



# 2014 National Healthcare Quality and Disparities Report

## CHARTBOOK ON EFFECTIVE TREATMENT



Agency for Healthcare Research and Quality  
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# **2014 NATIONAL HEALTHCARE QUALITY AND DISPARITIES REPORT CHARTBOOK ON EFFECTIVE TREATMENT**

**U.S. DEPARTMENT OF  
HEALTH AND HUMAN SERVICES**  
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## EFFECTIVE TREATMENT

### Organization of the Chartbook on Effective Treatment

- Part of a series related to the National Healthcare Quality and Disparities Report (QDR)
- Contents:
  - Overview of the QDR
  - Overview of Effective Treatment, one of the priorities of the National Quality Strategy
  - Summary of trends and disparities in Effective Treatment from the QDR
  - Tracking of individual measures of Effective Treatment:
    - ◆ Cardiovascular Disease
    - ◆ Cancer
    - ◆ Chronic Kidney Disease
    - ◆ Diabetes
    - ◆ HIV Disease
    - ◆ Mental Health and Substance Abuse
    - ◆ Musculoskeletal Diseases
    - ◆ Respiratory Diseases

### National Healthcare Quality and Disparities Report

This Effective Treatment 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

The new QDR and supporting chartbooks are further integrated with the National Quality Strategy (NQS). The NQS has three overarching aims that build on the Institute for Healthcare Improvement's Triple Aim<sup>®</sup> and that support HHS's delivery system reform initiatives to achieve better care, smarter spending, and healthier people through incentives, information, and the way care is delivered. These aims are used to guide and assess local, State, and national efforts to improve health and the quality of health care.

To advance these aims, the NQS focuses on six priorities that address the most common health concerns that Americans face. Quality measures tracked in the QDR have been reorganized around these priorities, and a chartbook will be released marking progress for each NQS priority. Healthy Living is one of these NQS priorities and the topic of this chartbook.

Priority populations are noted in the legislation that requires AHRQ to report on health care disparities (42 U.S.C. 299a-1(a)(6)). These populations consist of groups with unique health care needs or issues that require special focus, such as racial and ethnic minorities, low-income populations, and people with special health care needs.

## Chartbooks Organized Around Priorities of the National Quality Strategy

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

Effective Treatment is one of the six national priorities identified by the National Quality Strategy (<http://www.ahrq.gov/workingforquality/index.html>).

## National Quality Strategy Priority 4



**Priority 4: Promoting the most effective prevention and treatment practices for the leading causes of mortality, starting with cardiovascular disease**

### LONG-TERM GOALS

1. Promote cardiovascular health through community interventions that result in improvement of social, economic, and environmental factors.
2. Promote cardiovascular health through interventions that result in adoption of the most healthy lifestyle behaviors across the lifespan.
3. Promote cardiovascular health through receipt of effective clinical preventive services across the lifespan in clinical and community settings.



Improving the quality of American health care demands an intense focus on preventing and treating cardiovascular disease. The lessons from this effort will feed into efforts addressing conditions such as HIV/AIDS and other chronic illnesses. Future initiatives will address a broad range of diseases and age ranges.

This chartbook begins with measures of effective treatment of cardiovascular disease. This is followed by measures of effective treatment of seven other leading causes of death in the United States.

## Chartbook on Effective Treatment

- This chartbook includes:
  - Summary of trends across measures of Effective Treatment from the QDR.
  - Figures illustrating select measures of Effective Treatment.
- [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/inhqrdtr/data/query>) provides access to all data tables.



## Rank of Leading Causes of Death by Age Group, 2010

Cause of Death	Total	Age (Years)					Report Section
		1-9	10-24	25-44	45-64	65+	
Cancer	2	2	4	2	1	2	Cancer
Accidents	5	1	1	1	3	9	
Heart disease	1	5	5	3	2	1	Cardiovascular Disease
Homicide		4	3	5			
Congenital malformations		3	6				
Suicide	10		2	4	8		Mental Health and Substance Abuse
Alzheimer's disease	6					5	
Chronic lower respiratory diseases	3	7	8		4	3	Respiratory Diseases
Chronic liver disease and cirrhosis				6	5		
Cerebrovascular diseases	4	8	7	8	7	4	Cardiovascular Disease
HIV disease				7			HIV and AIDS
Diabetes	7		10	9	6	6	Diabetes
Influenza and pneumonia	9	6	9	10		7	Respiratory Diseases
Kidney disease	8				9	8	Chronic Kidney Disease
Benign neoplasms		9					
Septicemia		10			10	10	<a href="#">Patient Safety Chartbook</a>

**Source:** National Vital Statistics Report 2013 Dec 20;62(6). [http://www.cdc.gov/nchs/data/nvsr/nvsr62/nvsr62\\_06.pdf](http://www.cdc.gov/nchs/data/nvsr/nvsr62/nvsr62_06.pdf).

- Consistent with the NQS priority “Promoting the most effective prevention and treatment of the leading causes of mortality,” identified in the *National Strategy for Quality Improvement in Health Care*, the conditions tracked in this chartbook include the leading causes of death in the United States for which significant health care quality measurement activity exists.
- Some leading causes of death, such as accidents and homicide, cannot be tracked in this chartbook because related performance standards and quality measures are not well defined.
- Other leading causes of death cannot be tracked in this chartbook because robust national data sources are lacking.

## Leading Chronic Conditions Causing Limitation of Activity, 2010

Cause of Limitation	Prevalence (Millions)	Report Section
Back/neck conditions	7.5	Musculoskeletal Diseases
Arthritis/rheumatism	6.8	Musculoskeletal Diseases
Heart condition	4.2	Cardiovascular Disease
Depression/anxiety	4.0	Mental Health and Substance Abuse
Musculoskeletal condition	3.8	Musculoskeletal Diseases
Diabetes	3.6	Diabetes
Hypertension	3.6	Cardiovascular Disease
Nervous system problem	3.3	
Lung/breathing problem	3.1	Respiratory Diseases
Fracture/bone/joint injury	2.8	Musculoskeletal Diseases

**Source:** National Heart, Lung, and Blood Institute. Morbidity & mortality: 2012 chartbook on cardiovascular, lung, and blood diseases. Bethesda, MD: National Institutes of Health; February 2012. [www.nhlbi.nih.gov/files/docs/research/2012\\_ChartBook.pdf](http://www.nhlbi.nih.gov/files/docs/research/2012_ChartBook.pdf)

- Musculoskeletal disease is not a leading cause of death, but it is included in this chartbook because it is a leading cause of functional limitation in the United States.

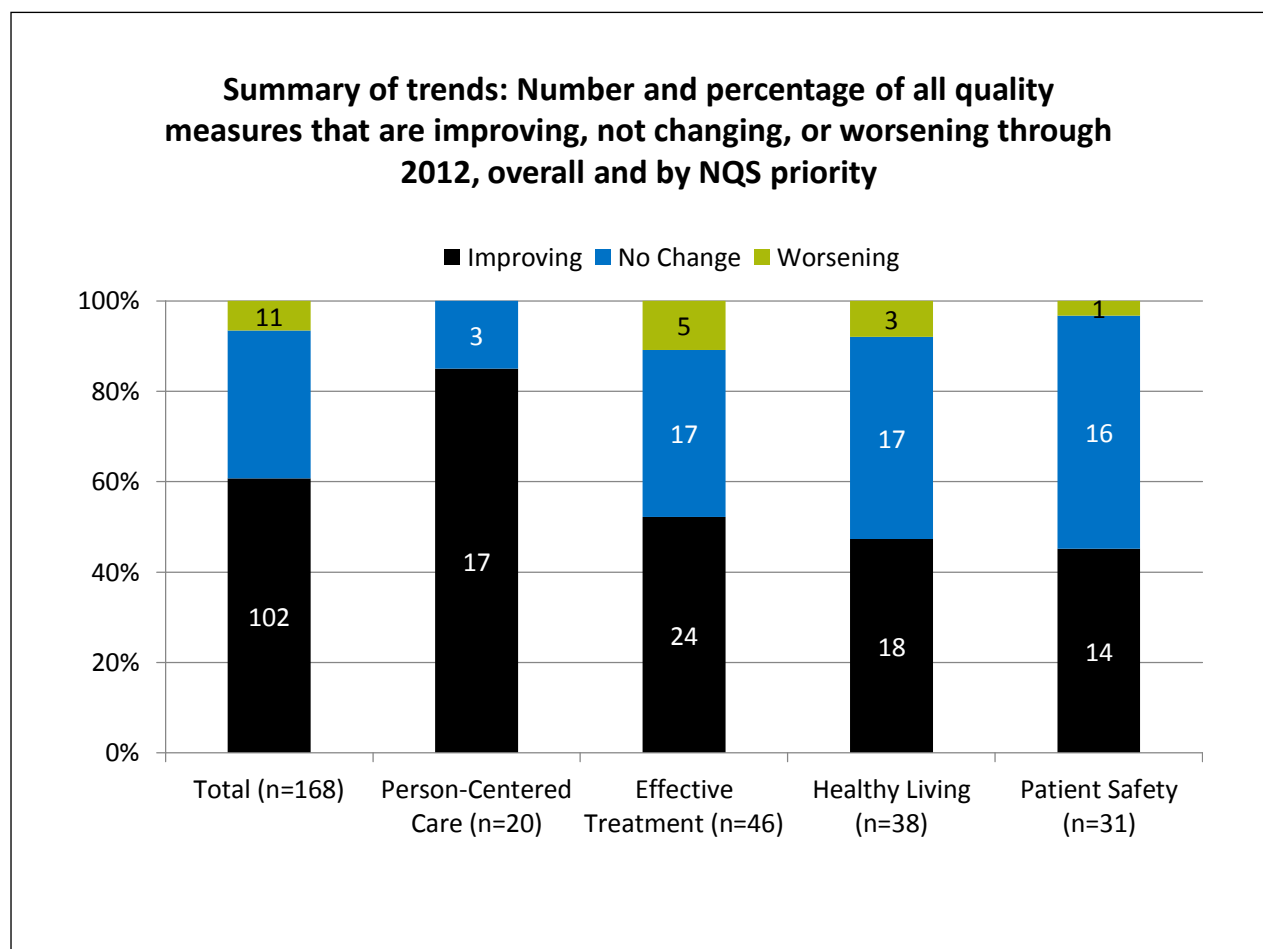
## Most Costly Conditions, 2011

Condition	Total Expenses (Millions)	Report Section
Heart conditions	\$116,308	Cardiovascular Disease
Cancer	\$88,668	Cancer
Trauma-related disorders	\$81,778	
Mental disorders	\$77,641	Mental Health and Substance Abuse
Osteoarthritis and other nontraumatic joint disorders	\$76,173	Musculoskeletal Diseases
COPD, asthma	\$75,183	Respiratory Diseases
Diabetes mellitus	\$55,224	Diabetes
Hypertension	\$42,734	Cardiovascular Disease
Normal birth/live born	\$39,381	
Hyperlipidemia	\$38,905	Cardiovascular Disease

**Source:** Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, Household Component Summary Tables. [http://meps.ahrq.gov/mepsweb/data\\_stats/tables\\_compendia\\_hh\\_interactive.jsp](http://meps.ahrq.gov/mepsweb/data_stats/tables_compendia_hh_interactive.jsp).

- The conditions tracked in this chartbook are also prominent on the list of conditions with the highest health care expenses.

## Summary of Trends Across National Quality Strategy Priorities



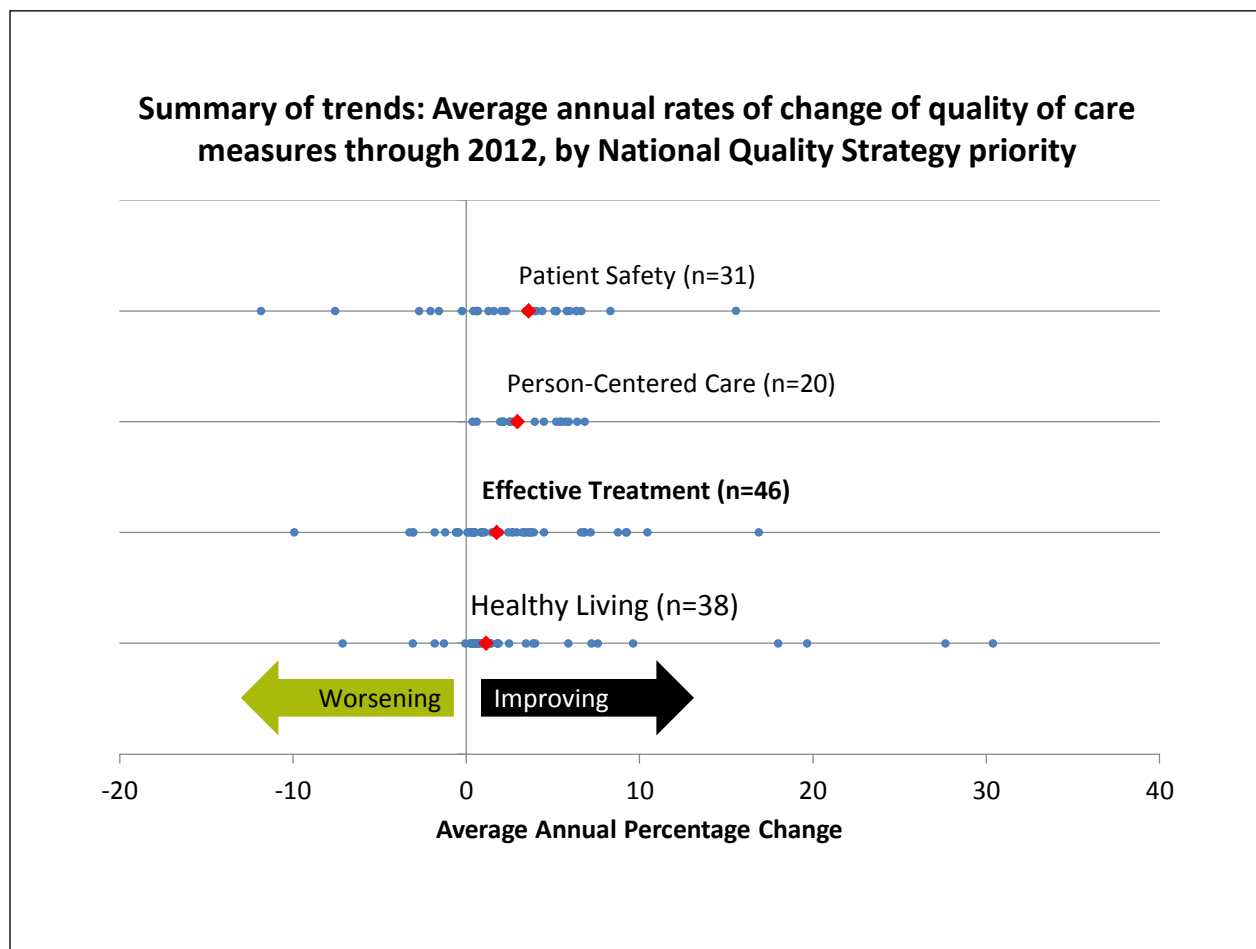
**Key:** n = number of measures.

**Note:** For the majority of measures, trend data are available from 2001-2002 to 2012.

For each measure with at least four estimates over time, weighted log-linear regression is used to calculate average annual percentage change and to assess statistical significance. Measures are aligned so that positive change indicates improved access to care.

- **Improving** = Rates of change are positive at 1% per year or greater and are statistically significant.
- **No Change** = Rate of change is less than 1% per year or is not statistically significant.
- **Worsening** = Rates of change are negative at -1% per year or greater and are statistically significant.
- About half of Effective Treatment measures improved compared with 60% of all quality measures.

## Summary of Trends Across National Quality Strategy Priorities



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

**Note:** Large red diamonds indicate median values. For each measure with at least four estimates over time, weighted log-linear regression is used to calculate average annual percentage change. Measures are aligned so that positive change indicates improved quality of care.

- Median change in quality was 1.7% per year among measures of Effective Treatment.

