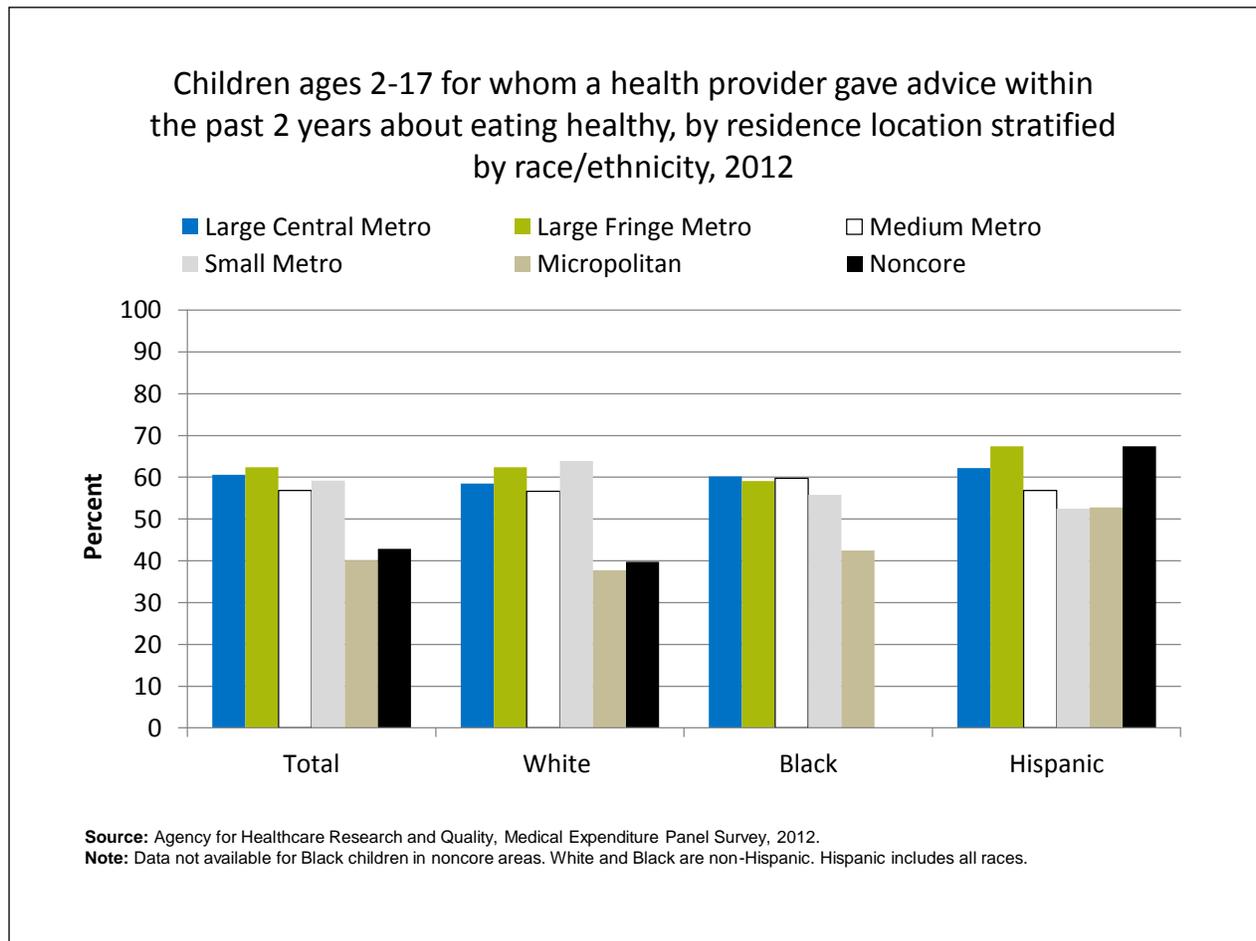
Advice for Children About Exercise



- **Groups With Disparities:**

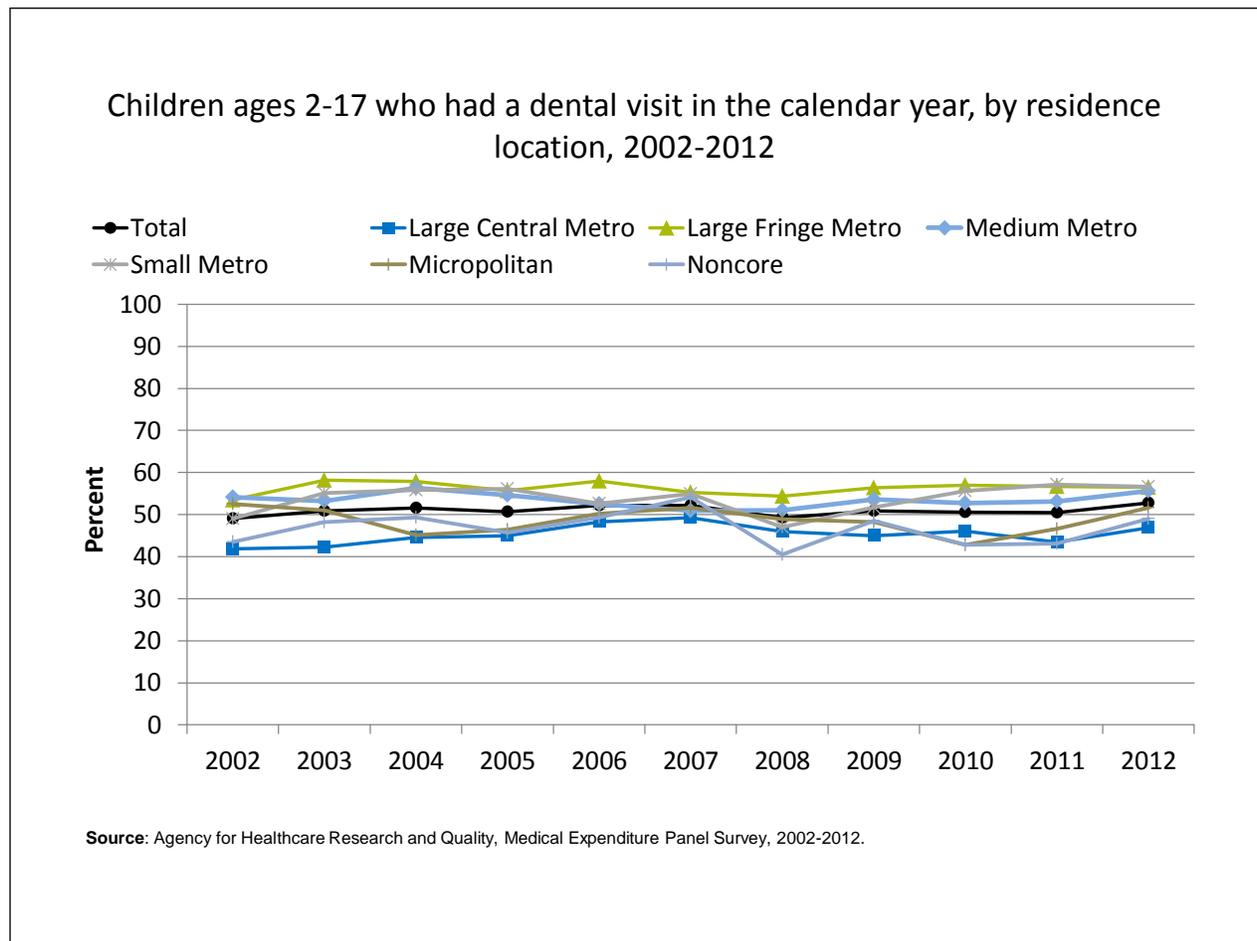
- Among Hispanic children, residents of large central metropolitan, medium metropolitan, and small metropolitan areas were less likely than residents of large fringe metropolitan areas to have a health care provider give advice about the amount and kind of exercise, sports, or physically active hobbies they should have.
- Among White children, residents of micropolitan and noncore areas were less likely than residents of large fringe metropolitan areas to have a health care provider give advice about the amount and kind of exercise, sports, or physically active hobbies they should have.

Advice for Children About Healthy Eating



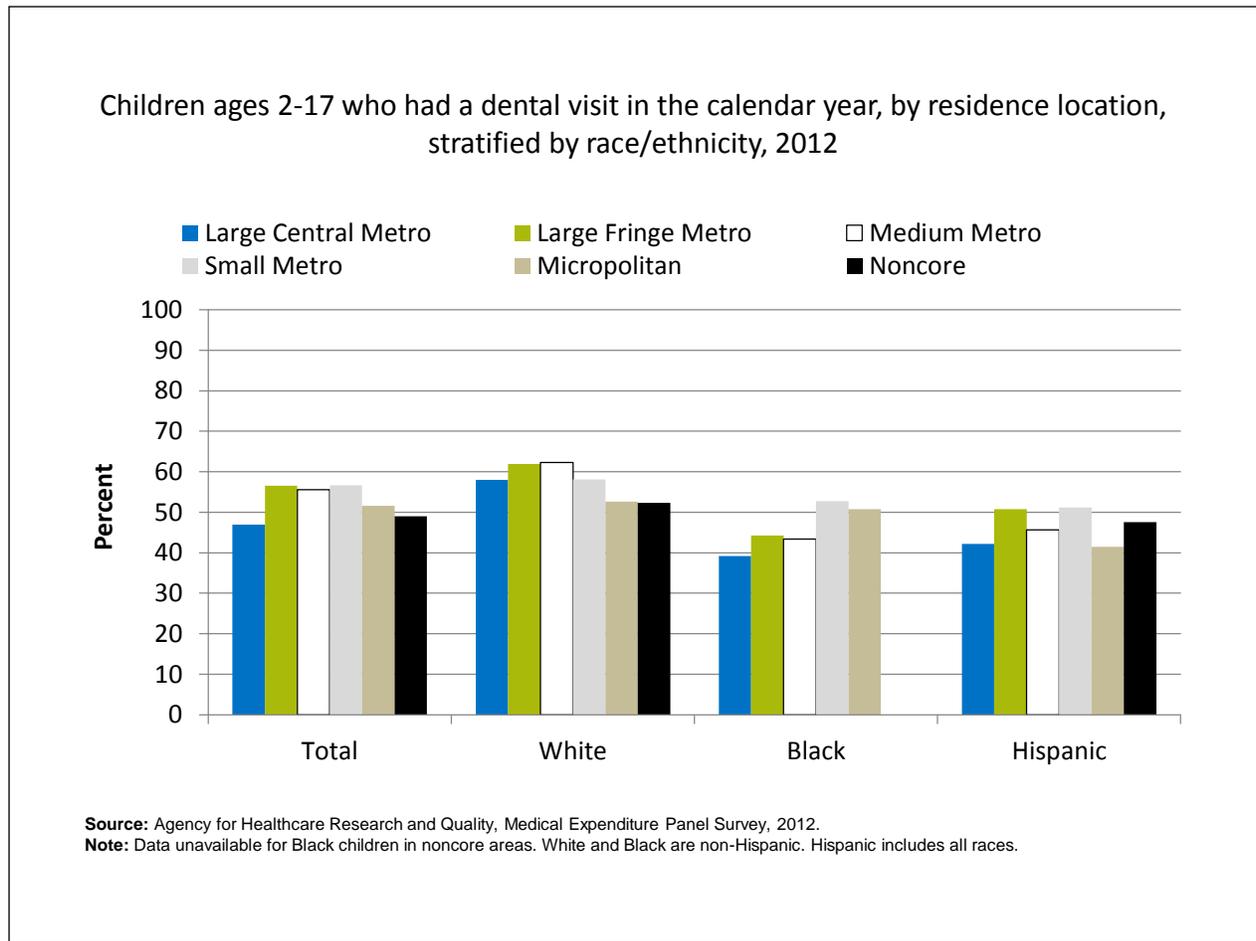
- **Importance:** It is essential for physicians to emphasize to patients the importance of consuming foods from all food groups, including whole grains and fibers, lean proteins, complex carbohydrates, fruits, and vegetables, as well as providing education about balancing energy intake and energy expenditure.
- **Overall Rate:** In 2012, 57.1% of children ages 2-17 received advice about healthy eating (data not shown).
- **Groups With Disparities:**
 - Overall, in 2012, children residing in micropolitan and noncore areas were less likely to receive advice about healthy eating than children in large fringe metropolitan areas.
 - Among Hispanic children, residents of medium and small metropolitan areas were less likely than children in large fringe metropolitan areas to receive advice about healthy eating.
 - Black children in micropolitan areas were less likely than children in large fringe metropolitan areas to receive advice about healthy eating.
 - White children residing in micropolitan and noncore areas were less likely than children in large fringe metropolitan areas to receive advice about healthy eating.

Children With a Dental Visit



- Importance:** According to the National Institute of Dental and Craniofacial Research, presence of dental caries is the single most common chronic disease of childhood, occurring five to eight times as frequently as asthma (NIDCR, 2000), the second most common chronic disease in children. Regular dental visits help to improve overall oral health and prevent dental caries.
- Overall Rate:** In 2012, 52.8% of children ages 2-17 had a dental visit in the calendar year.
- Trends:** From 2002 to 2012, there were no statistically significant changes in the overall rate nor among children residing in any geographic location.