### Effective Treatment Measures That Achieved 95% Performance This Year and Will No Longer Be Reported in the QDR

- Of 11 QDR measures that reached 95% performance in 2014, 9 were Effective Treatment measures, of which 7 were publicly reported by the Centers for Medicare & Medicaid Services (CMS) (bold):
  - **Hospital patients with heart attack given percutaneous coronary intervention within 90 minutes**
  - Adults with HIV and CD4 cell count of 350 or less who received highly active antiretroviral therapy during the year
  - **Hospital patients with pneumonia who had blood cultures before antibiotics were administered**

- **Hospital patients age 65+ with pneumonia who received pneumococcal screening or vaccination**
- **Hospital patients age 50+ with pneumonia who received influenza screening or vaccination**
- **Hospital patients with heart failure and left ventricular systolic dysfunction who were prescribed angiotensin-converting enzyme or angiotensin receptor blocker at discharge**
- **Hospital patients with pneumonia who received the initial antibiotic dose consistent with current recommendations**
- **Hospital patients with pneumonia who received the initial antibiotic dose within 6 hours of arrival**
- **Adults with HIV and CD4 cell counts of 200 or less who received *Pneumocystis* pneumonia prophylaxis during the year**

### Effective Treatment Measures That Improved Quickly

- Two Effective Treatment measures improved quickly, defined as an average annual rate of change greater than 10% per year:
  - Patients with colon cancer who received surgical resection that included 12+ lymph nodes pathologically examined
  - Women with Stage I-IIb breast cancer who received axillary node dissection or sentinel lymph node biopsy at time of surgery

### Effective Treatment Measures That Showed Worsening Quality

- Four Effective Treatment measures showed worsening over time, including three measures of management of chronic conditions (bold):
  - Suicide deaths per 100,000 population
  - **Admissions with diabetes with short-term complications per 100,000 population, age 18+**
  - **Adults age 40+ with diagnosed diabetes who had their feet checked for sores or irritation in the calendar year**
  - **People with current asthma who are now taking preventive medicine daily or almost daily**

### Effective Treatment Measures With Elimination of Disparities

- One Effective Treatment measure showed elimination of a Black-White disparity:
  - Deaths per 1,000 hospital admissions with abdominal aortic aneurysm repair, age 18+
- Three Effective Treatment measures showed elimination of Asian-White disparities:
  - Adults age 40+ with diagnosed diabetes who had their feet checked in the calendar year
  - Adults age 40+ with diagnosed diabetes who received a dilated eye examination in the calendar year

- Patients under age 70 with treated chronic kidney failure who received a transplant within 3 years of date of renal failure

## **Effective Treatment Measures With Widening of Disparities**

- One Effective Treatment measure showed widening of Black-White disparities:
  - People age 12+ who needed treatment for illicit drug use and who received treatment at a specialty facility in the last 12 months
- Two Effective Treatment measures showed widening of income-related disparities:
  - Adults age 40+ with diagnosed diabetes who received 2+ hemoglobin A1c measurements in the calendar year
  - Adults with chronic joint symptoms who have ever seen a doctor or other health professional for joint symptoms

## **Measures of Effective Treatment**

- This chartbook tracks measures of Effective Treatment through 2012 and 2013, overall and for populations defined by age, race, ethnicity, income, education, insurance, and number of chronic conditions.
- Measures of Effective Treatment include:
  - Receipt of processes that reflect high-quality care
  - Outcomes related in part to receipt of high-quality care

## **Conditions Covered**

- This chartbook is organized around eight conditions that are the leading causes of mortality and morbidity in the United States, starting with cardiovascular disease:
  - Cardiovascular disease
  - Cancer
  - Chronic kidney disease
  - Diabetes
  - HIV and AIDS
  - Mental health and substance abuse
  - Musculoskeletal diseases
  - Respiratory diseases



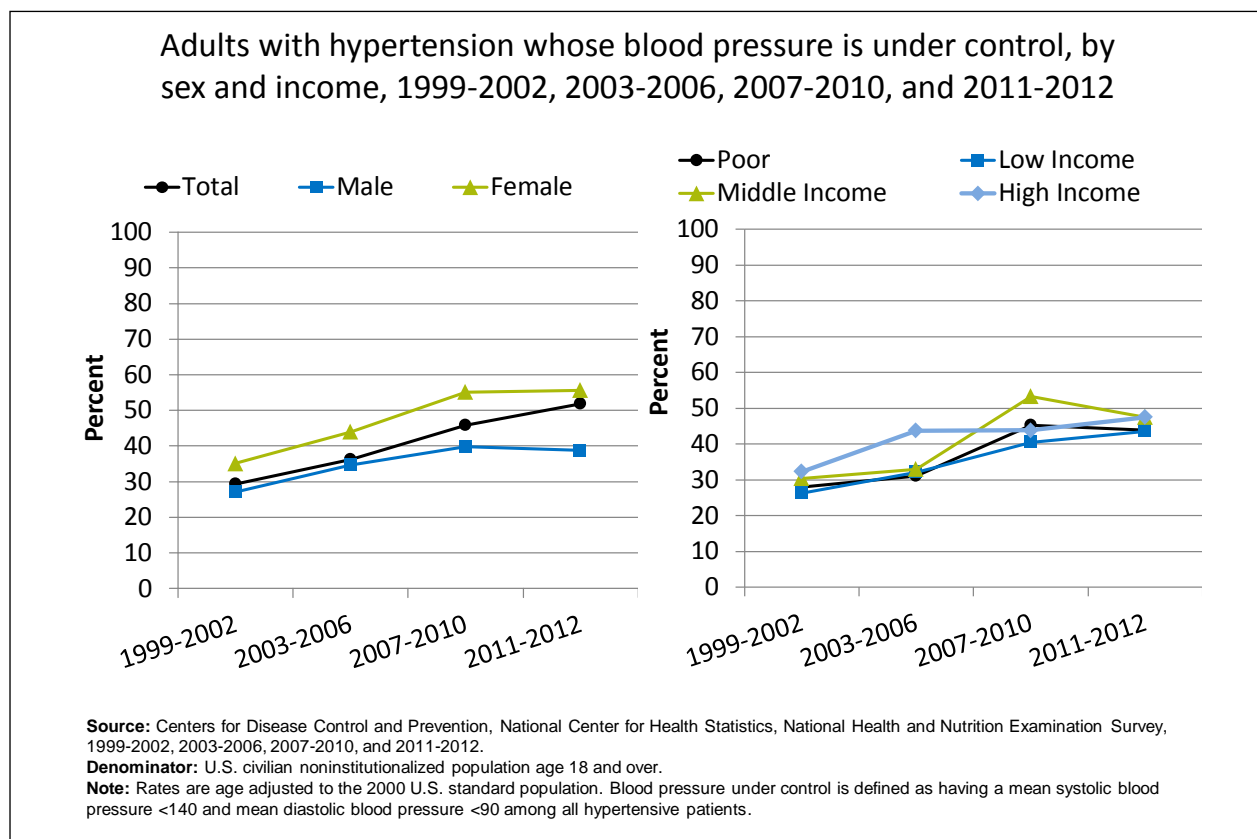
## Cardiovascular Disease

### Measures of Effective Treatment of Cardiovascular Disease

- Treatment of Hypertension
  - Outcome: Adults with hypertension whose blood pressure is under control
- Treatment of Heart Attack:
  - Process: Hospital patients with heart attack given fibrinolytic medication within 30 minutes of arrival
  - Outcome: Inpatient deaths per 1,000 adult hospital admissions with heart attack
- Treatment of Congestive Heart Failure
  - Outcome: Adult admissions for congestive heart failure per 100,000 population
  - Cost: Total national costs of hospitalizations for congestive heart failure
- Measures of screening for cardiovascular disease and risk factors are in the [Healthy Living chartbook](#).

### Treatment of Hypertension

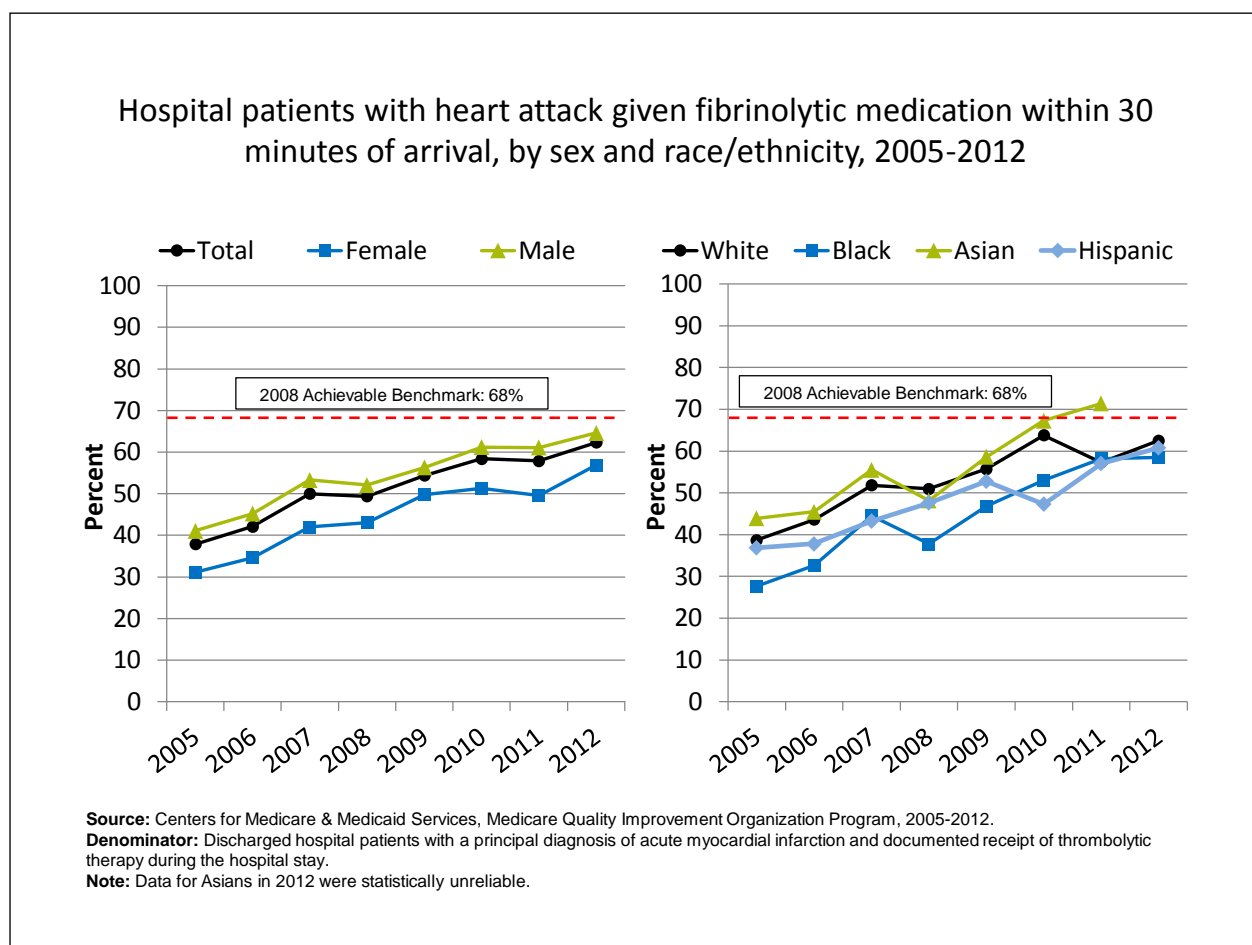
#### Adults Whose Hypertension Is Under Control



- **Importance:** Although progress has been made in raising awareness of blood pressure screening and monitoring, blood pressure control among people with diagnosed high blood pressure remains a problem.
- **Trends:** From 1999-2002 to 2011-2012, the percentage of adults with hypertension who had their blood pressure under control improved overall and for both sexes. The percentage also improved for all income groups except middle-income adults.
- **Groups With Disparities:** In all years, the percentage of adults with hypertension who had their blood pressure under control was lower for men than for women.

## Treatment of Heart Attack

### Fibrinolytic Medication



- **Importance:** Some heart attacks are caused by blood clots. Early actions, such as fibrinolytic medication, may open blockages caused by blood clots, reduce heart muscle damage, and save lives. To be effective, these actions need to be performed quickly after the start of a heart attack.
- **Trends:** From 2005 to 2012, the percentage of patients who received timely fibrinolytic medication improved overall, for both sexes, and for all racial/ethnic groups.

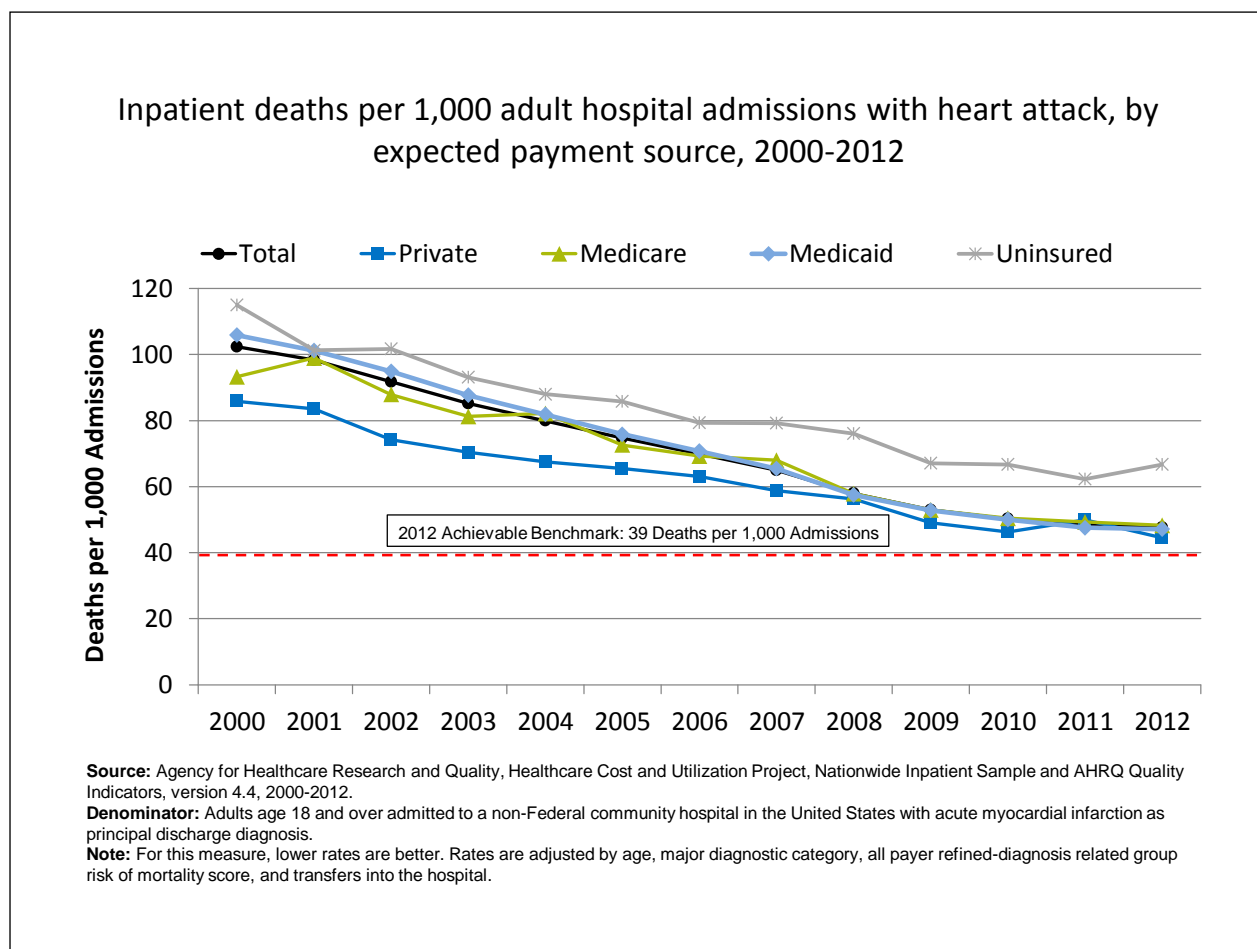
- **Groups With Disparities:**

- Until 2012, the percentage of patients who received timely fibrinolytic medication was significantly higher for males than for females.
- Until 2011, the percentage of patients who received timely fibrinolytic medication was significantly higher for Whites than for Blacks.

- **Achievable Benchmark:**

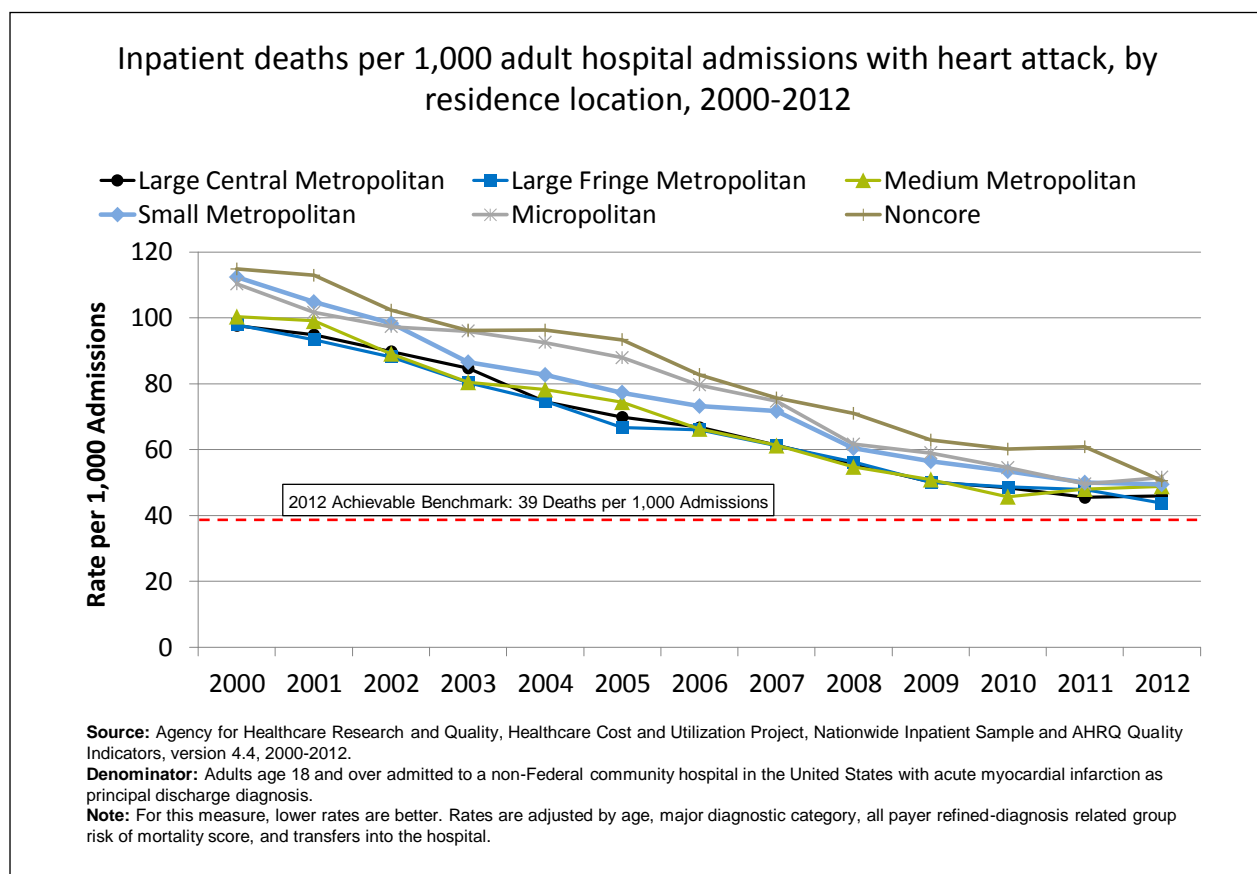
- The 2010 top 5 State achievable benchmark was 68%. The top 5 States that contributed to the achievable benchmark are Arkansas, California, Georgia, Mississippi, and Texas.
- Asian heart attack patients achieved the benchmark in 2011.
- At the current rate of improvement, the achievable benchmark could be attained overall in 2 years.
- Male heart attack patients should reach the achievable benchmark in 1 year and females in 3 years.
- White, Black, and Hispanic heart attack patients should reach the benchmark in 2 years.