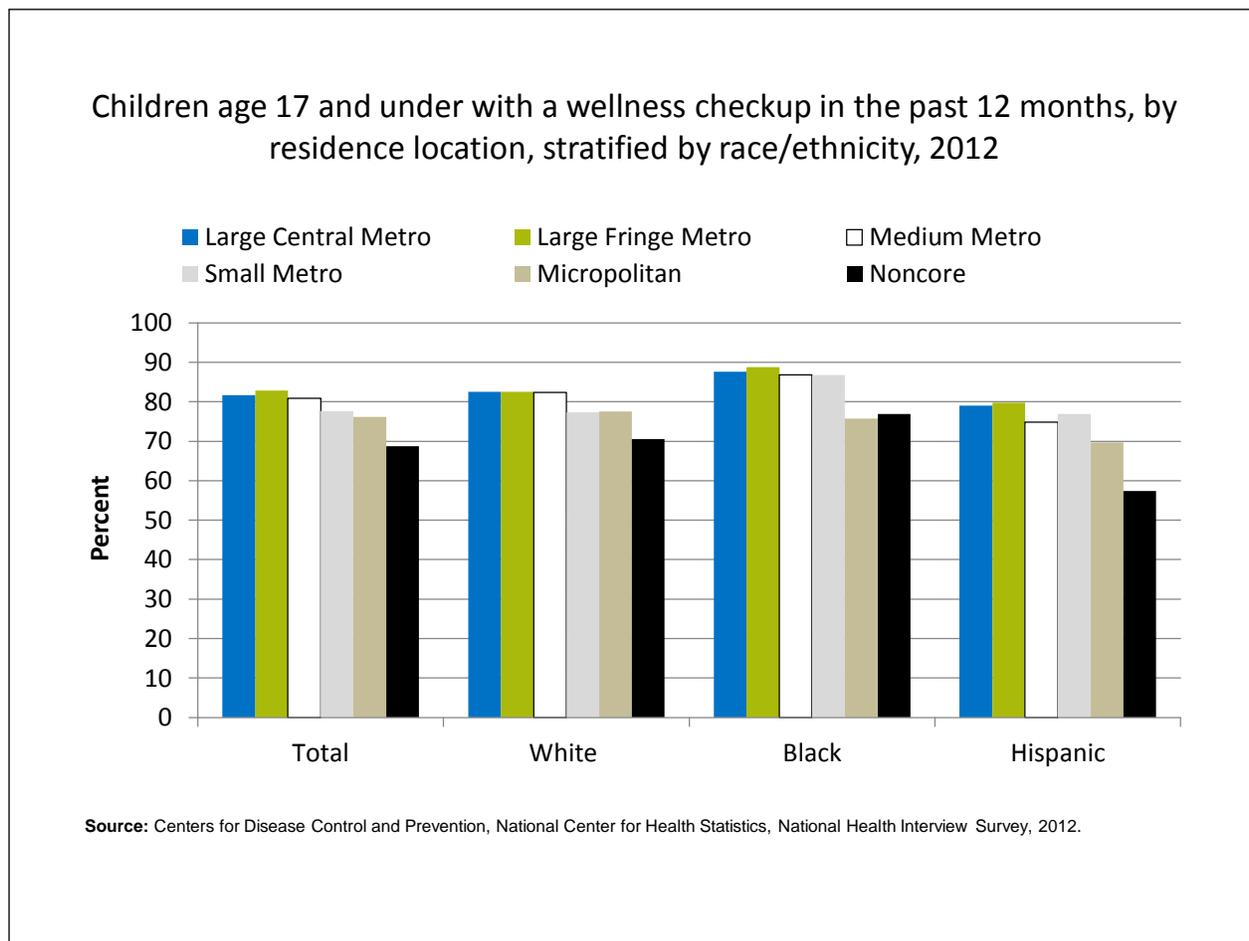
Children With a Dental Visit



- **Groups With Disparities:**

- Hispanic children living in large central metropolitan areas were less likely to have a dental visit than children in large fringe metropolitan areas.
- Among White and Black children, there were no statistically significant differences between those living in large fringe metropolitan areas and those in other geographic locations in the percentage who had a dental visit.

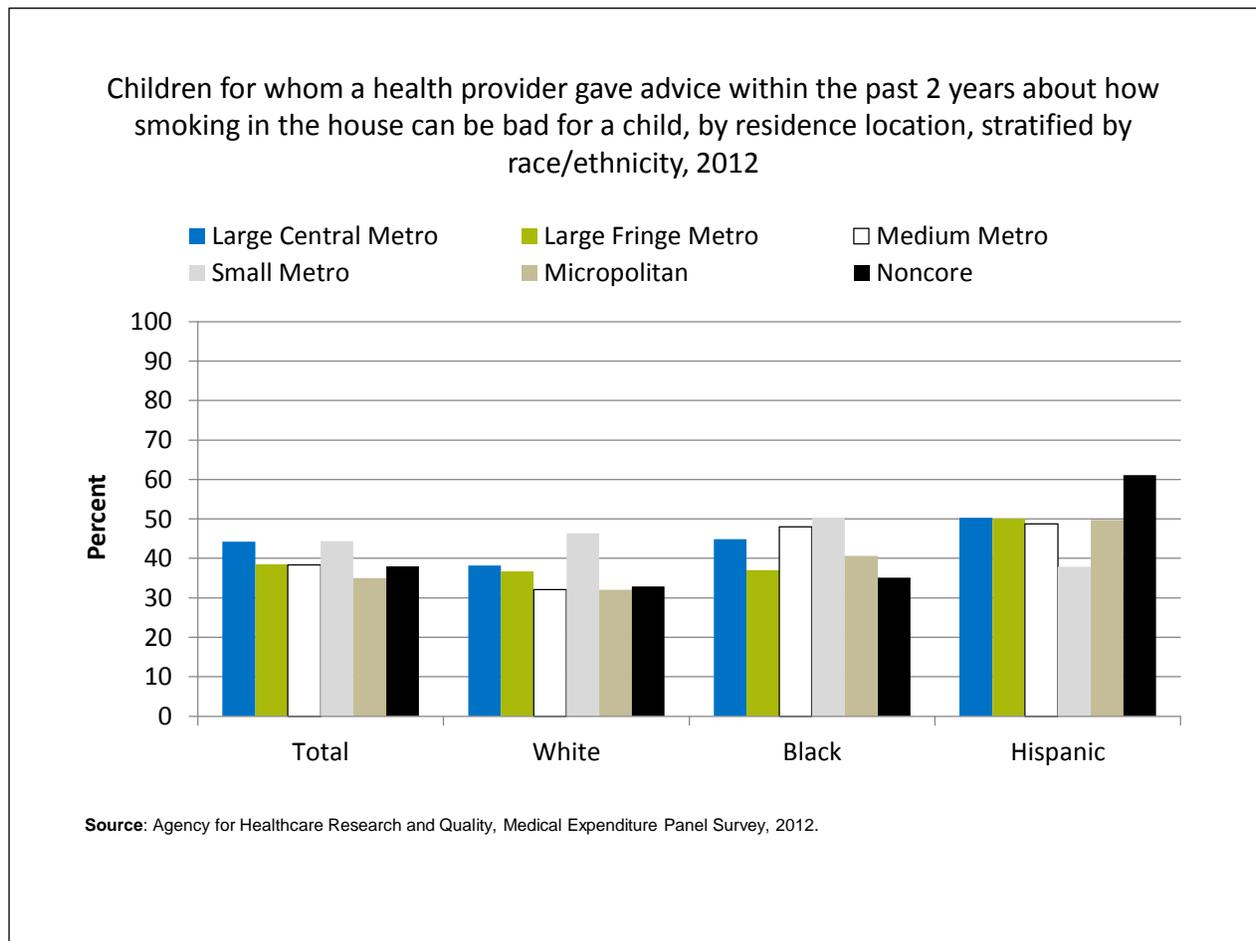
Children With a Wellness Checkup



- **Groups With Disparities:**

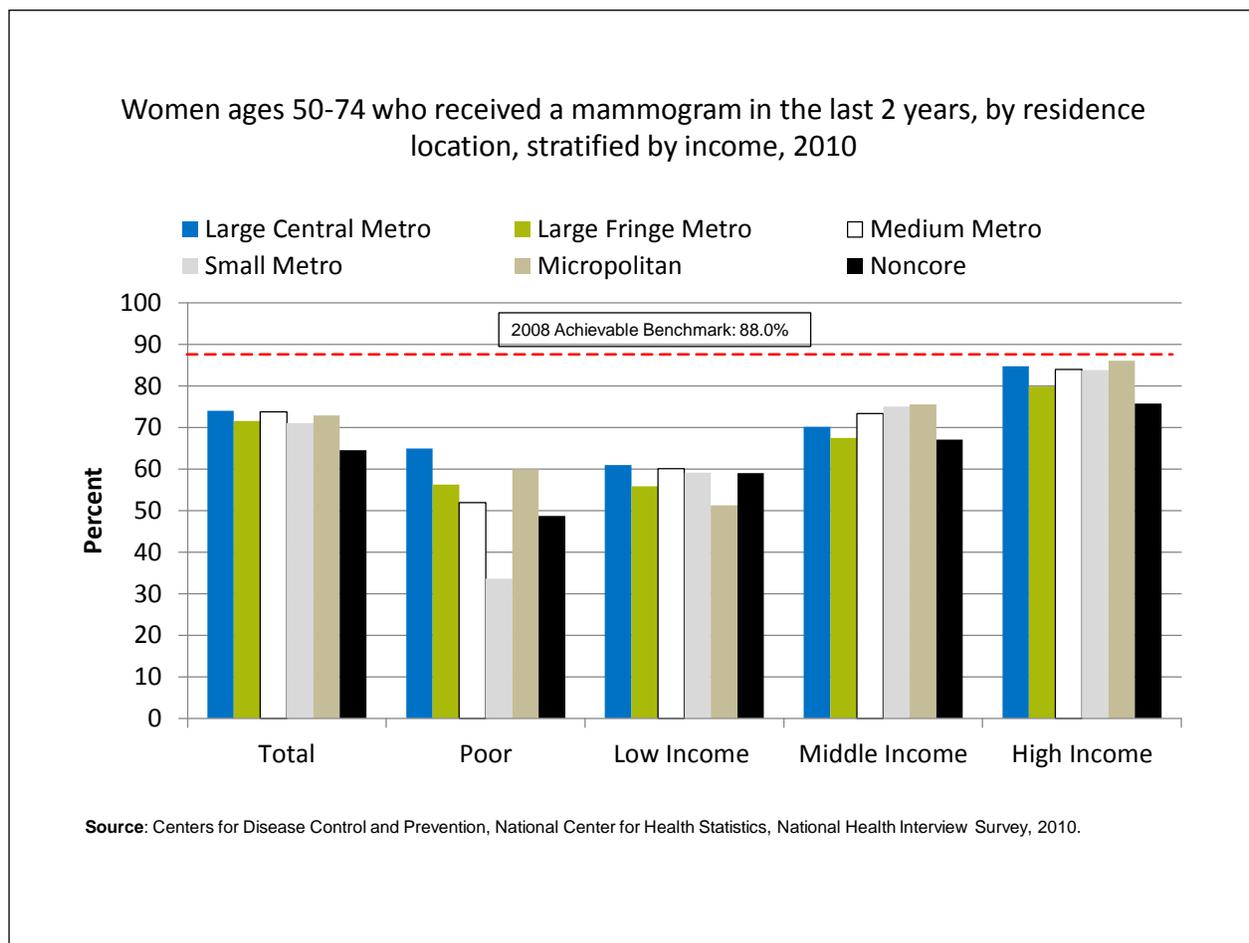
- Overall in 2012, children residing in small metropolitan, micropolitan, and noncore areas were less likely to have a wellness visit than children in large fringe metropolitan areas.
- Hispanic children living in micropolitan and noncore areas were less likely to have a wellness visit than children in large fringe metropolitan areas.
- White children living in small metropolitan, micropolitan, and noncore areas were less likely to have a wellness visit than children in large fringe metropolitan areas.
- Black children living in micropolitan areas were less likely to have a wellness visit than children in large fringe metropolitan areas.

Advice About How Smoking in the House Can Harm Children



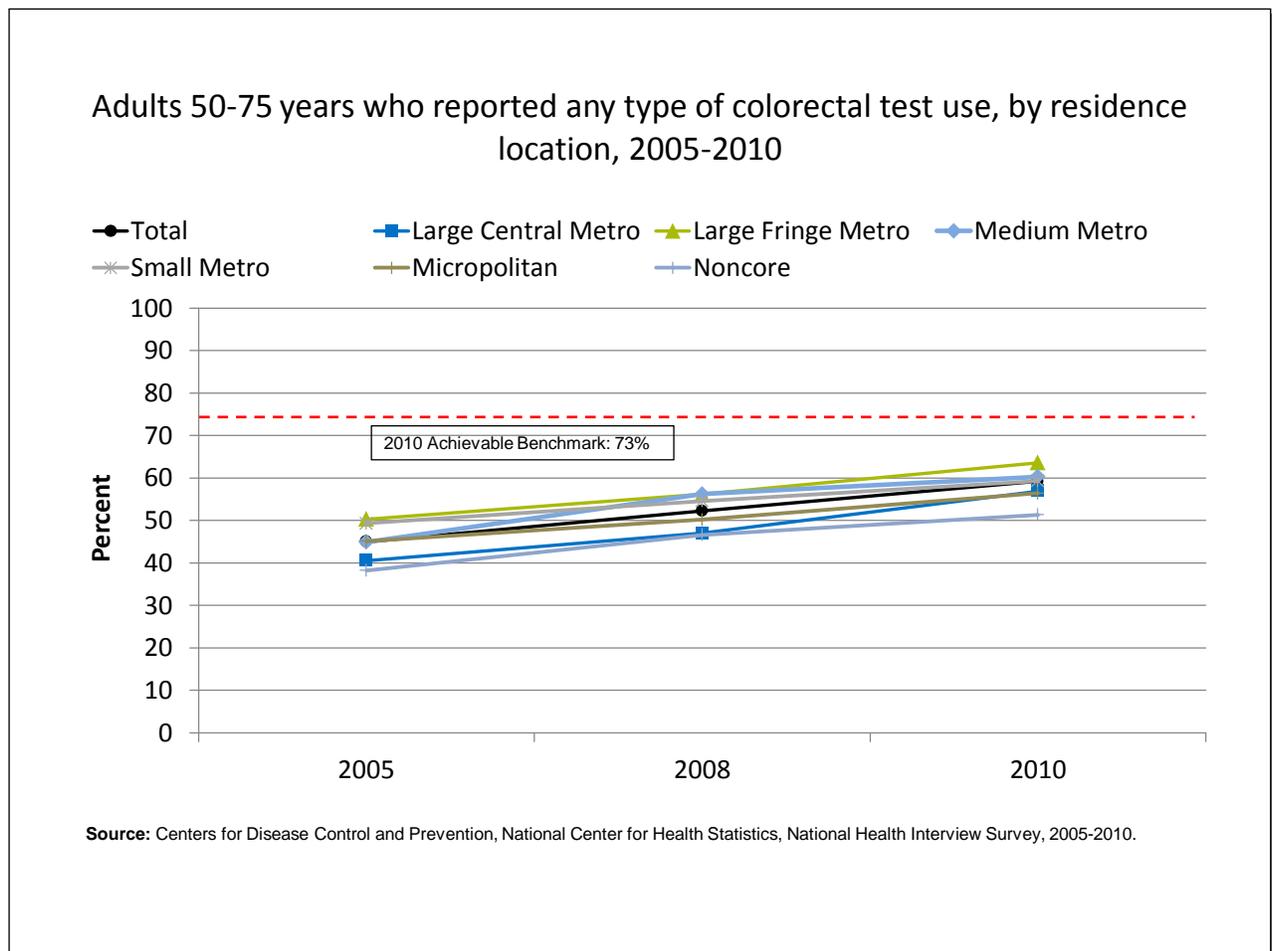
- **Importance:** Secondhand smoke can cause serious health problems in children. Studies show that older children whose parents smoke get sick more often. Their lungs grow less than children who do not breathe secondhand smoke, and they get more bronchitis and pneumonia.
- **Groups With Disparities:**
 - Among Hispanic children who received advice about how smoking in the home can be bad, there were no statistically significant differences between residents of large fringe metropolitan areas and other geographic areas.
 - White and Black children living in small metropolitan areas were more likely to receive advice about how smoking in the home can be bad than children living in large fringe metropolitan areas.