### Inpatient Deaths



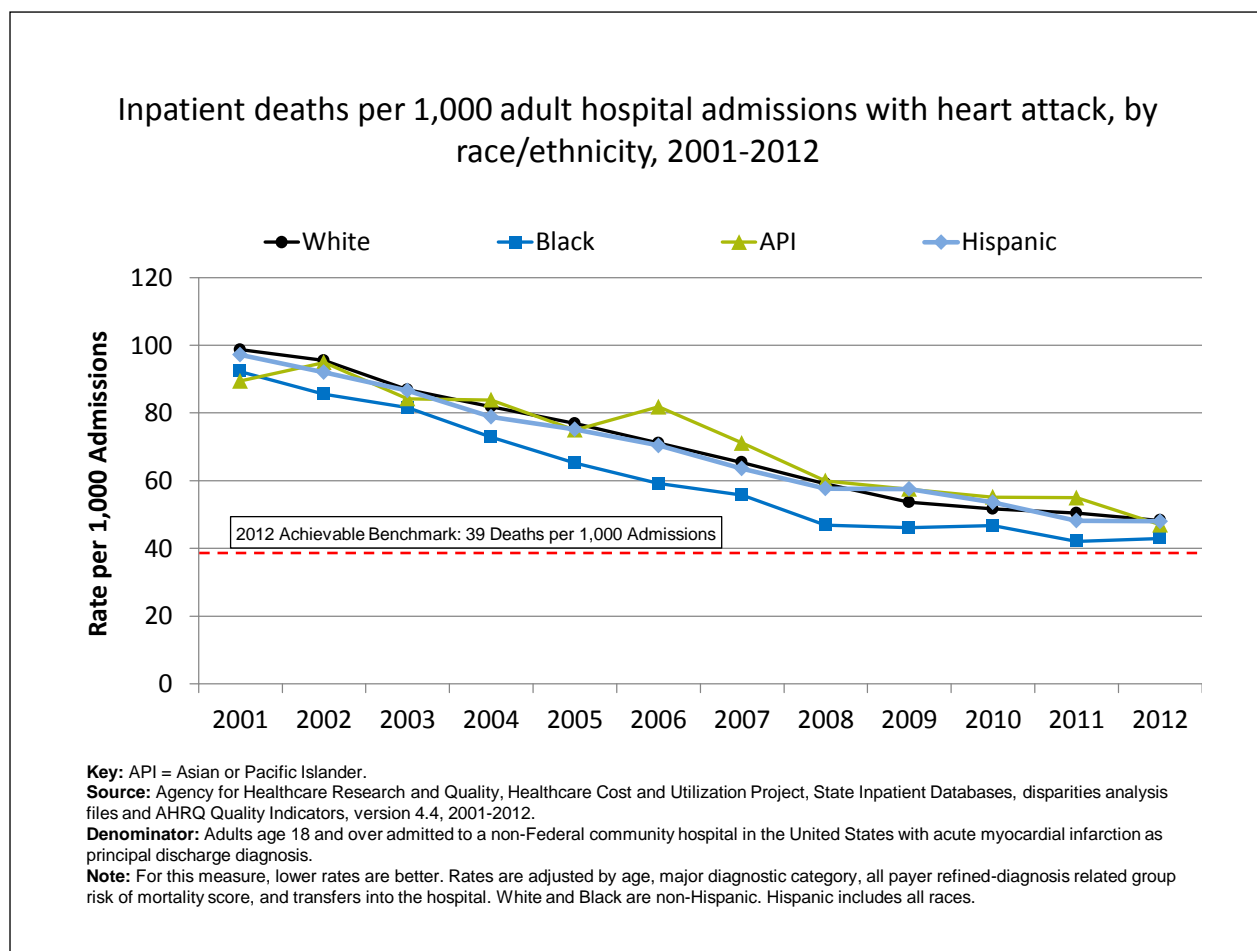
- **Importance:** Heart attack is a common life-threatening condition that requires rapid recognition and efficient treatment in a hospital to reduce the risk of serious heart damage and death.
- **Trends:** From 2000 to 2012, the risk-adjusted inpatient mortality rate for hospital admissions with heart attack decreased significantly overall and for all insurance groups.
- **Groups With Disparities:** In all years, uninsured patients had higher inpatient mortality rates for hospital admissions with heart attack than privately insured patients.
- **Achievable Benchmark:**
  - The 2008 top 4 State achievable benchmark for inpatient heart attack mortality was 48 deaths per 1,000 admissions. By 2012, this benchmark had been attained overall and for all insurance groups except uninsured patients.
  - Because the 2008 benchmark was achieved by the total population, a new 2012 top 4 State achievable benchmark was set at 39 deaths per 1,000 admissions. The top 4 States that contributed to the achievable benchmark are Alaska, Arizona, Michigan, and Rhode Island.
  - At the current rate of improvement, the 2012 benchmark could be met for the total population in approximately 2 years.
  - At current rates of improvement, uninsured patients could reach the 2012 benchmark in 7 years while other insurance groups could reach it in 2 years.

### Inpatient Deaths



- **Importance:** Urban-rural disparities in cardiovascular mortality have been observed.
- **Trends:** From 2000 to 2012, the risk-adjusted inpatient mortality rate for hospital admissions with heart attack decreased significantly for all residence location groups.
- **Groups With Disparities:** In all years, residents of noncore areas had higher inpatient mortality rates for hospital admissions with heart attack than residents of large fringe metropolitan areas.
- **Achievable Benchmark:**
  - The 2008 top 4 State achievable benchmark for inpatient heart attack mortality was 48 deaths per 1,000 admissions. By 2012, this benchmark had been attained overall and for residents of large central and large fringe metropolitan areas.
  - Because the 2008 benchmark was achieved by the total population, a new 2012 top 4 State achievable benchmark was set at 39 deaths per 1,000 admissions. The top 4 States that contributed to the achievable benchmark are Alaska, Arizona, Michigan, and Rhode Island.
  - At current rates of improvement, the 2012 benchmark could be met for the total population and all residence location groups in approximately 2 years.

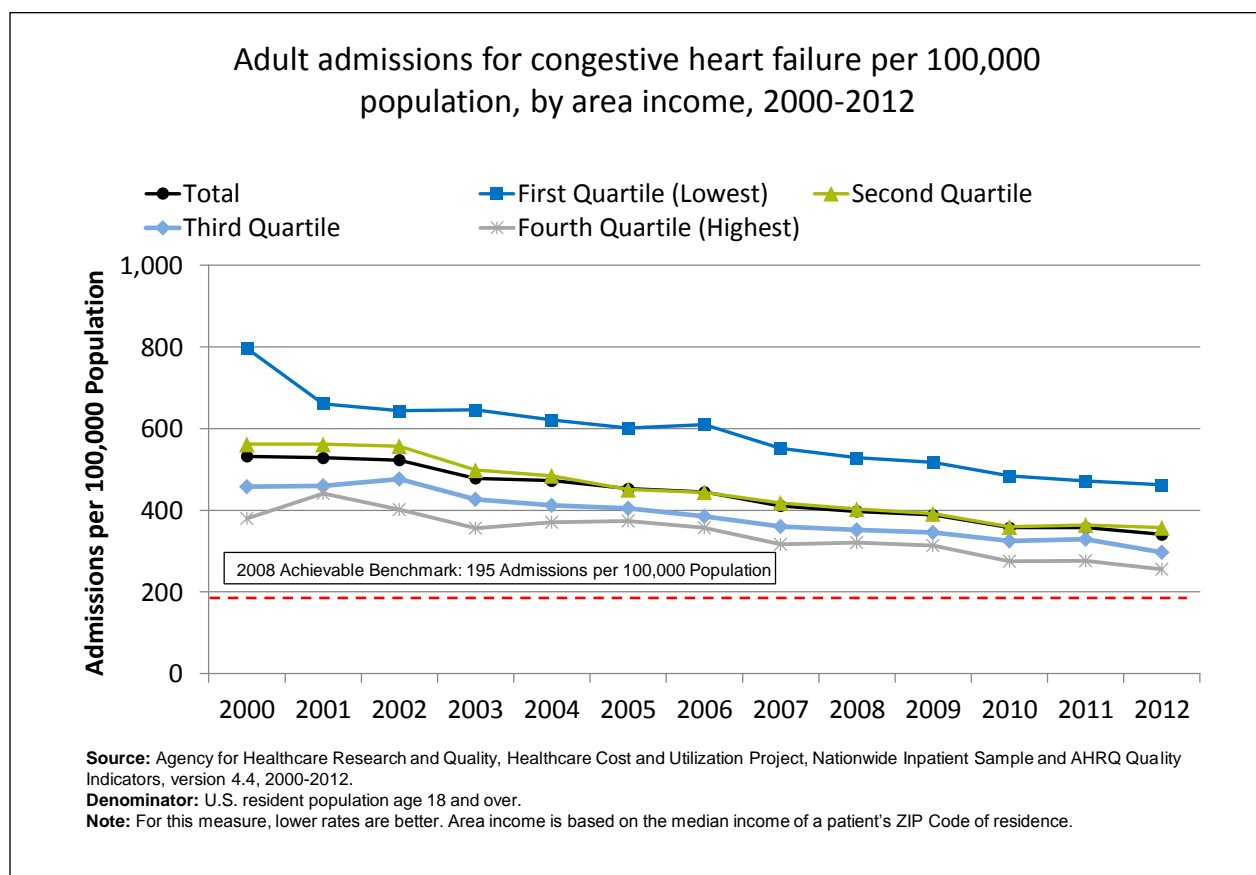
### Inpatient Deaths



- **Importance:** Racial disparities in heart attack care have been observed.
- **Trends:** From 2001 to 2012, the risk-adjusted inpatient mortality rate for hospital admissions with heart attack decreased significantly for all racial/ethnic groups.
- **Groups With Disparities:** In 2012, Black patients had lower inpatient mortality rates for hospital admissions with heart attack than White patients.
- **Achievable Benchmark:**
  - The 2008 top 4 State achievable benchmark for inpatient heart attack mortality was 48 deaths per 1,000 admissions. By 2012, this benchmark had been attained for all racial/ethnic groups.
  - Because the 2008 benchmark was achieved by the total population, a new 2012 top 4 State achievable benchmark was set at 39 deaths per 1,000 admissions. The top 4 States that contributed to the achievable benchmark are Alaska, Arizona, Michigan, and Rhode Island.
  - At current rates of improvement, all racial/ethnic groups could reach the 2012 benchmark in approximately 2 years.

## Treatment of Congestive Heart Failure

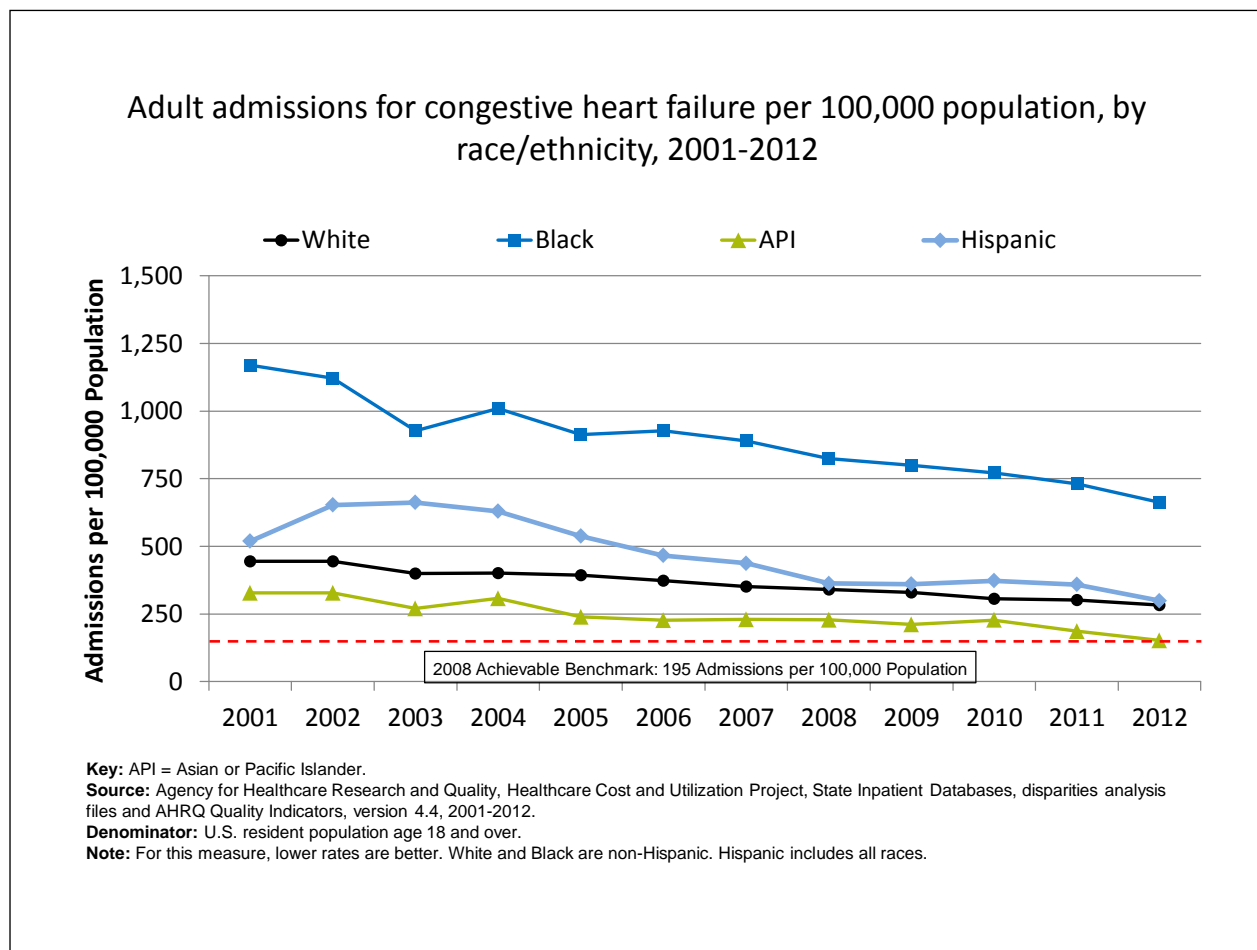
### Adult Admissions for Congestive Heart Failure





- **Importance:** Some hospitalizations for heart failure are unavoidable, but rates of hospitalization can be influenced by the quality of outpatient care.
- **Trends:** From 2000 to 2012, the rate of admission for congestive heart failure among adults decreased significantly overall and for all area income groups.
- **Groups With Disparities:** In all years, compared with residents in the highest area income quartile, rates of admission for congestive heart failure were higher among residents in the lowest and second area income quartiles.
- **Achievable Benchmark:**
  - The 2008 top 4 State achievable benchmark for adult congestive heart failure admissions was 195 admissions per 100,000 population. The top 4 States that contributed to the achievable benchmark are Colorado, Oregon, Utah, and Vermont.
  - At current rates of improvement, residents in the highest area income quartile could achieve the benchmark in 5 years while residents in the lowest area income quartile would need 12 years.