Women Who Received a Mammogram



- **Importance:** Early detection of cancer allows more treatment options and often improves outcomes. Mammography, the most effective method for detecting breast cancer at its early stages, can identify malignancies before they can be felt and before symptoms develop.
- **Groups With Disparities:**
 - In 2010, there were no statistically significant differences between women overall and from large central metropolitan, medium metropolitan, micropolitan, and noncore areas and women from large fringe metropolitan areas in the percentage who received a mammogram.
 - Among poor women, those from small metropolitan areas were less likely to receive a mammogram than those living in large fringe metropolitan areas.
- **Achievable Benchmark:**
 - The 2008 top 5 State achievable benchmark was 88%. The top 5 States that contributed to the achievable benchmark were Connecticut, Delaware, Massachusetts, New Hampshire, and Rhode Island.
 - No group had reached the benchmark by 2010.

Adults Who Had a Colorectal Test

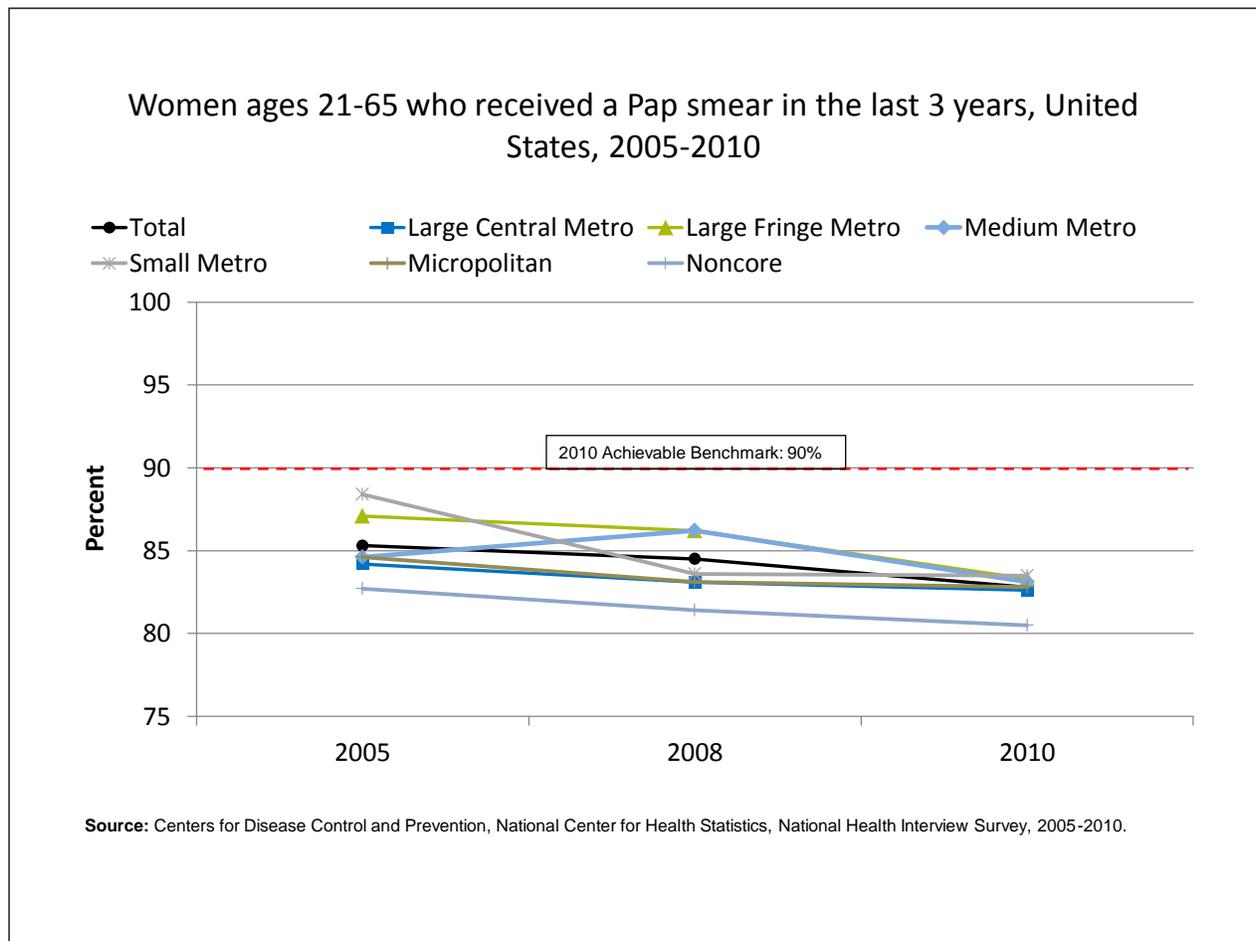


- **Importance:** Colorectal cancer is the third most common cancer in adults. Prevention of colorectal cancer includes modifying risk factors such as weight, physical activity, smoking, and alcohol use, as well as screening for early disease.
- **Overall Rate:** In 2010, 59.2% of adults ages 50-74 received any type of colorectal cancer screening.
- **Trends:**
 - In 2010, 56.4% of adults in micropolitan areas received colorectal cancer screening compared with 45.1% in 2005.
 - In 2010, 51.3% of adults in noncore areas received colorectal cancer screening compared with 38.2% in 2005.
- **Groups With Disparities:**
 - In 2010, adults in large central metropolitan, micropolitan, and noncore areas were less likely to receive colorectal cancer screening than residents of large fringe metropolitan areas.

- **Achievable Benchmark:**

- The 2010 top 5 State achievable benchmark was 73%. The top 5 States that contributed to the achievable benchmark were Connecticut, Maine, Massachusetts, New Hampshire, and Rhode Island.
- Data are insufficient to assess progress toward the benchmark.

Women Who Received a Pap Smear

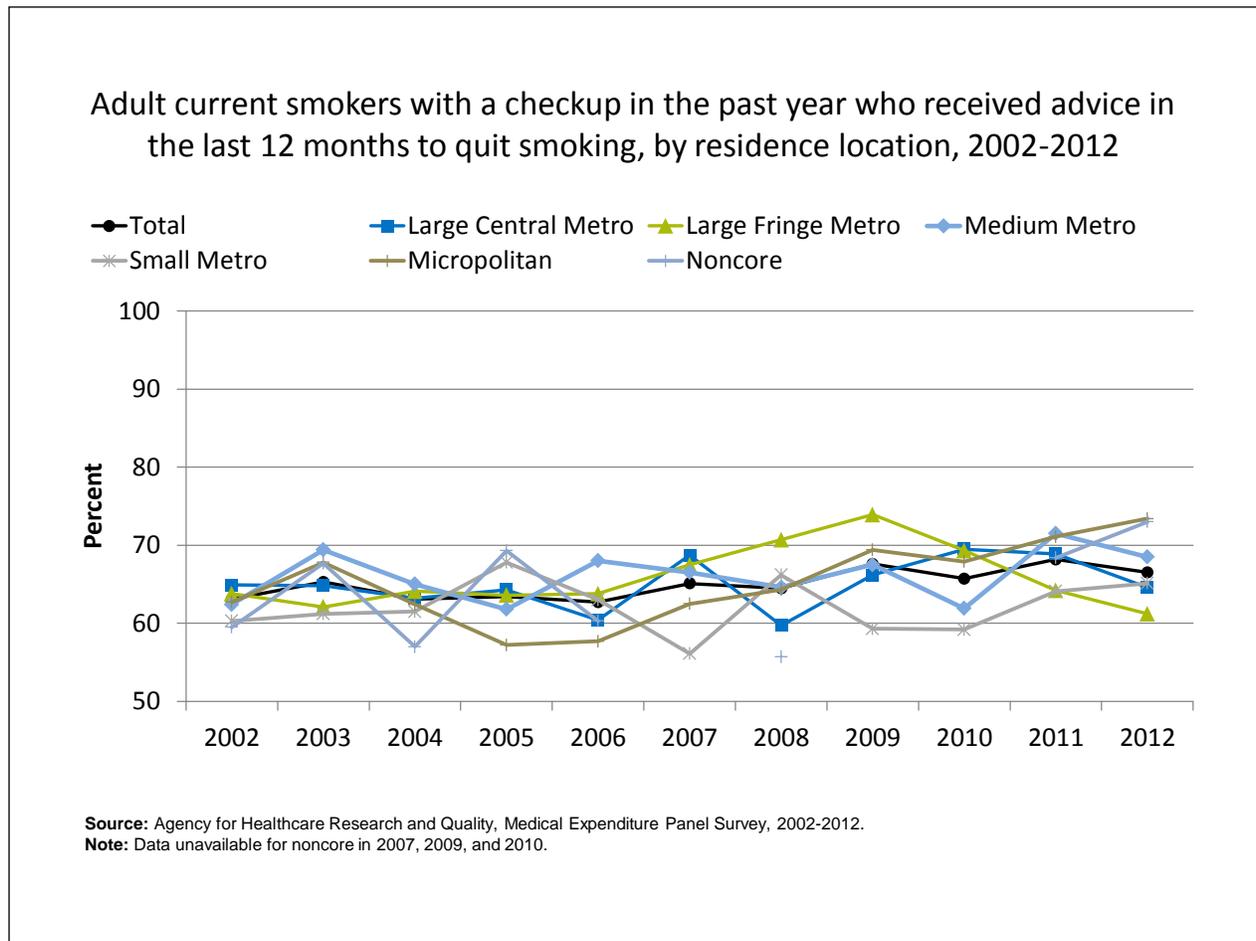


- **Overall Rate:** In 2010, 82.8% of women ages 21-65 received a Pap smear.
- **Trends:**
 - In 2010, 82.8% of women in micropolitan areas received a Pap smear compared with 84.6% in 2005.
 - In 2010, 80.5% of women in noncore areas received a Pap smear compared with 82.7% in 2005.
- **Groups With Disparities:** In 2010, there were no statistically significant geographic differences in the percentages of women who received cervical cancer screening.

- **Achievable Benchmark:**

- The 2010 top 5 State achievable benchmark was 90%. The top 5 States that contributed to the achievable benchmark were Delaware, District of Columbia, Massachusetts, Rhode Island, and Vermont.
- Data are insufficient to assess progress toward the benchmark.

Adult Smokers Advised To Quit

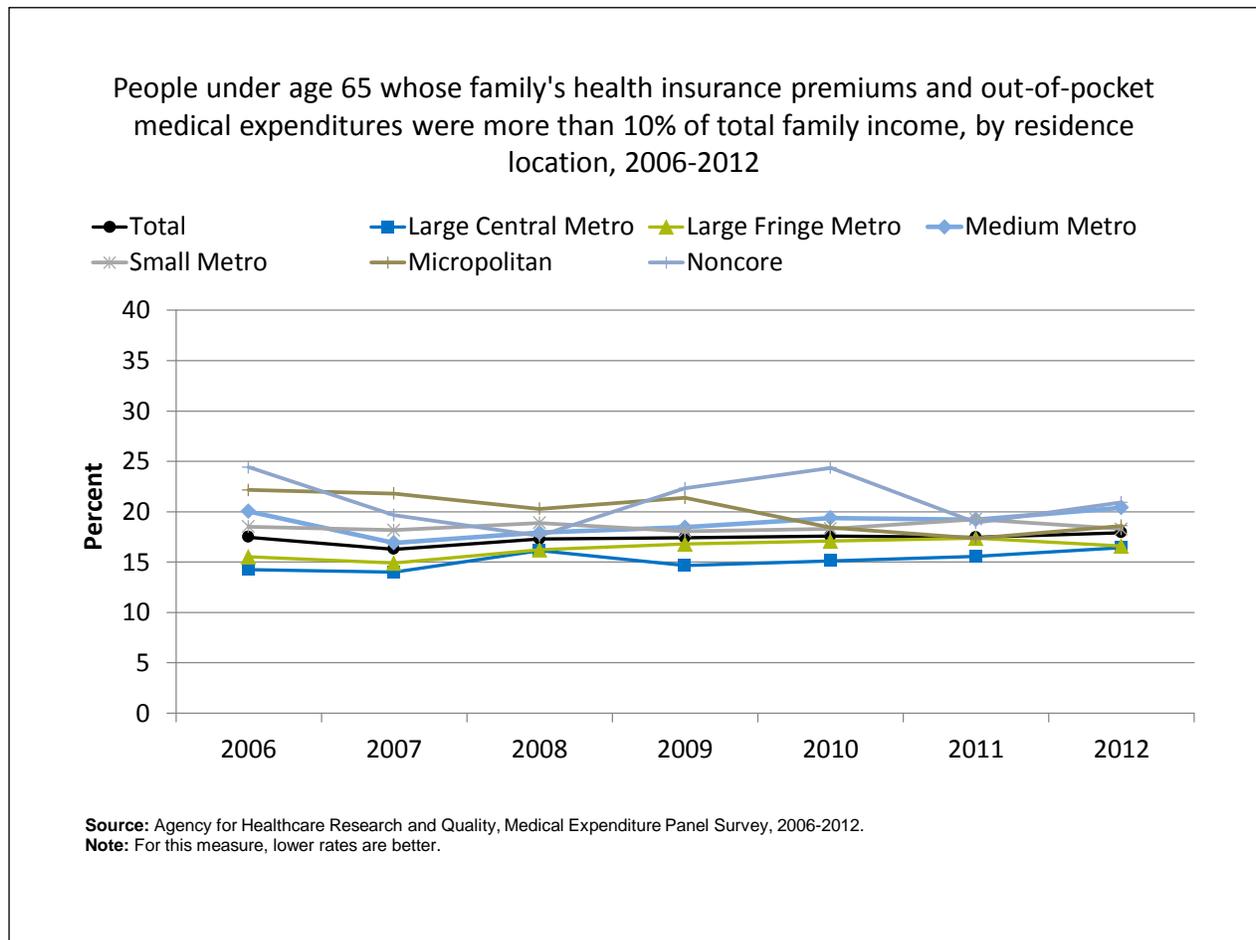


- **Importance:** Smoking harms nearly every organ of the body and causes or exacerbates many diseases. Since the first Surgeon General’s report on smoking and health in 1964, there have been more than 20 million premature deaths attributable to smoking and exposure to secondhand smoke (OSH, 2014). In 2012, 25.6% of residents of nonmetropolitan areas age 18 and over were current smokers compared with 15.4% of residents of large metropolitan areas (Blackwell, et al., 2014).
- **Overall Rate:** In 2012, 66.5% of current smokers received advice to quit smoking.
- **Trends:**
 - From 2002 to 2012, the overall percentage of adults who received advice to quit smoking increased from 63.1% to 66.5%.

- Among current smokers in both micropolitan and noncore areas, there were significant improvements. Micropolitan residents improved from 62.7% in 2002 to 73.4% in 2012 and percentages for noncore residents improved from 59.5% to 73.0%.
- Residents of large central metropolitan, large fringe metropolitan, and medium metropolitan areas showed no statistically significant changes.