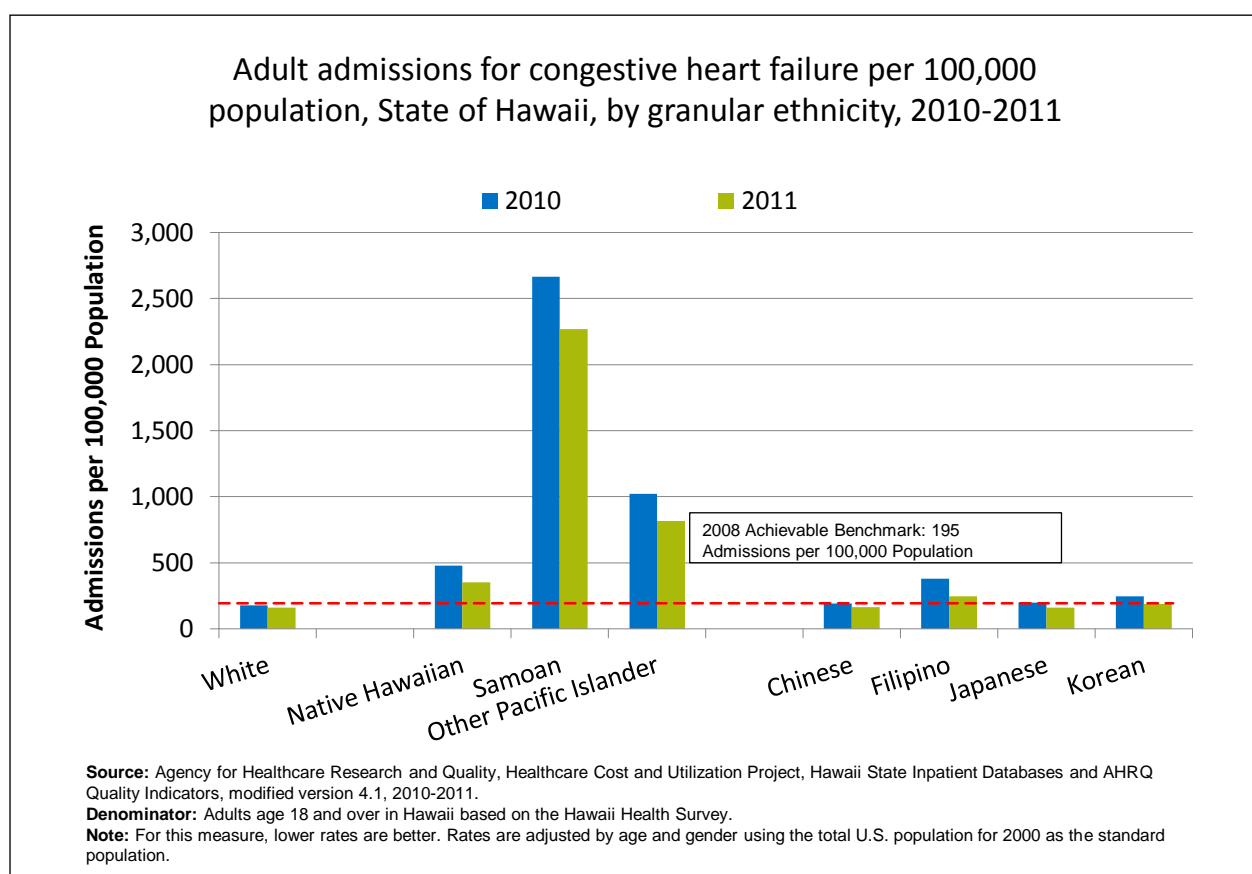
### Adult Admissions for Congestive Heart Failure



- **Importance:** Racial disparities in care for congestive heart failure have been observed.
- **Trends:** From 2001 to 2012, the rate of admission for congestive heart failure among adults decreased significantly for all racial/ethnic groups.

- **Groups With Disparities:** In all years, compared with White patients, rates of admission for congestive heart failure were higher among Black patients and lower among API patients.
- **Achievable Benchmark:**
  - The 2008 top 4 State achievable benchmark for adult congestive heart failure admissions was 195 admissions per 100,000 population. The top 4 States that contributed to the achievable benchmark are Colorado, Oregon, Utah, and Vermont.
  - By 2012, Asian and Pacific Islander (API) patients had reached the benchmark.
  - At current rates of improvement, Hispanic patients could achieve the benchmark in 3 years and White patients could achieve it in 6 years. Black patients would need 12 years to achieve the benchmark.

### Adult Admissions for Congestive Heart Failure

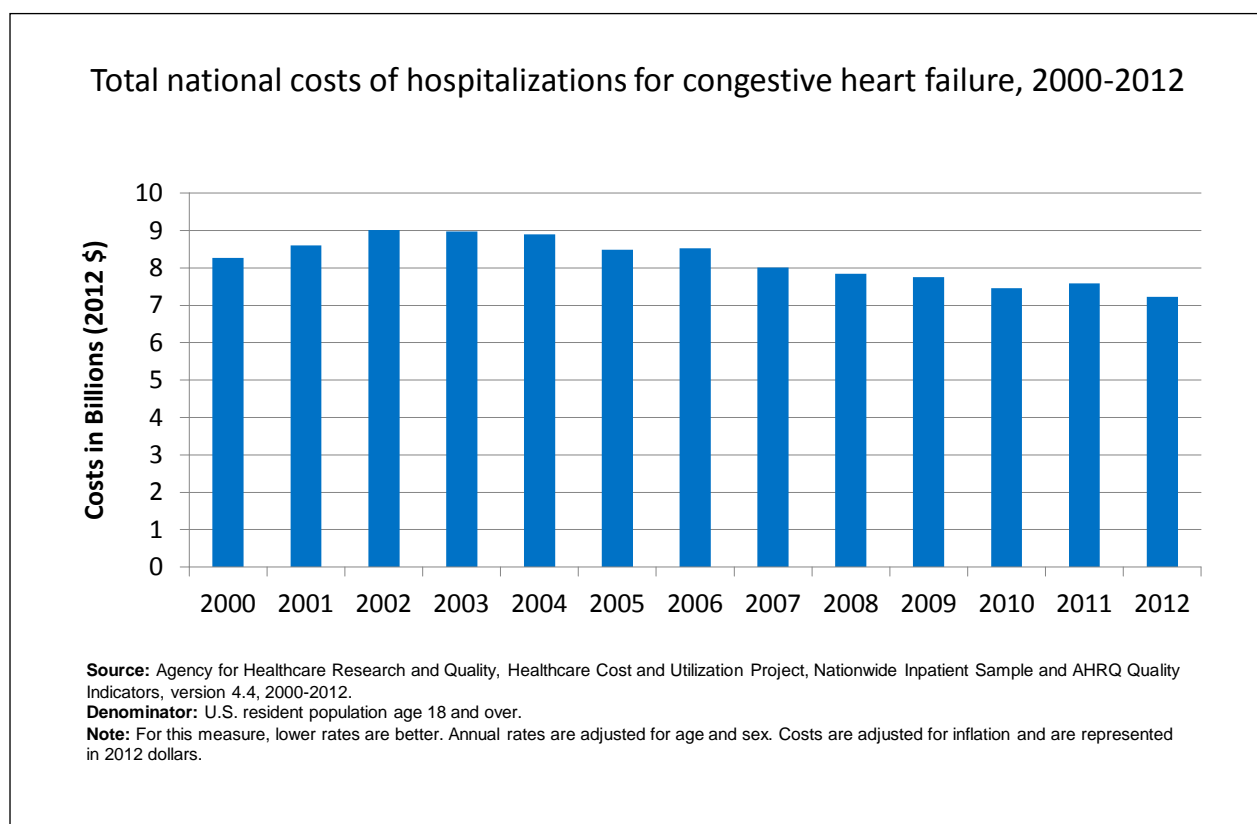


- **Importance:**
  - The ability to assess disparities among Native Hawaiians and Other Pacific Islanders (NHOPIs) has been a challenge for two main reasons:
    - ◆ First, the NHOPI racial category is relatively new to Federal data collection. Before 1997, NHOPIs were classified as part of the API racial category and could not be identified separately in most Federal data. In 1997, the Office of Management and Budget promulgated new standards for Federal data on race and ethnicity and mandated that information about NHOPIs be collected separately from information

about Asians. However, these standards have not yet been incorporated into all databases.

- ♦ Second, when information about this population was collected, databases often included insufficient numbers of NHOPIs to allow reliable estimates to be made.
- Hawaii, home to more than half of Native Hawaiians in the United States, is a leader in collecting health information on NHOPI and Asian populations.
- **Groups With Disparities:** In Hawaii, in both years, Native Hawaiians, Samoans, Other Pacific Islanders, and Filipinos had higher rates of hospital admission for congestive heart failure than Whites.
- **Achievable Benchmark:**
  - The 2008 top 4 State achievable benchmark for adult congestive heart failure admissions was 195 admissions per 100,000 population. The top 4 States that contributed to the achievable benchmark are Colorado, Oregon, Utah, and Vermont.
  - In Hawaii, Whites, Chinese people, Japanese people, and Koreans have achieved the benchmark while Native Hawaiians, Samoans, Other Pacific Islanders, and Filipinos have not.

#### Costs of Hospitalizations for Congestive Heart Failure



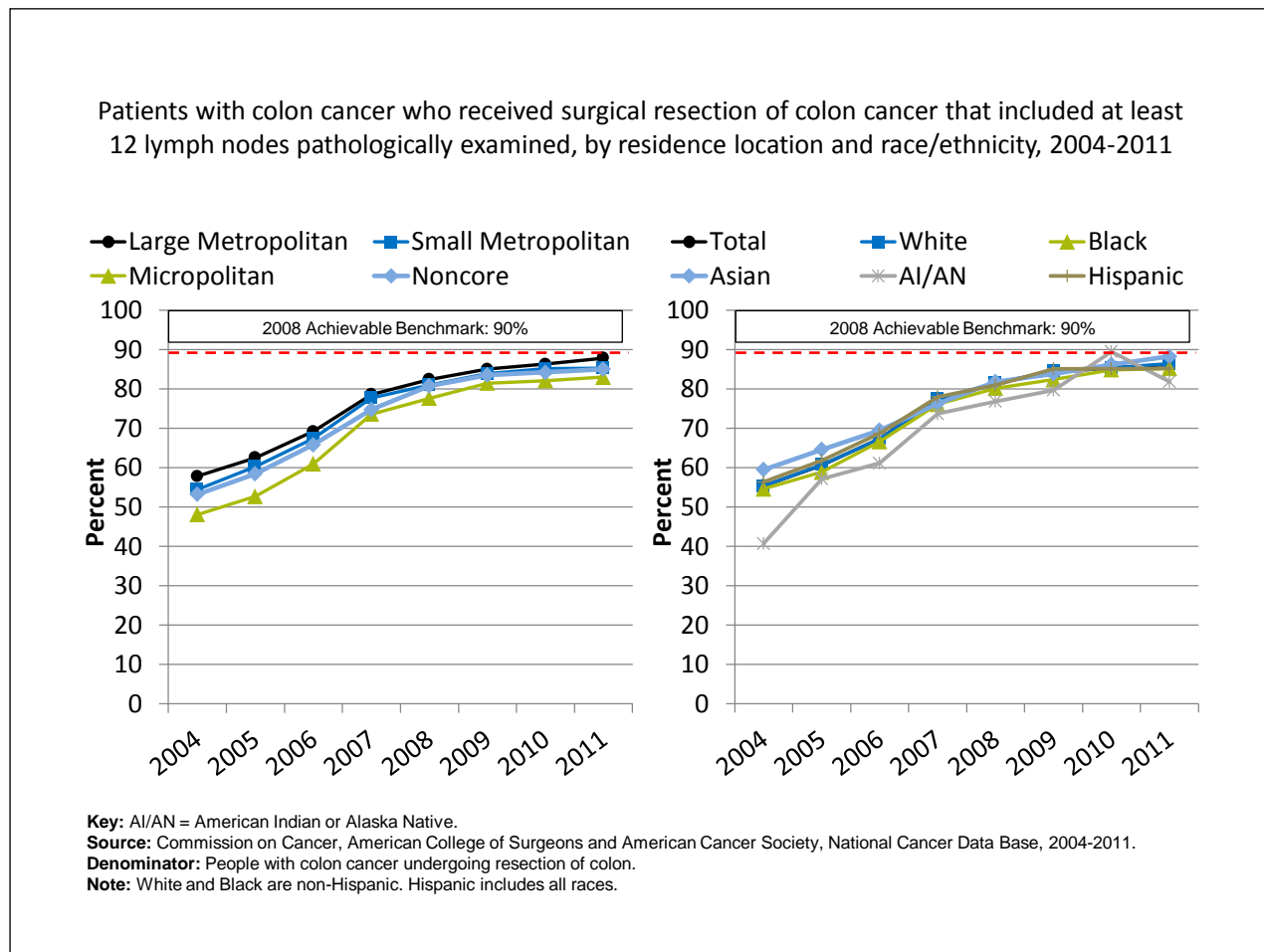
- **Importance:** Congestive heart failure is one of the most costly conditions treated in U.S. hospitals.
- **Trends:** After peaking in 2002, costs have fallen from \$9.0 to \$7.2 billion in 2012 dollars.

## Cancer

### Measures of Effective Treatment of Cancer

- **Process:** Patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined
- **Outcome:** Age-adjusted colorectal cancer deaths per 100,000 population
- Measures of screening for cancer are located in the [Healthy Living chartbook](#).

### Surgical Resection of Colon Cancer



- **Importance:** Recommended cancer treatment depends on different factors, such as the stage or extent of the cancer within the body, especially whether the disease has spread from the original site to other parts of the body. Colon cancer typically begins as a benign polyp that may become cancerous and then spread to local lymph nodes. Hence, ensuring adequate examination of lymph nodes when surgery is performed is important.
- **Trends:** From 2004 to 2011, the percentage of patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined improved overall and for all residence location and racial/ethnic groups.

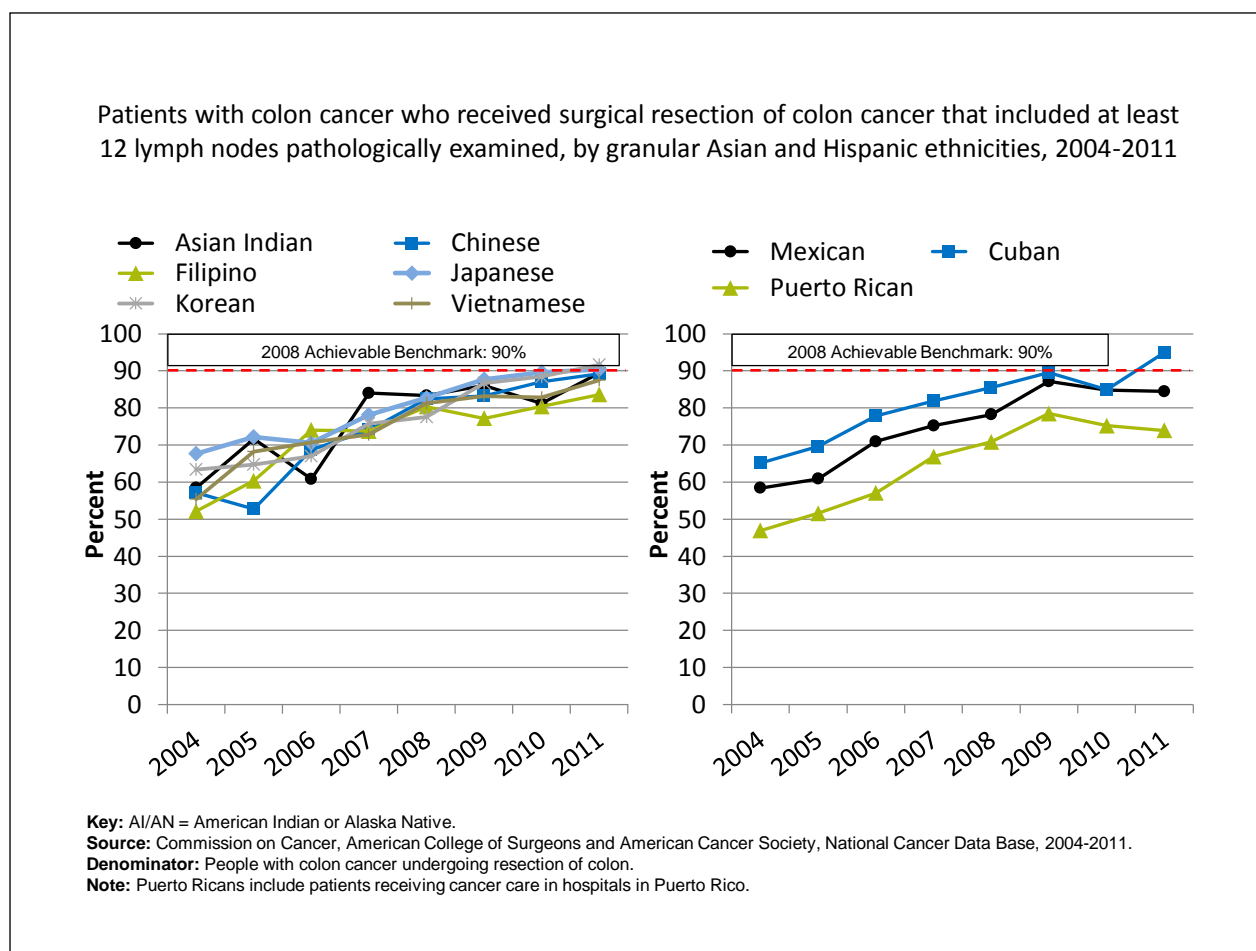
- **Groups With Disparities:**

- In all years, the percentage of patients who had at least 12 lymph nodes examined was significantly lower for residents of micropolitan areas than for residents of large metropolitan areas.

- **Achievable Benchmark:**

- The 2008 top 5 State achievable benchmark was 90%. The top 5 States that contributed to the achievable benchmark are Delaware, Missouri, Utah, Vermont, and Wisconsin.
- At the current rates of improvement, the achievable benchmark could be attained overall and for all residence location and racial/ethnic groups within a year.