Affordability

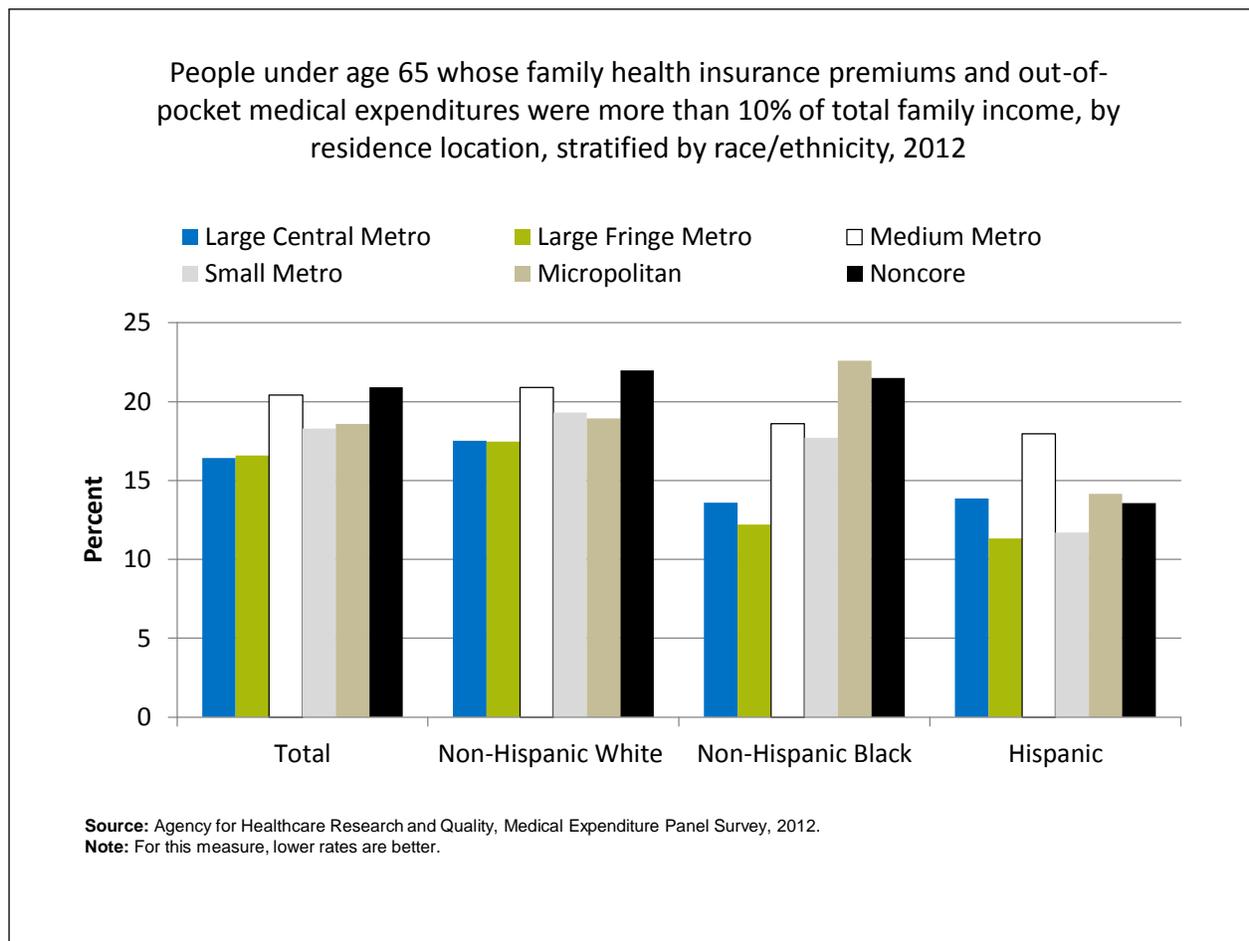
People With Health Insurance Premium and Out-of-Pocket Medical Expenses Above 10% of Income



- **Importance:** Health care expenses that exceed 10% of family income are a marker of financial burden for families. These numbers predate the Affordable Care Act.
- **Overall Rate:** In 2012, the percentage of people under age 65 whose family's health insurance premiums and out-of-pocket medical expenditures were more than 10% of total family income was 17.9%.
- **Trends:**
 - From 2006 to 2012, there was no statistically significant change in the rate of people under age 65 whose family's health insurance premiums and out-of-pocket medical expenditures were more than 10% of their total family income.

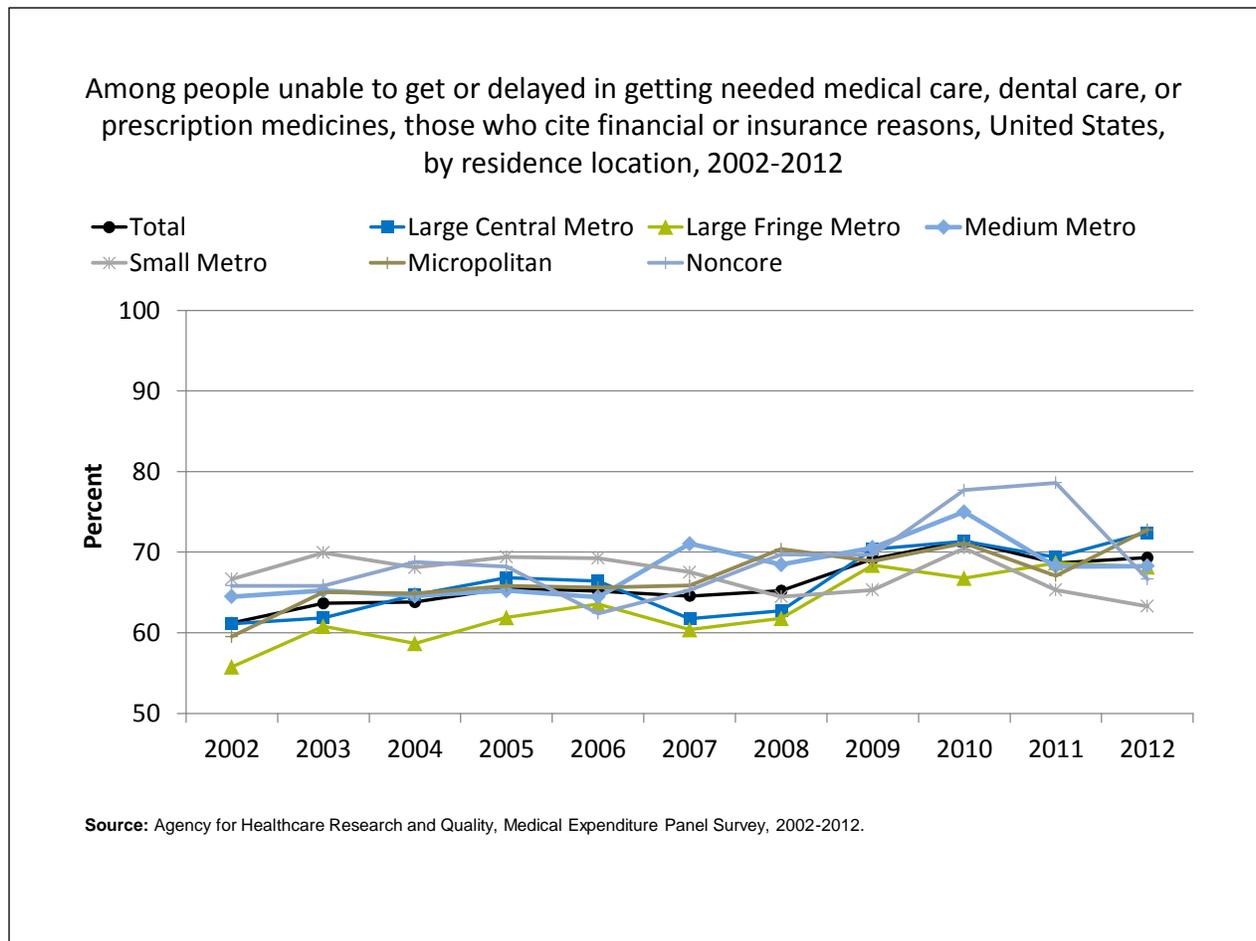
- From 2006 to 2012, the percentage of people under age 65 whose family's health insurance premiums and out-of-pocket medical expenditures were more than 10% of total family income improved for people living in micropolitan and noncore areas.
 - From 2006 to 2012, the percentage of people under age 65 whose family's health insurance premiums and out-of-pocket medical expenditures were more than 10% of total family income worsened for people living in large central metropolitan and large fringe metropolitan areas.
 - The disparity between residents of micropolitan and large fringe metropolitan areas narrowed.
- **Groups With Disparities:**
 - In 2012, the percentage of people under age 65 whose family's health insurance premiums and out-of-pocket medical expenditures were more than 10% of total family income was worse for residents living in medium metropolitan and noncore areas compared with large fringe metropolitan areas.
 - In 5 of 7 years, the percentage of people under age 65 whose family's health insurance premiums and out-of-pocket medical expenditures were more than 10% of total family income was worse for residents living in noncore areas compared with large fringe metropolitan areas.
 - In 4 of 7 years, the percentage of people under age 65 whose family's health insurance premiums and out-of-pocket medical expenditures were more than 10% of total family income was worse for residents living in micropolitan areas compared with large fringe metropolitan areas.