## Surgical Resection of Colon Cancer

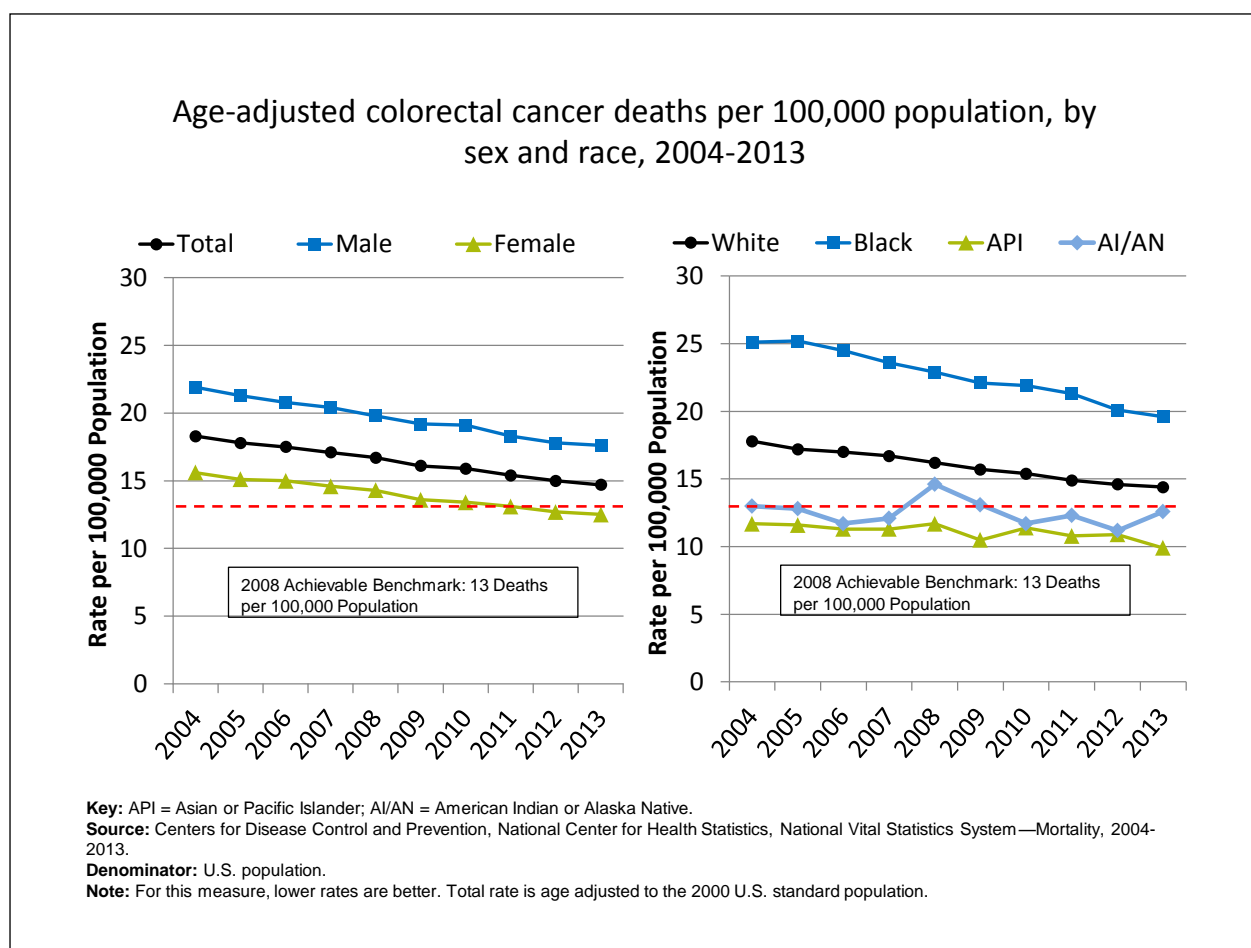


- **Importance:** Asian and Hispanic groups are not homogeneous. Data on granular Asian and Hispanic ethnicities are limited but often show variation in care.
- **Trends:** From 2004 to 2011, the percentage of patients with colon cancer who received surgical resection of colon cancer that included at least 12 lymph nodes pathologically examined improved for all Asian and Hispanic ethnic groups.

- **Achievable Benchmark:**

- The 2008 top 5 State achievable benchmark was 90%. The top 5 States that contributed to the achievable benchmark are Delaware, Missouri, Utah, Vermont, and Wisconsin.
- Cubans, Koreans, and Japanese people have achieved the benchmark.
- At the current rates of improvement, most Asian and Hispanic ethnic groups could attain the benchmark in 1 year but Filipinos would need 2 years and Puerto Ricans would need 4 years.

## Colorectal Cancer Deaths



- **Importance:** The death rate from a disease is a function of many factors, including the causes of the disease; social forces; and effectiveness of the health care system in providing prevention, treatment, and management of the disease. Colorectal cancer deaths reflect the impact of colorectal cancer screening, diagnosis, and treatment.
- **Trends:** From 2004 to 2013, the age-adjusted colorectal cancer death rate improved overall, for both sexes, and for all racial groups except American Indians and Alaska Natives (AI/ANs).



- **Groups With Disparities:**

- In all years, the colorectal cancer death rate was:
  - ◆ Higher for males than for females.
  - ◆ Higher for Blacks than for Whites.
  - ◆ Lower for APIs than for Whites.

- **Achievable Benchmark:**

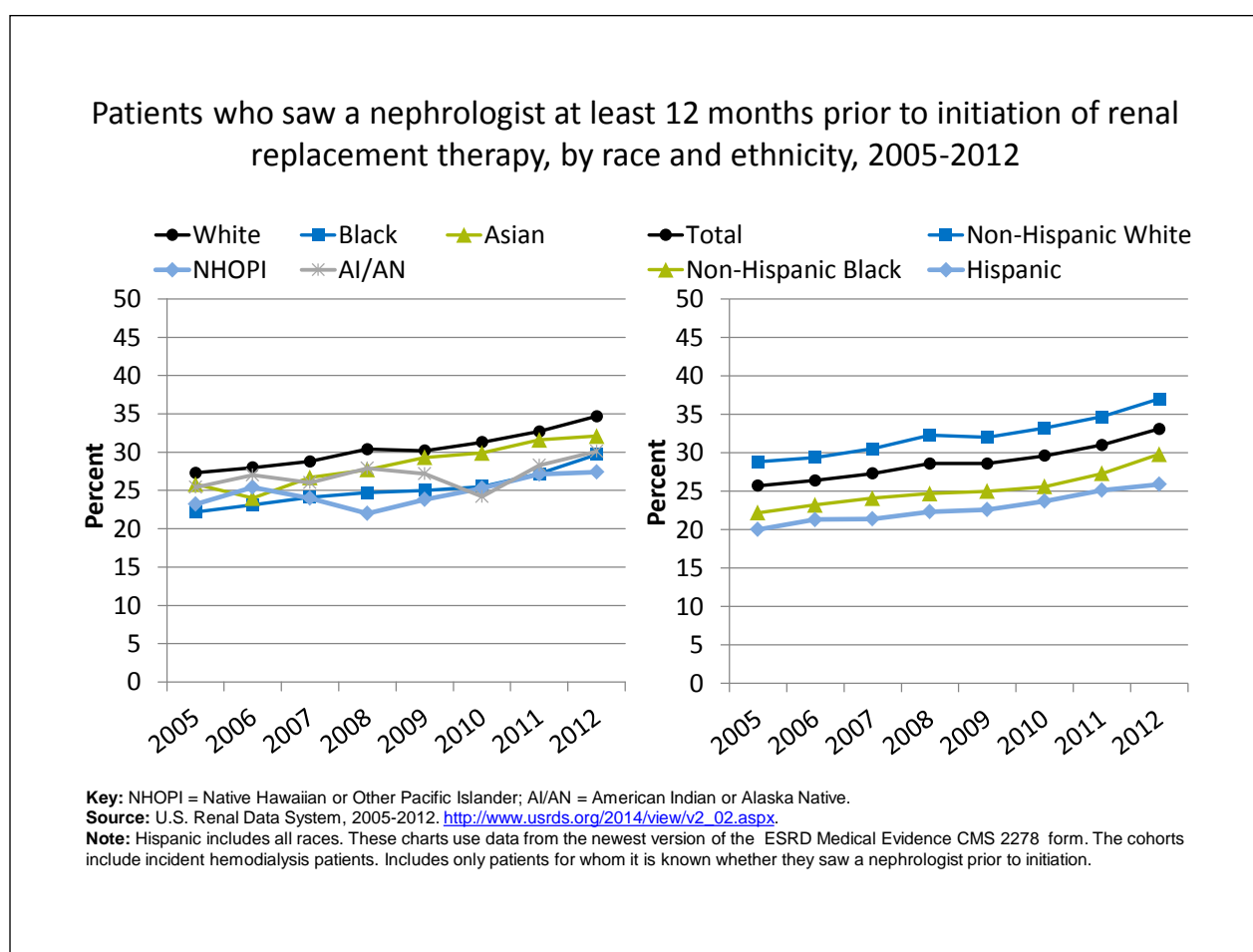
- The 2008 top 5 State achievable benchmark was 13 deaths per 100,000 population. The top 5 States that contributed to the achievable benchmark are Arizona, Hawaii, Idaho, Montana, and Utah.
- The benchmark has been achieved by females, APIs, and AI/ANs.
- At the current rates of improvement, the achievable benchmark could be attained overall and for Whites in 4 years but males and Blacks would require 10 years.

## Chronic Kidney Disease

### Measures of Effective Treatment of Chronic Kidney Disease

- Process:
  - Nephrology care before kidney failure
  - Registration for transplantation
- Outcome:
  - Hemodialysis death rate

### Nephrology Care Before Kidney Failure



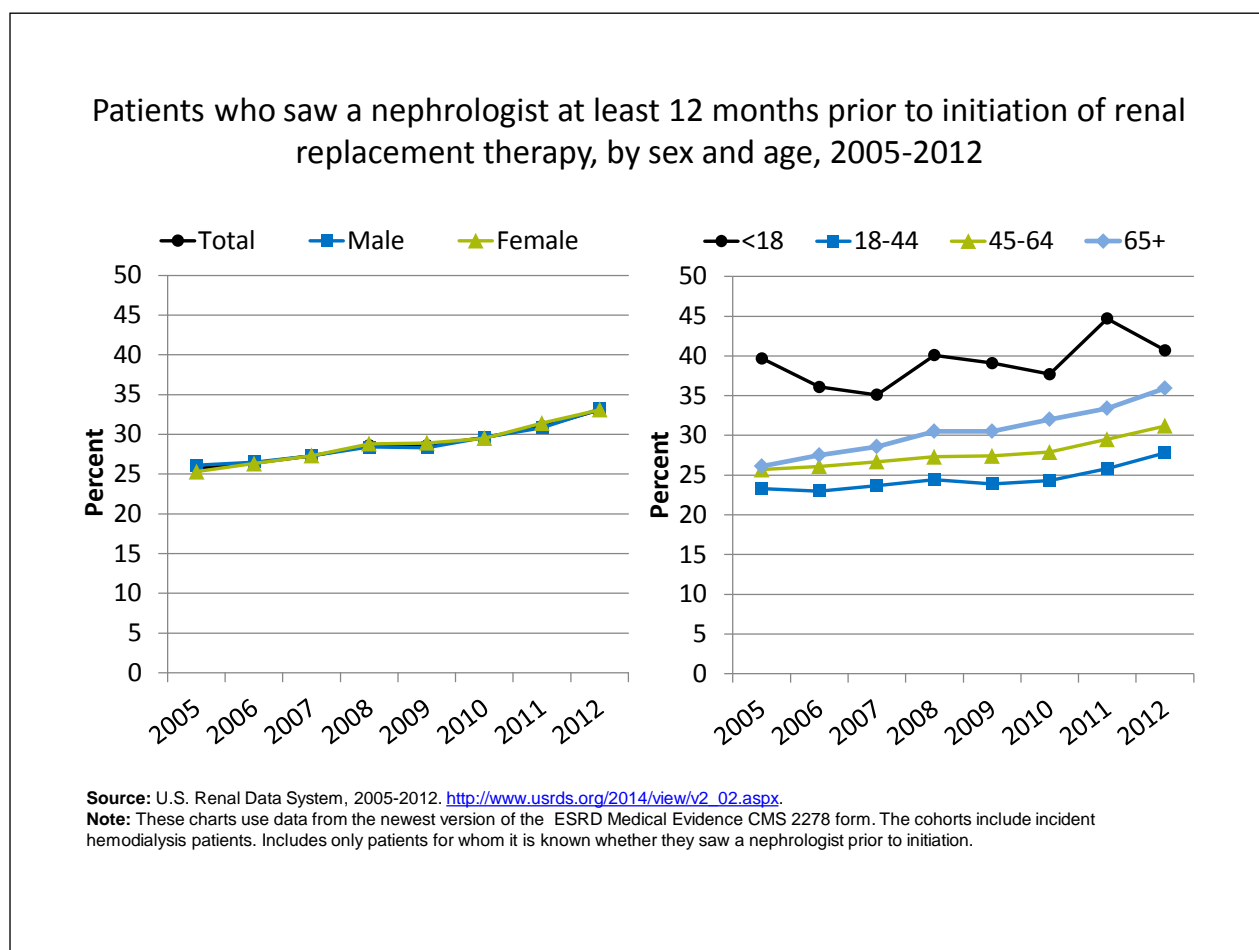
- **Importance:**

- Early referral to a nephrologist is important for patients with progressive chronic kidney disease who are approaching kidney failure.
- Patients who begin nephrology care more than a year before kidney failure are less likely to begin dialysis with a catheter, experience infections related to vascular access, or die during the months after dialysis initiation (USRDS, 2013a).

- **Groups With Disparities:**

- In all years, the percentage of new end stage renal disease (ESRD) patients who began nephrology care at least 12 months prior to initiation of renal replacement therapy was higher for non-Hispanic Whites than for Hispanics.
- From 2009 to 2012, the percentage of ESRD patients who began nephrology care at least 12 months prior to initiation of renal replacement therapy was higher for White and Asian patients than for Black, AI/AN, and NHOPI patients.

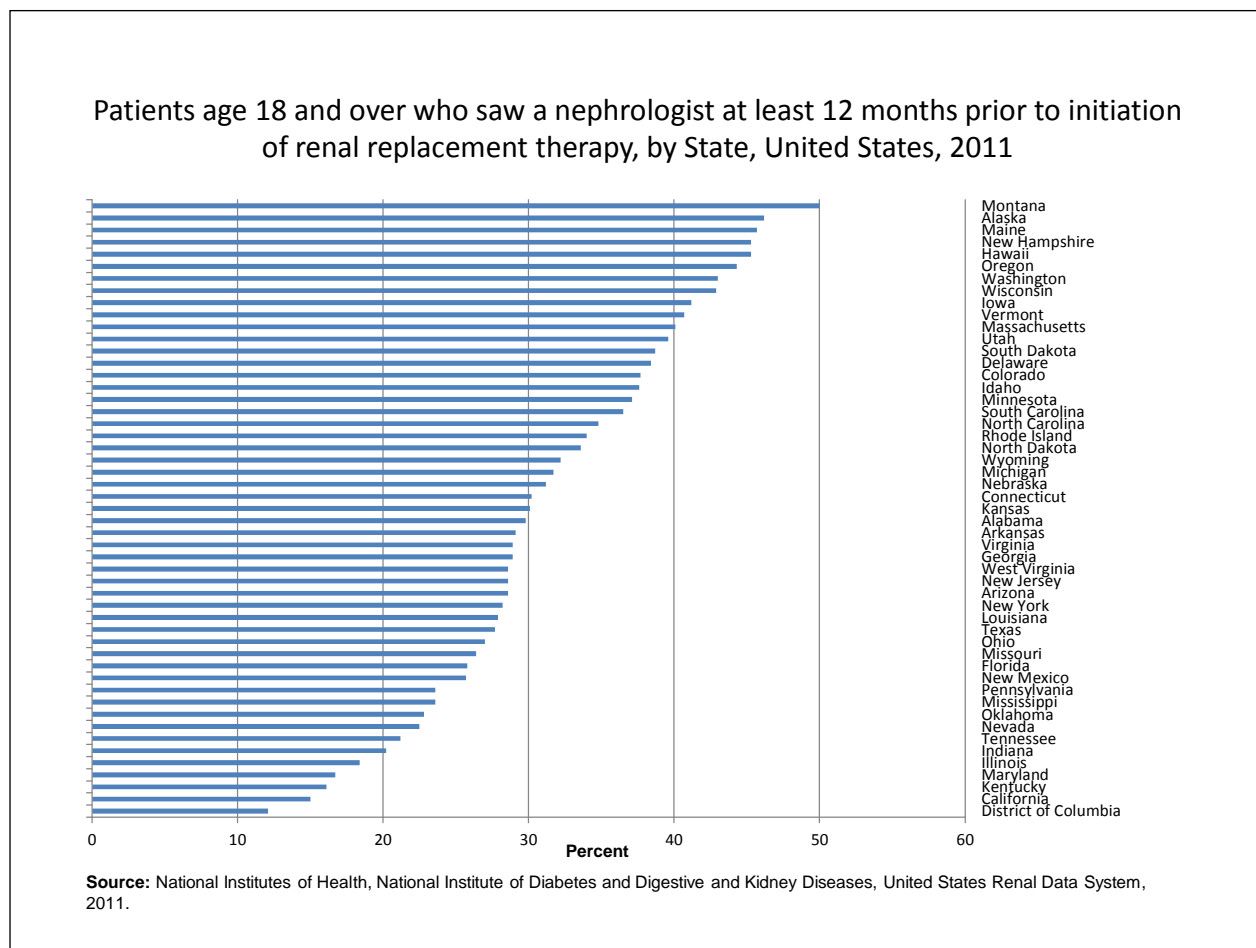
## Nephrology Care Before Kidney Failure



- **Groups With Disparities:**

- In 2012, at least 33% of both males and females began nephrology care at least 12 months prior to initiation of renal replacement therapy.
- In all years, the percentage of ESRD patients who began nephrology care at least 12 months prior to initiation of renal replacement therapy was higher for patients under age 18, ages 45-64, and age 65 and over than for patients ages 18-44.