People With Health Insurance Premium and Out-of-Pocket Medical Expenses Above 10% of Income



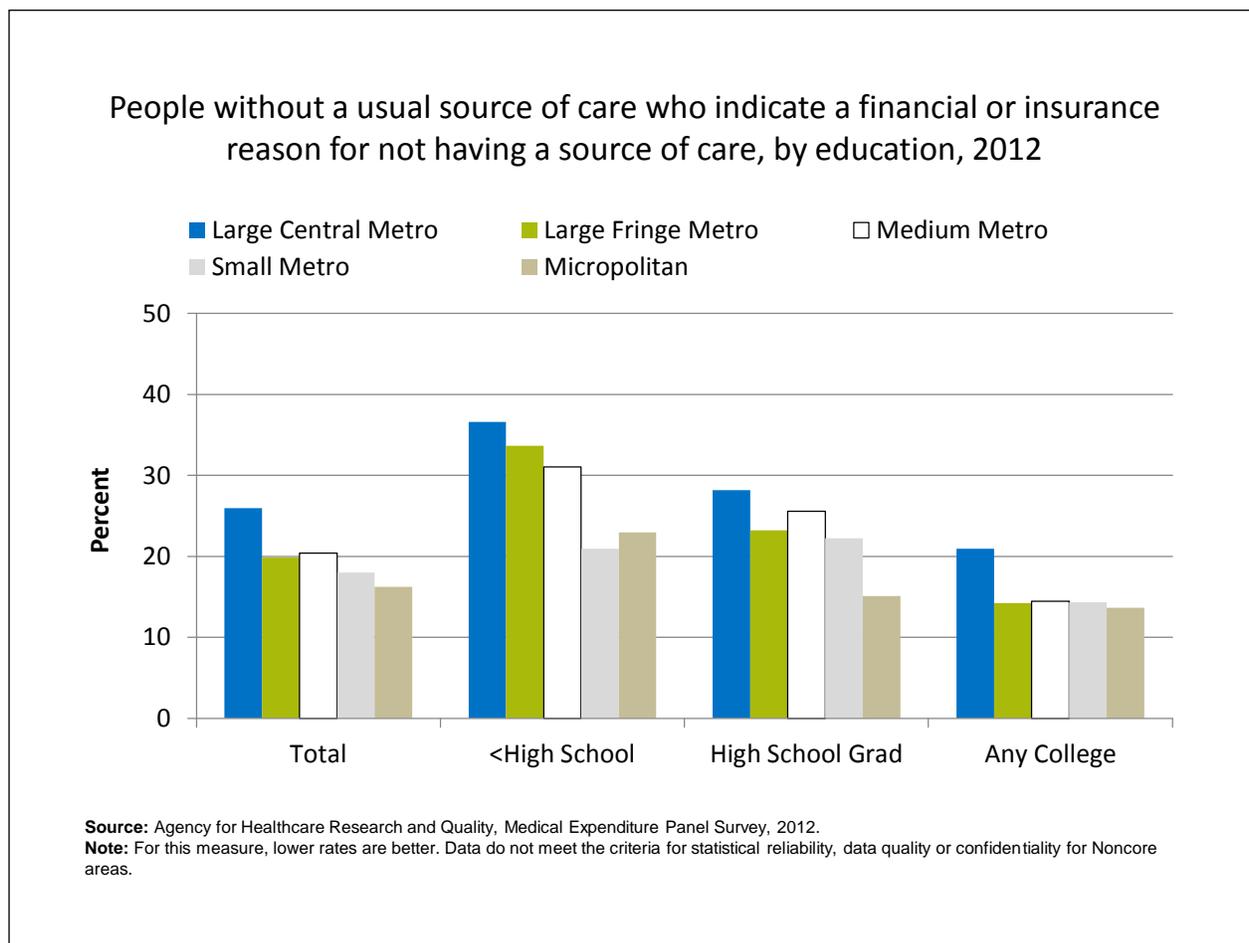
- **Overall Rate:** In 2012, the percentage of people under age 65 whose family's health insurance premiums and out-of-pocket medical expenditures were more than 10% of total family income was worse for residents living in medium metropolitan and noncore areas compared with large fringe metropolitan areas.
- **Groups With Disparities:**
 - In 2012, among non-Hispanic Black residents, the percentage of people under age 65 whose family health insurance premiums and out-of-pocket medical expenditures were more than 10% of total family income was higher for those who live in medium metropolitan, micropolitan, and noncore areas compared with those who live in large fringe metropolitan areas.
 - In 2012, among Hispanic residents, the percentage of people under 65 whose family health insurance premiums and out of pocket medical expenditures were more than 10% of total family income was higher for those who live in medium metropolitan areas compared with those who live in large fringe metropolitan areas.

People Unable To Get or Delayed in Getting Needed Care



- **Importance:** Some Americans cannot afford all the care they need.
- **Overall Rate:** In 2012, among people unable to get or delayed in getting needed medical care, dental care, or prescription medicines, 69.3% cited financial or insurance reasons. These numbers predate the Affordable Care Act.
- **Trends:**
 - From 2002 to 2012, the percentage of people unable to get or delayed in getting needed medical care, dental care, or prescription medicines due to financial or insurance reasons worsened overall and for residents of large central metropolitan, large fringe metropolitan, micropolitan, and noncore areas.
 - The disparity narrowed between residents of small metropolitan and large fringe metropolitan areas.

People Who Lack a Usual Source of Care for Financial or Insurance Reasons



- **Overall Rate:** In 2012, the percentage of people without a usual source of care who indicated a financial or insurance reason for not having a source of care was 21%.
- **Groups With Disparities:**
 - In 2012, overall, the percentage of people without a usual source of care who indicated a financial or insurance reason for not having a source of care was higher for people living in large central metropolitan areas compared with those living in large fringe metropolitan areas.
 - In 2012, among people who had less than a high school education, the percentage of people without a usual source of care who indicated a financial or insurance reason for not having a source of care was lower for people living in small metropolitan and micropolitan areas compared with those living in large fringe metropolitan areas.
 - In 2012, among high school graduates and people with any college, the percentage of people without a usual source of care who indicated a financial or insurance reason for not having a source of care was higher for people living in large central metropolitan areas compared with those living in large fringe metropolitan areas.

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