## Nephrology Care Before Kidney Failure

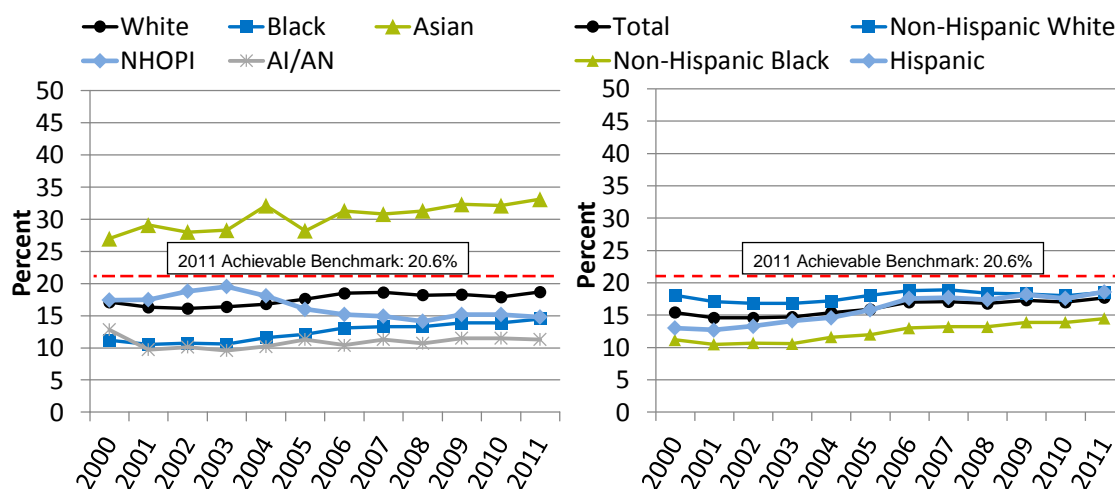


- **Geographic Variation:**

- The percentage of ESRD patients who began nephrology care at least 12 months prior to initiation of renal replacement therapy varies across U.S. States and the District of Columbia.
- The five jurisdictions with the lowest percentage of ESRD patients who began nephrology care at least 12 months prior to initiation of renal replacement therapy are the District of Columbia, California, Kentucky, Maryland, and Illinois.

## Registration for Transplantation

Dialysis patients under age 70 who were registered for transplantation within a year of ESRD initiation, by race and ethnicity, 2000-2011



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

Source: U.S. Renal Data System, 2000-2011. [http://www.usrds.org/2014/view/v2\\_02.aspx](http://www.usrds.org/2014/view/v2_02.aspx)

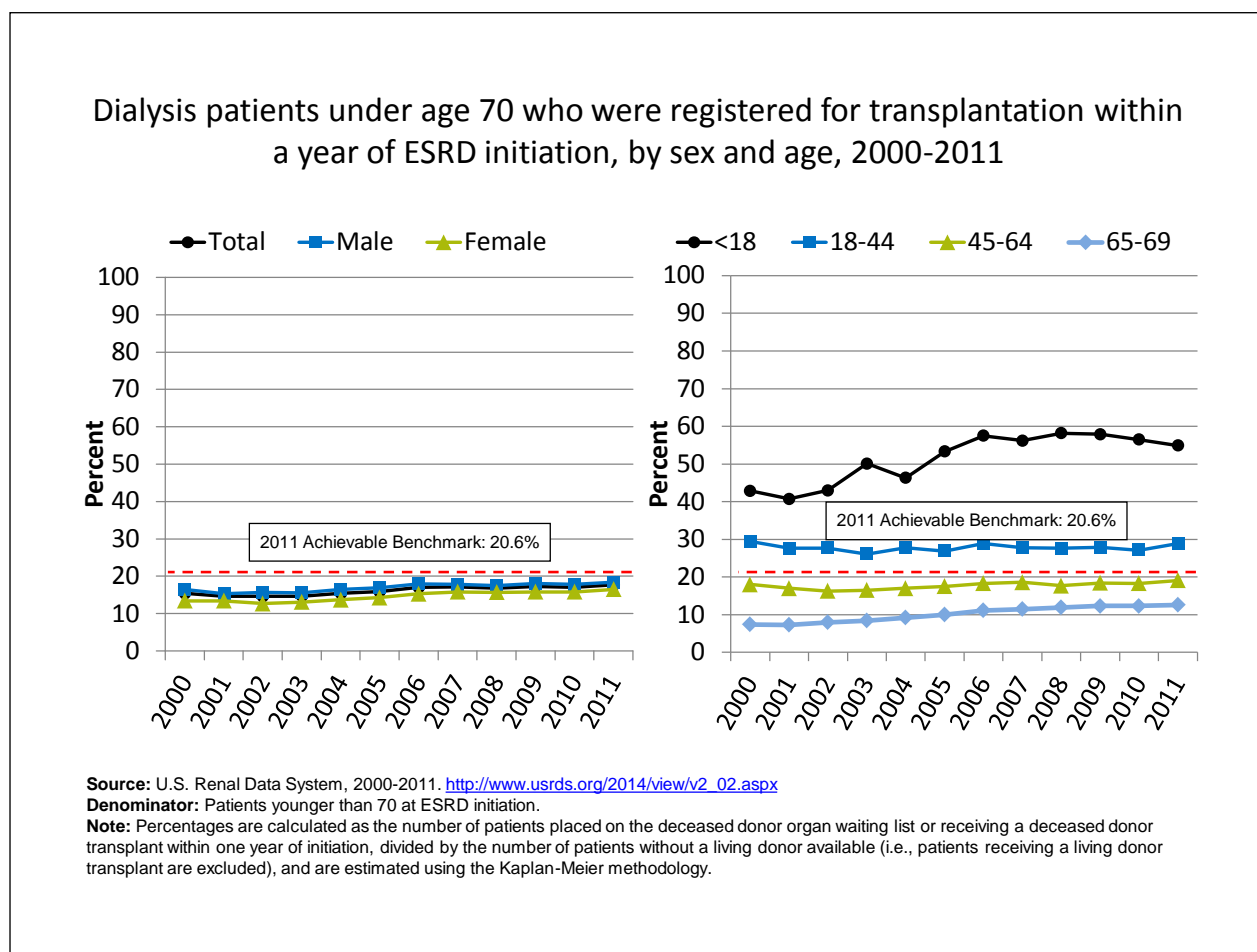
Note: Hispanic includes all races. The cohort includes patients from 2000-2011 who were younger than 70 at the initiation of ESRD. Percentages are calculated as the number of patients placed on the deceased donor organ waiting list or receiving a deceased donor transplant within 1 year of initiation, divided by the number of patients without a living donor available (i.e., patients receiving a living donor transplant are excluded), and are estimated using the Kaplan-Meier methodology.

- **Importance:** Kidney transplantation is a renal replacement therapy that replaces the failing kidney with a healthy donor kidney. ESRD patients who receive a kidney transplant have lower mortality and hospitalization rates than those on dialysis. First-year all-cause mortality rates in hemodialysis patients, for example, are nearly five times higher than rates among transplant patients (USRDS, 2013b).
- **Trends:** From 2000 to 2011, the total percentage of dialysis patients under age 70 who were registered for transplantation within 1 year of progressing to ESRD increased from 15.4% to 17.7%.
- **Groups With Disparities:**
  - From 2006 to 2011, Blacks, NHOPis, and AI/ANs were less likely than Whites to be registered for transplantation within 1 year of progressing to ESRD. However, Asians were more likely than Whites to be registered.
  - From 2000 to 2011, the percentage of dialysis patients registered for transplantation within 1 year of progressing to ESRD was lower for non-Hispanic Blacks than for non-Hispanic Whites and Hispanics.

- **Achievable Benchmark:**

- The 2011 top 5 State achievable benchmark for registration for transplantation within 1 year of progressing to ESRD was 20.6%. The top 5 States that contributed to the achievable benchmark are Colorado, Delaware, Minnesota, South Dakota, and Vermont.
- Asians have already surpassed the 2011 achievable benchmark.

## Registration for Transplantation



- **Groups With Disparities:**

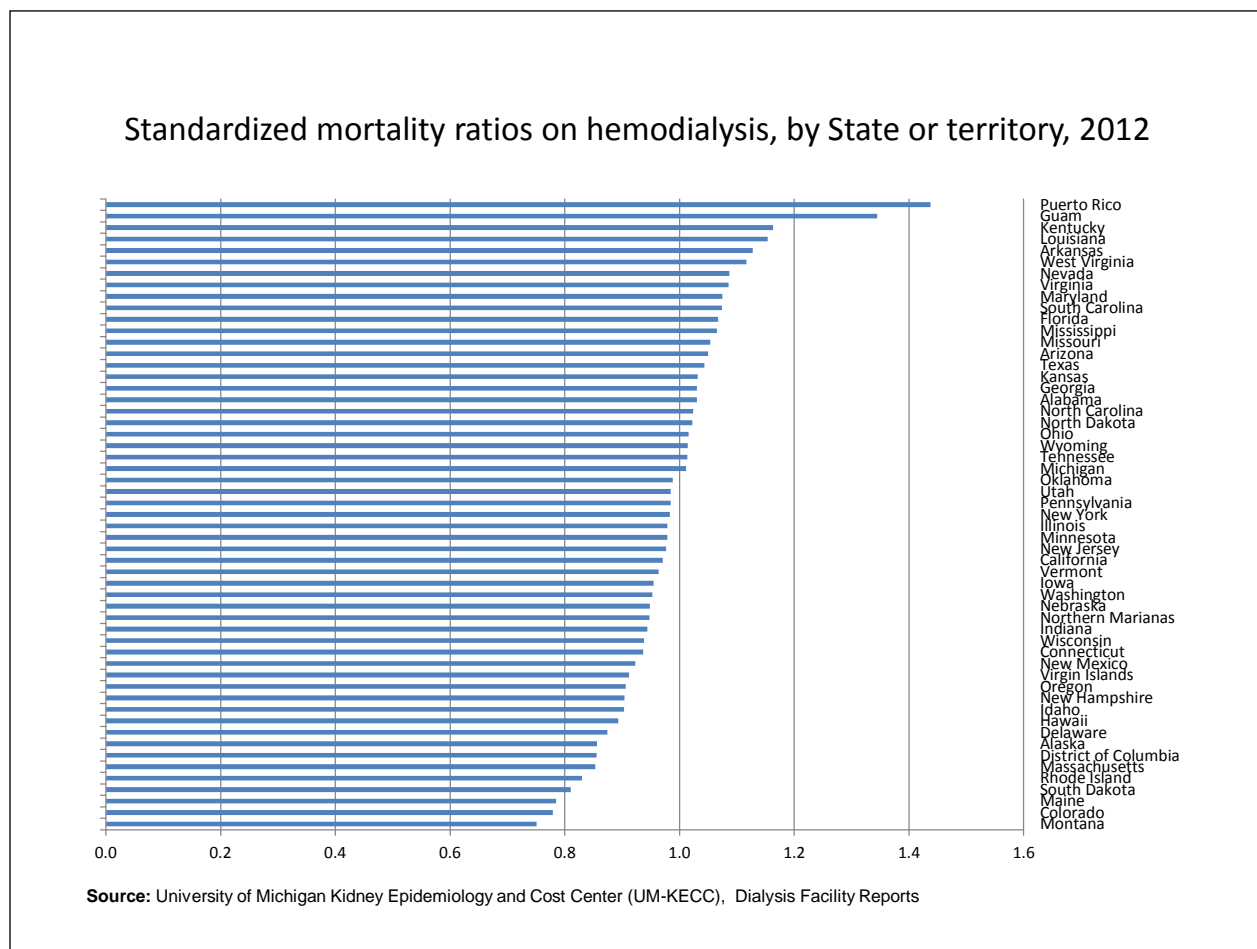
- In all years, females were less likely than males to be registered for transplantation within 1 year of progressing to ESRD.
- In all years, patients under age 18 years and ages 18-44 years were more likely than patients ages 45-64 and 65 and over to be registered for transplantation within 1 year of progressing to ESRD.



- **Achievable Benchmark:**

- The 2011 top 5 State achievable benchmark for registration for transplantation within 1 year of progressing to ESRD was 20.6%. The top 5 States that contributed to the achievable benchmark are Colorado, Delaware, Minnesota, South Dakota, and Vermont.
- Patients ages 18 and under and 18-44 have already surpassed the 2011 achievable benchmark.

## Hemodialysis Death Rate



- **Importance:**

- Hemodialysis patient mortality varies across dialysis facilities and, correspondingly, across States.
- The standardized mortality ratio (SMR) is designed to summarize the observed death rate at a facility relative to the death rate that was expected based on national death rates during that year for patients with the same characteristics as those in a given facility.

- **Geographic Variation:**

- SMRs vary across U.S. States and territories, from a low in Montana to a high in Puerto Rico.
- Montana's SMR of 0.75 indicates facility death rates that are typically 25% below the national death rate.
- Puerto Rico's SMR of 1.44 indicates facility death rates that are 44% above the national death rate.

## References

U.S. Renal Data System. USRDS 2013 annual data report: atlas of chronic kidney disease and end-stage renal disease in the United States. Bethesda, MD: National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases; 2013a. Available at: <http://www.usrds.org/atlas.aspx>. Accessed July 8, 2015.

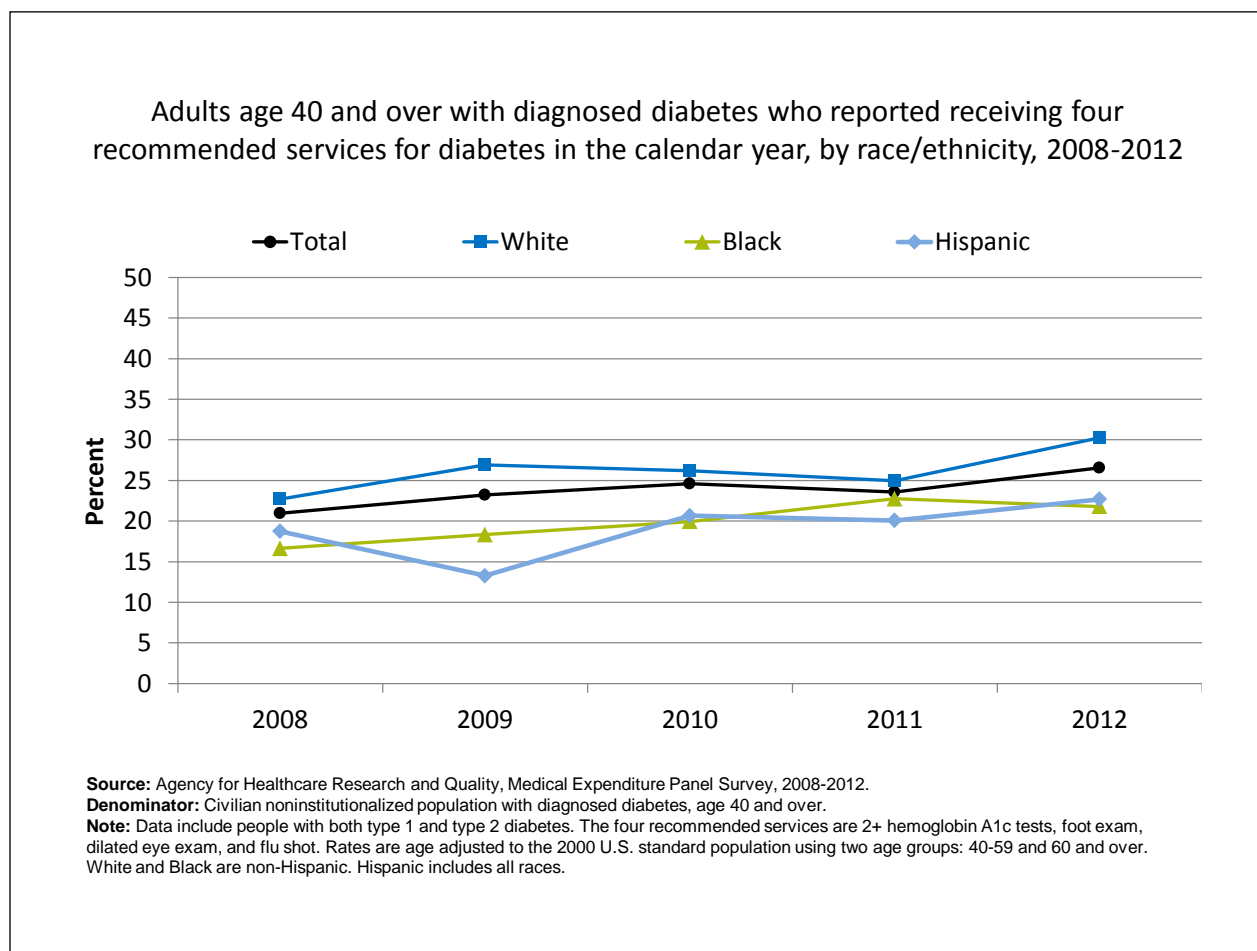
U.S. Renal Data System. USRDS 2013 annual data report reference tables. Bethesda, MD: National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases; 2013b. Available at <http://www.usrds.org/atlas13.aspx>. Accessed July 8, 2015.

## Diabetes

### Measures of Effective Treatment of Diabetes

- Process:
  - Receipt of four recommended diabetes services
  - People with current diabetes who have a written diabetes management plan
- Outcome:
  - Adults age 40 and over with diagnosed diabetes with hemoglobin A1c and blood pressure under control
  - Hospital admissions for uncontrolled diabetes
  - New cases of end stage renal disease due to diabetes

### Receipt of Recommended Diabetes Services



- **Importance:**

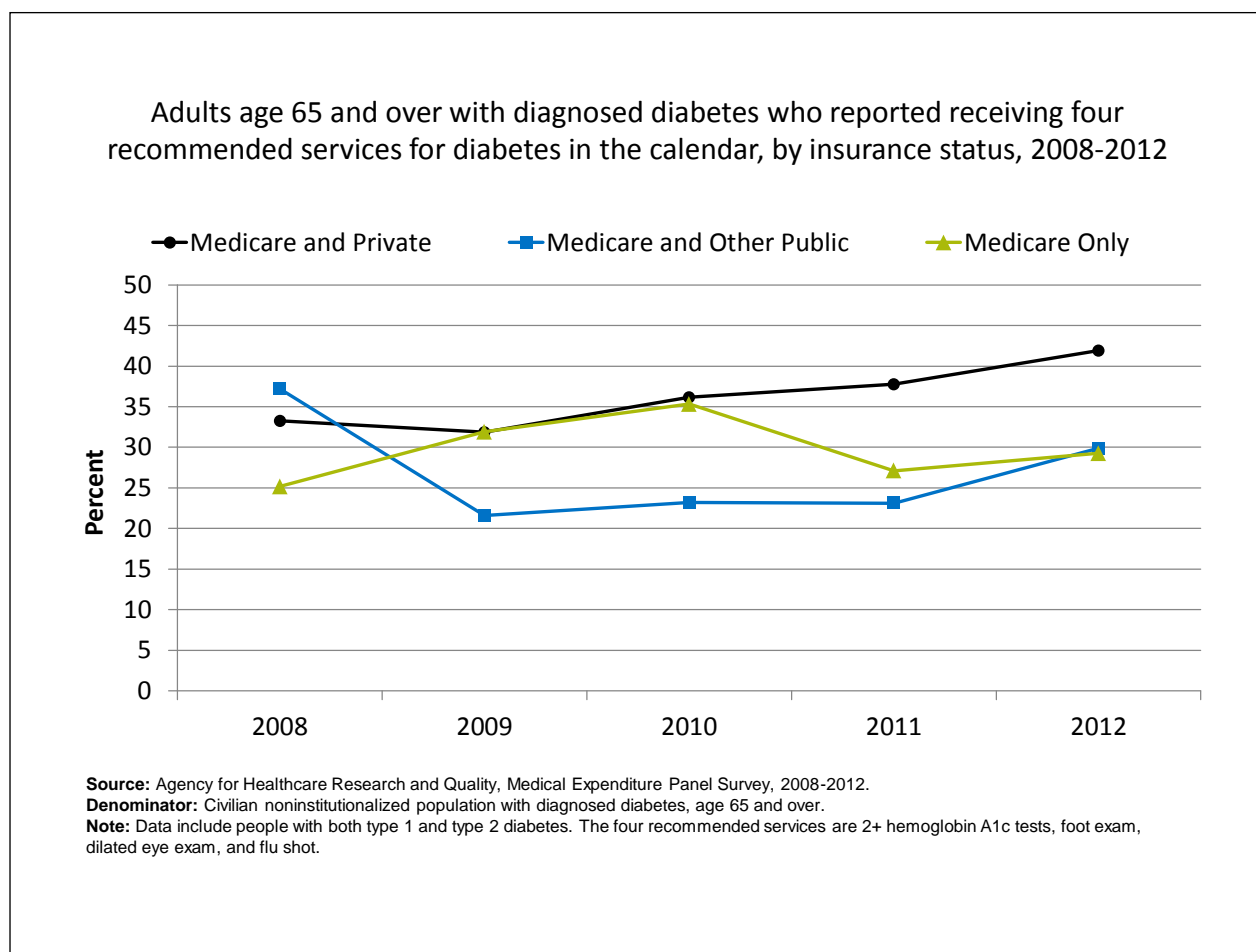
- Regular hemoglobin A1c (HbA1c) tests, foot exams, dilated eye exams, and flu shots help people keep their diabetes under control and avoid diabetic complications.
- A composite measure is used to track the national rate of receipt of all four of these recommended annual diabetes interventions.

- **Trends:**

- From 2008 to 2012, among adults age 40 and over with diagnosed diabetes, improvements were observed overall and among Blacks.
- However, only slightly more than one-fourth (26.6 percent) of adults with diabetes reported receiving all four recommended services in 2012.

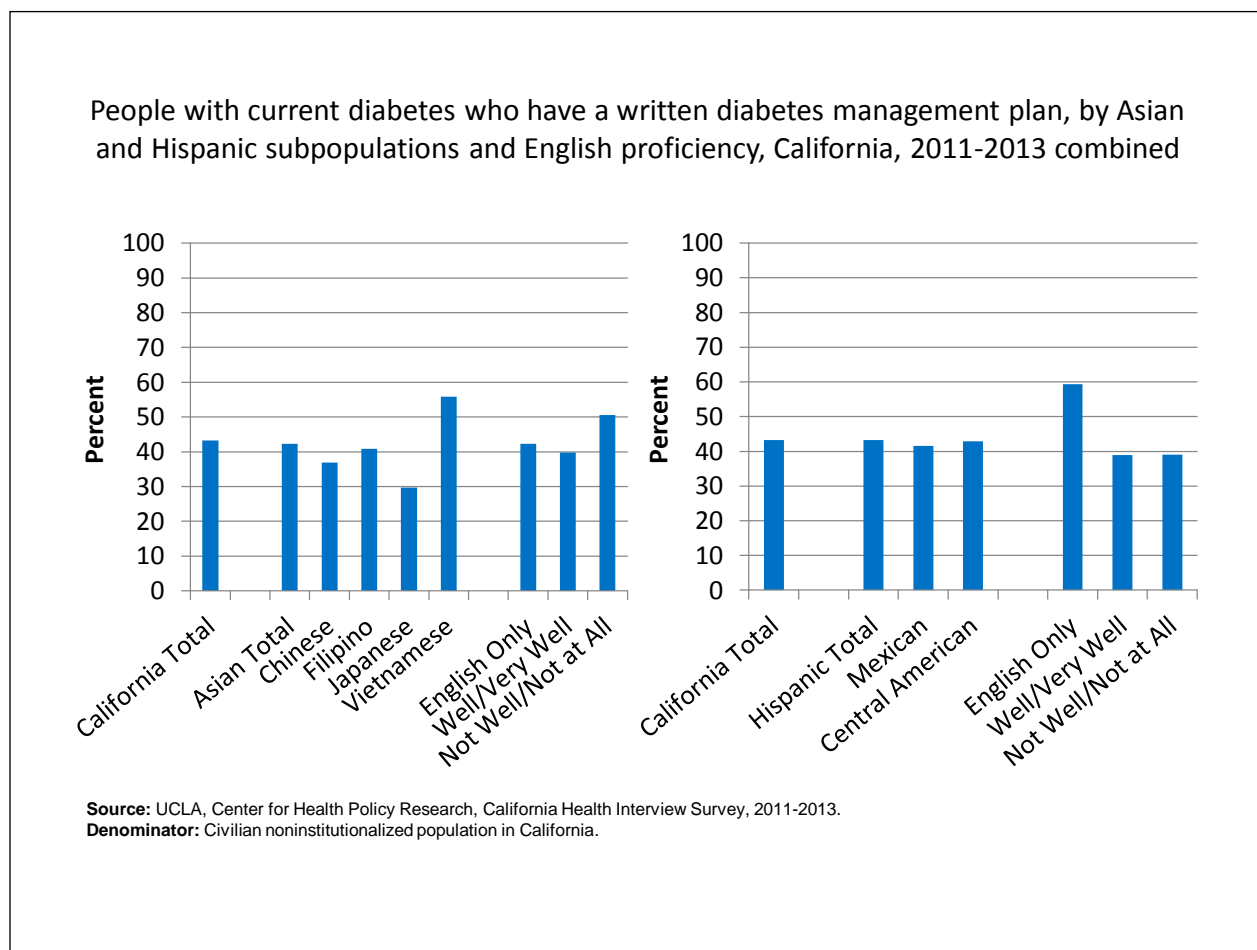
- **Groups With Disparities:** In 2 of 5 years, including 2012, Hispanics and Blacks were less likely than Whites to receive the recommended services.

### Process: Receipt of Recommended Diabetes Services



- **Importance:** Diabetes prevalence increases with age.
- **Trends:** From 2008 to 2012, improvements were observed for adults with Medicare and private insurance.
- **Groups With Disparities:** In 2012, among adults age 65 and over, those with Medicare only or Medicare and other public insurance were less likely than those with Medicare and private insurance to receive all four recommended services.

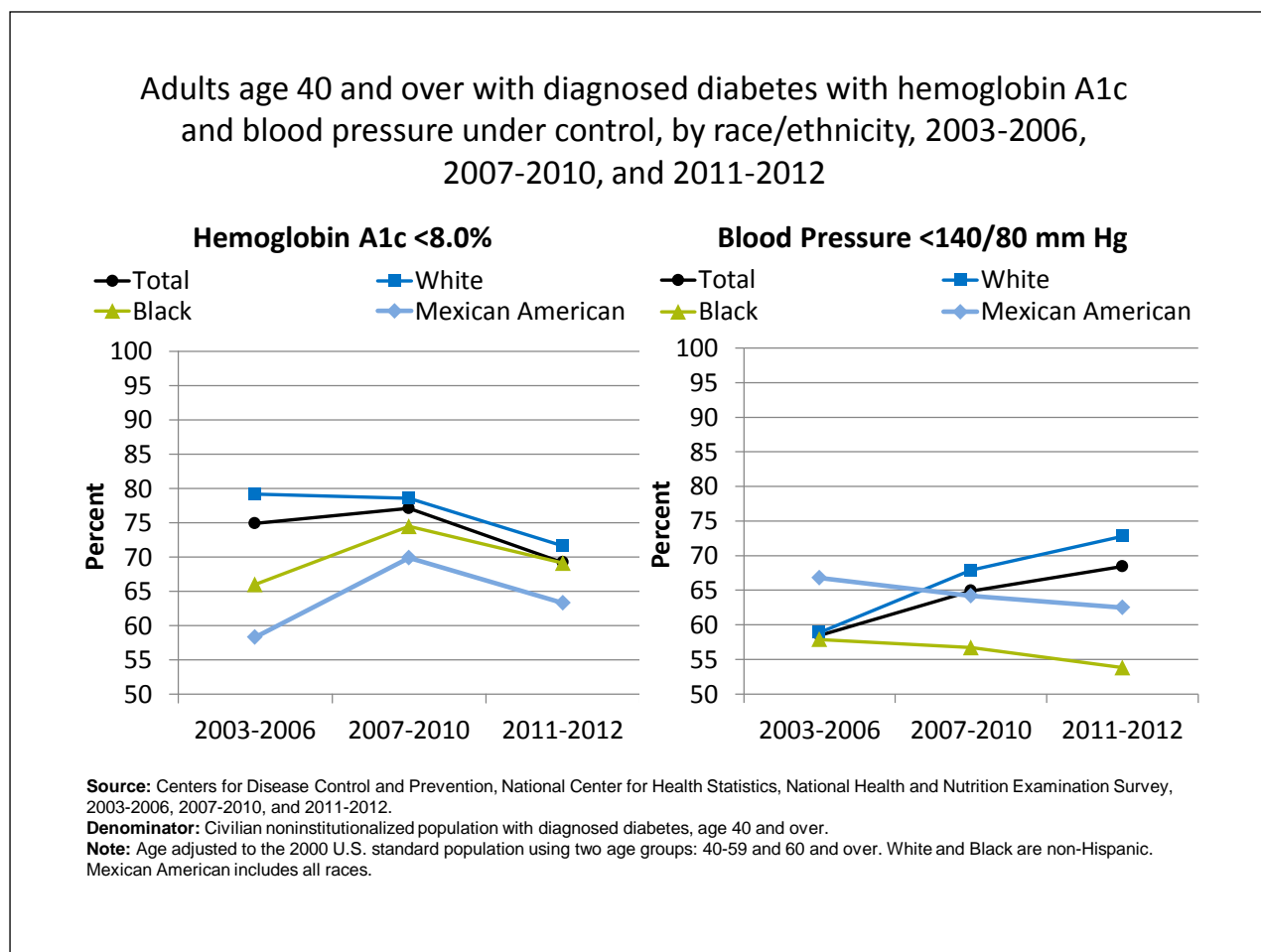
## Written Diabetes Management Plan



- **Importance:**
  - A successful partnership for diabetes care requires providers to educate patients about daily management of their diabetes. Hence, providers should develop a written diabetes management plan, especially for patients with a history of uncontrolled diabetes.
  - National data on diabetes management and outcomes for some underserved populations are not available from the national data sources in the QDR. These populations include people with limited English proficiency; individuals who speak a language other than English at home; lesbian, gay, bisexual, and transgender individuals; and Asian and Hispanic subpopulations. To address some of these data gaps, we show additional data from the California Health Interview Survey.

- **Overall Rate:** Only 43% of Californians with current diabetes had a written diabetes management plan in 2011-2013.
- **Groups With Disparities:**
  - Among Asian Californians with diabetes, the percentage who had a written diabetes management plan ranged from 29.7% for Japanese to 55.9% for Vietnamese.
  - Among Hispanic Californians with diabetes, those who spoke English well/very well and not well/not at all were less likely than those who spoke English only to have a written diabetes management plan.

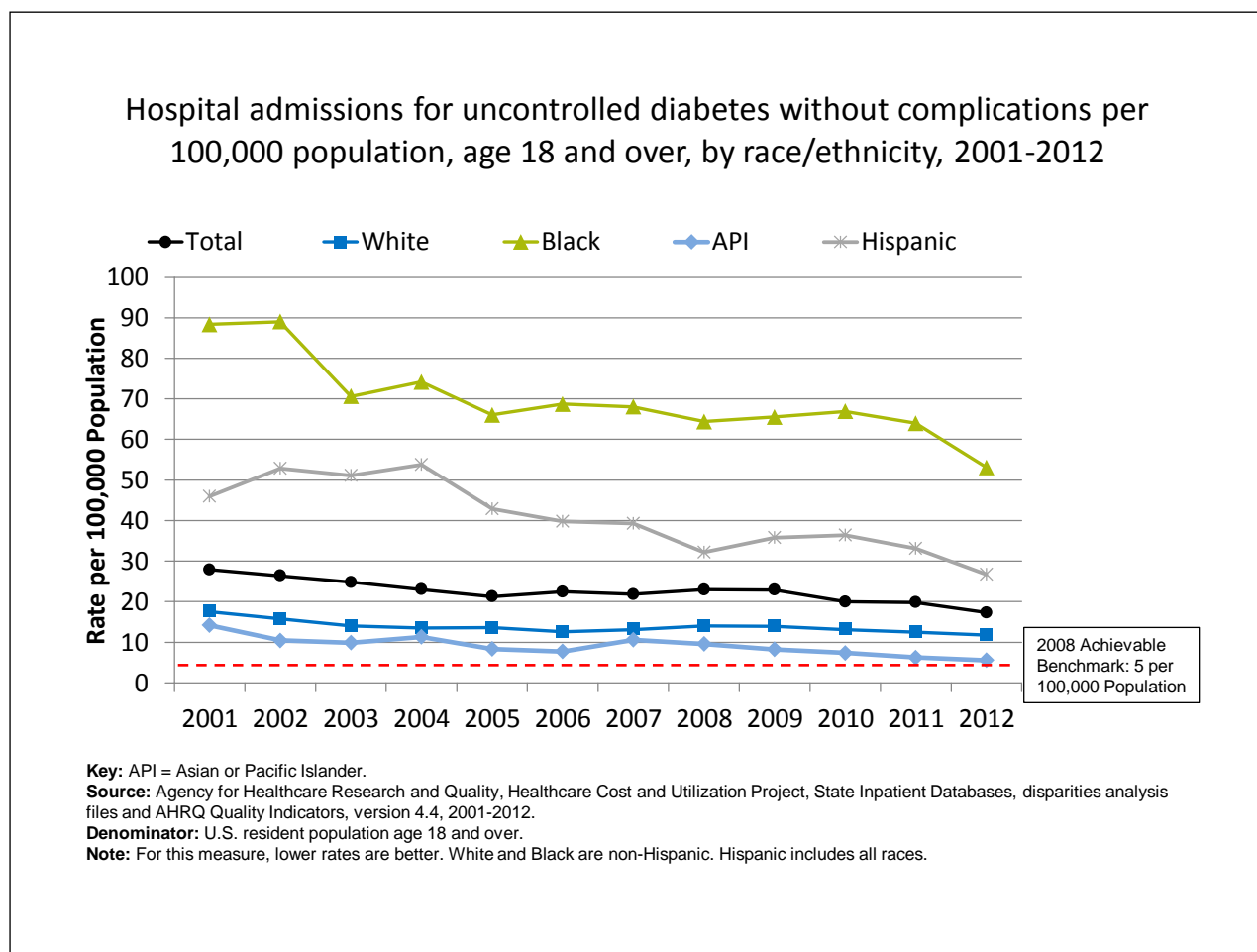
## Control of Hemoglobin A1c and Blood Pressure



- **Importance:** People diagnosed with diabetes are often at higher risk for other cardiovascular risk factors, such as high blood pressure. Having these conditions in combination with diagnosed diabetes increases the likelihood of complications, such as heart and kidney diseases, blindness, nerve damage, and stroke. Patients who manage their diagnosed diabetes and maintain an HbA1c level <8% and blood pressure <140/80 mm Hg can decrease these risks.

- **Overall Rate:** Among adults age 40 and over with diagnosed diabetes, 69.2% achieved HbA1c less than 8% and 68.5% achieved blood pressure less than 140/80 mm Hg in 2011-2012.
- **Groups With Disparities:**
  - In 2003-2006, Blacks and Mexican Americans were less likely than Whites to have their HbA1c under control. Differences in 2007-2010 and 2011-2012 were not statistically significant.
  - In 2007-2010 and 2011-2012, Blacks were less likely than Whites to have their blood pressure under control.

### 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 the recommended diet and medication.

- **Trends:**

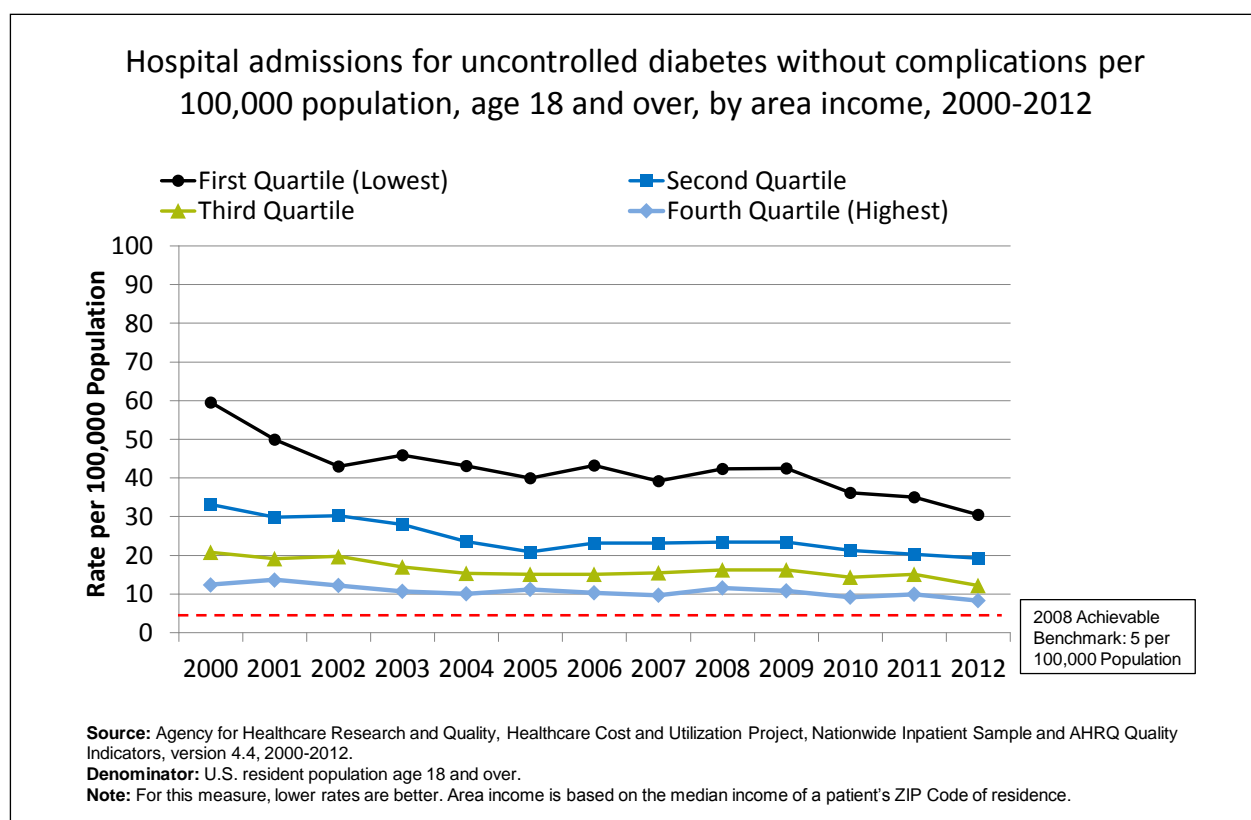
- The rate of hospital admissions for uncontrolled diabetes without complications per 100,000 population decreased from 27.9% in 2001 to 17.3% in 2012.
- From 2001 to 2012, the percentage of hospital admissions decreased for all populations:
  - ◆ For Hispanics, from 46.0% to 26.7%.
  - ◆ For APIs, from 14.2% to 5.5%.
  - ◆ For Blacks, from 88.3% to 53.1%.
  - ◆ For Whites, from 17.6% to 11.7%.

- **Groups With Disparities:** In all years, the rate of hospital admissions for uncontrolled diabetes was higher for Blacks and Hispanics and lower for APIs compared with Whites.

- **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 are Colorado, Hawaii, Utah, and Vermont.
- At the current rate, the benchmark could not be met for the total population for approximately 17 years.
- At the current rates, Whites could not reach the benchmark for 22 years and Blacks would need 20 years. APIs could reach the benchmark in 2 years and Hispanics in 10 years.

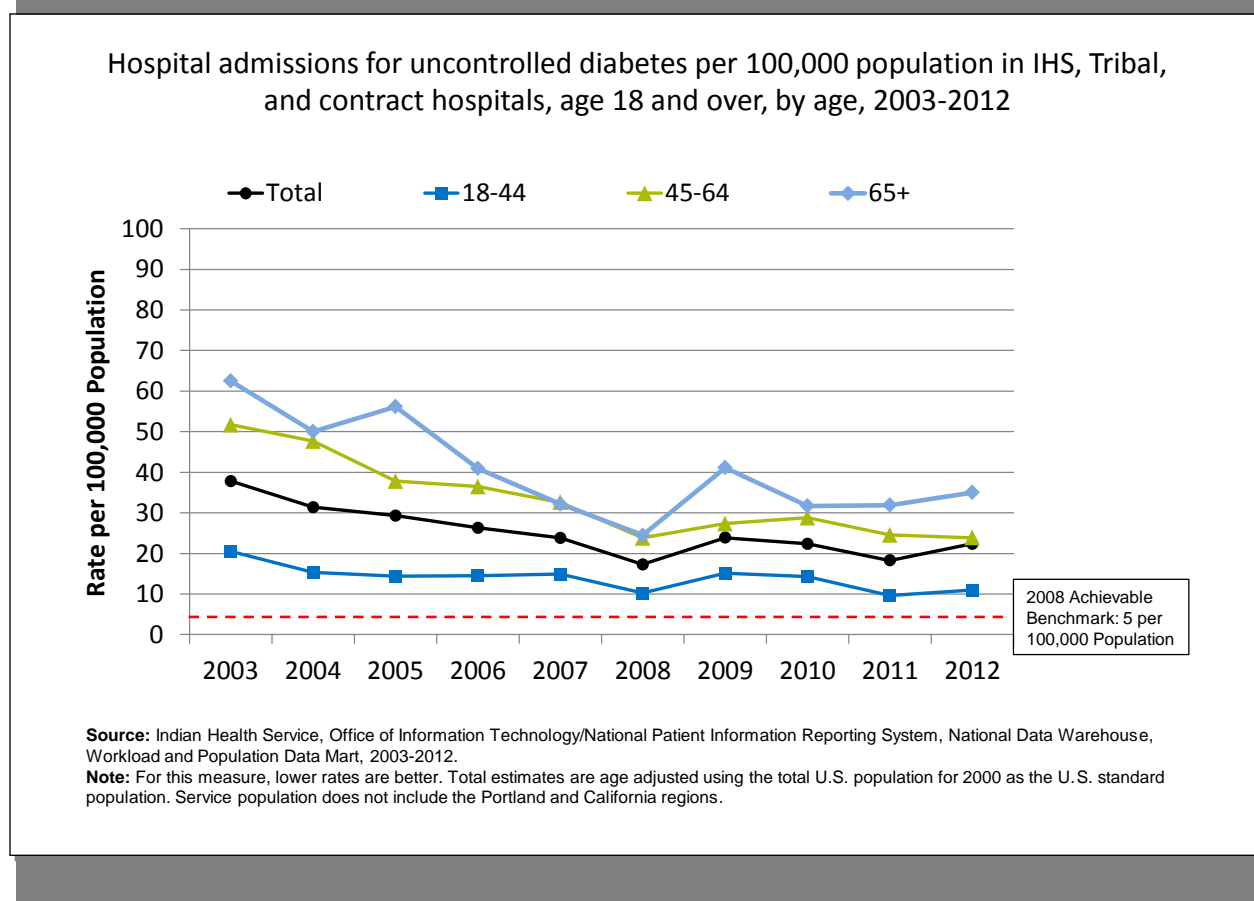
## Hospital Admissions for Uncontrolled Diabetes





- **Importance:** Low-income neighborhoods may have insufficient health resources to meet the needs of all people with diabetes.
- **Trends:** The rates for all area income populations are improving.
- **Groups With Disparities:**
  - In all years, the rate of hospital admissions for uncontrolled diabetes was higher for adults living in communities with median household incomes in the first (lowest), second, and third quartiles than for people living in communities in the fourth quartile (highest).
  - The difference in rates for adults in the highest quartile and the lowest quartile is narrowing.
- **Achievable Benchmarks:** At the current rates of improvement:
  - Adults living in communities in the first quartile could achieve the benchmark in less than 9 years.
  - Adults living in communities in the second quartile could achieve the benchmark in approximately 15 years.
  - Adults living in communities in the third quartile could achieve the benchmark in approximately 15 years.
  - Adults living in communities in the fourth quartile could achieve the benchmark in less than 14 years.

#### Outcome: Hospital Admissions for Uncontrolled Diabetes

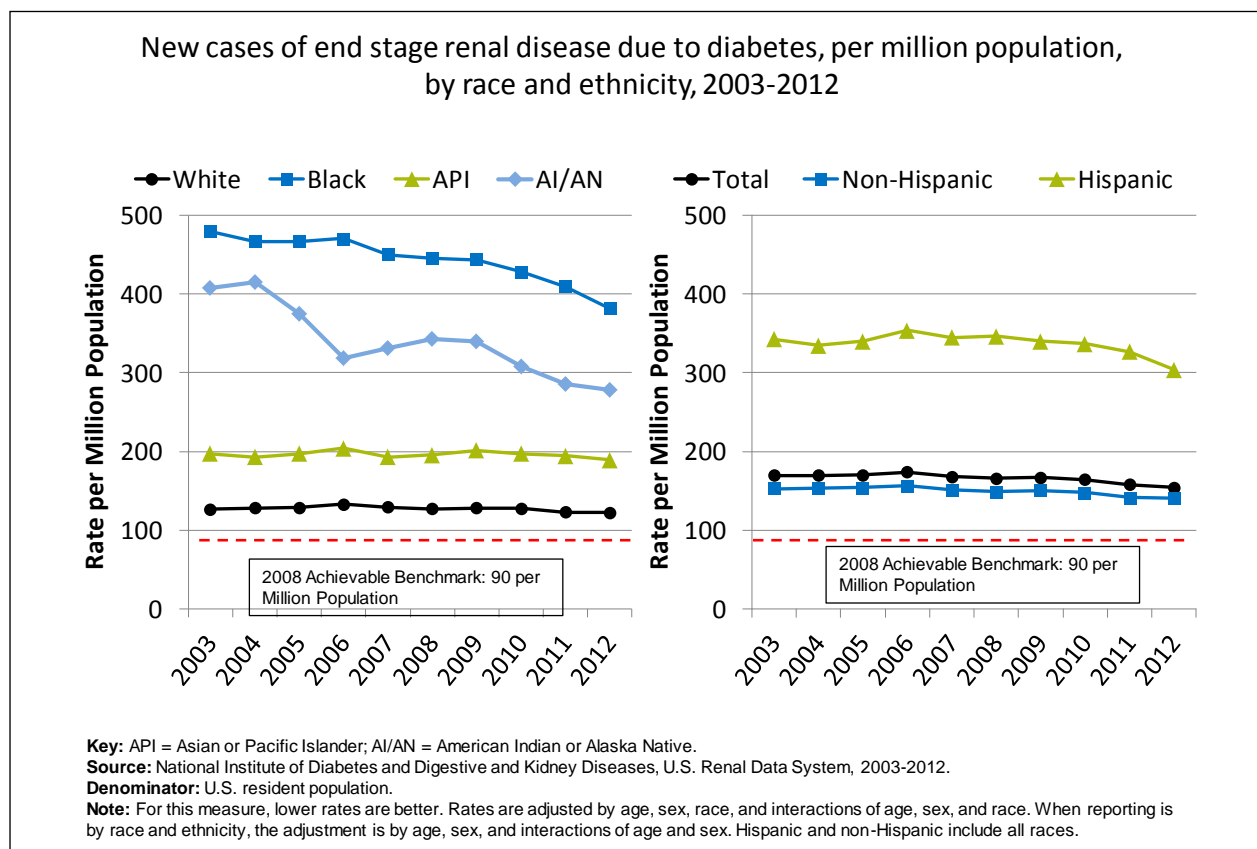


- **Importance:**

- Diabetes is one of the leading causes of morbidity and mortality among AI/AN populations. Its prevention and control are a major focus of the Indian Health Service (IHS) Director's Chronic Disease Initiative and the IHS Health Promotion/Disease Prevention Initiative. Addressing barriers to health care is a large part of the overall IHS goal of ensuring that comprehensive, culturally acceptable personal and public health services are available and accessible to AI/ANs.
- AI/ANs who are members of federally recognized Tribes are eligible for services provided by IHS. About 2 million AI/ANs in the United States receive care directly from IHS, through tribally contracted and operated health programs or through services purchased by IHS from other providers. Due to low numbers and lack of data, information about AI/AN hospitalizations is difficult to obtain in most Federal and State hospital utilization data sources. The QDR addresses this gap by examining utilization data from IHS, Tribal, and contract hospitals.

- **Trends:** From 2003 to 2012, the age-adjusted rate of hospitalizations for uncontrolled diabetes in IHS, Tribal, and contract hospitals decreased overall and among all age groups.
- **Groups With Disparities:** In all years, patients ages 18-44 had lower rates than patients age 65 and over.
- **Achievable Benchmarks:** At the current rates, the benchmark could be met by the total IHS population in 10 years.

### Outcome: End Stage Renal Disease Due to Diabetes



- **Importance:** Diabetes is the most common cause of kidney failure. Keeping blood glucose levels under control can prevent or slow the progression of kidney disease. When kidney disease is detected early, medication can slow the disease's progress; when detected late, it commonly progresses to end stage renal disease requiring dialysis or kidney transplantation. While some cases of kidney failure due to diabetes cannot be avoided, other cases reflect inadequate control of blood glucose or delayed detection and treatment of early kidney disease due to diabetes.
- **Trends:** From 2003 to 2012, the overall rate of new cases of ESRD due to diabetes improved for Hispanics, Blacks, and AI/ANs.
- **Groups With Disparities:** In all years, AI/ANs, APIs, and Blacks had higher rates than Whites, and Hispanics had higher rates than non-Hispanics.
- **Achievable Benchmark:**
  - The 2008 top 5 State achievable benchmark was 90 per million population. The top 5 States that contributed to the achievable benchmark are Alaska, Maine, New Hampshire, Rhode Island, and Vermont.
  - At current rates of change, the benchmark would not be achieved overall or by any racial or ethnic group for decades.

## National Quality Strategy Priorities in Action: Effective Treatment of Diabetes

- [Priorities in Action](#) features some of our Nation's most promising and transformative quality improvement programs.
- The [Wind River Reservation](#) in the heart of the Northern Plains in southwestern Wyoming is the home of the Eastern Shoshone and Northern Arapaho Tribes.
- About 12,500 residents live on the reservation; 12 percent have diabetes and 71 percent are clinically obese.
- In 2009, the Eastern Shoshone Tribal Health Department, in partnership with the Northern Arapaho Tribe, Indian Health Service, and Sundance Research Institute, was awarded a 5-year grant to create a community-clinical partnership on the reservation to:
  - Address barriers to diabetes management and prevention, and
  - Create a comprehensive system of care to provide education and support services to help tribal members with or at risk of diabetes manage their condition and improve outcomes.

## HIV and AIDS

### Overview

- HIV is a virus that kills or damages cells of the body's immune system.
- AIDS is the most advanced stage of HIV infection.
- HIV can be spread through:
  - Any unprotected sex with an infected person,
  - Sharing of drug needles, or
  - Contact with the blood of an infected person.
- Women with HIV can pass the virus to their babies during pregnancy, childbirth, or breastfeeding.

### Impact of HIV and AIDS

- The impact of HIV infection and AIDS is disproportionately higher for:
  - Racial and ethnic minorities,
  - People of lower income or education levels, and
  - Other vulnerable populations with high-risk behaviors, such as transgender people.
- Although access to care has improved, several groups of people with HIV remain less likely to have access to care and less likely to have optimal patterns of care:
  - Blacks and Hispanics,
  - Women,
  - Injection drug users,
  - Homeless people, and
  - Uninsured people (Moore, 2011).

### Prevalence and Incidence of HIV Infection

- The Centers for Disease Control and Prevention (2015c) estimates that:
  - More than 1.2 million people age 13 years and over are living with HIV infection.
  - About 12.8% of people with HIV are unaware of their infection.
  - The number of people living with HIV has increased, while the number of new infections has remained fairly stable, at about 50,000 per year.
  - The rate of new infections is high among certain groups, such as men who have sex with men (MSM).

### Diagnoses of HIV Infection by Race/Ethnicity

- In 2013, the total number of diagnoses of HIV infection in the United States was 47,352 (CDC, 2015d).

- The 2013 rate of diagnosis of HIV infection<sup>i</sup> per 100,000 population<sup>ii</sup> follows (CDC, 2015d):
  - Whites, 6.6.
  - Blacks, 55.9, approximately 8 times the rate of Whites.
  - Hispanics, 18.7, approximately 3 times the rate of Whites.
  - Multiple-race individuals, 16.8, approximately 2.5 times the rate of Whites.
  - Native Hawaiians and Other Pacific Islanders (NHOPIs), 12.7, approximately twice the rate of Whites.
  - American Indians and Alaska Natives (AI/ANs), 9.4.
  - Asians, 6 per 100,000.

## Diagnoses of HIV Infection by Transmission Category

- In 2013, HIV infections among adolescents and adults in the United States were attributed to the following (CDC, 2015d):
  - Male-to-male sexual contact, 65%
  - Heterosexual contact,<sup>iii</sup> females, 17%
  - Heterosexual contact, males, 8%
  - Injection drug use, males, 4%
  - Injection drug use, females, 2%
  - Male-to-male sexual contact and injection drug use, 3%
  - Other transmissions,<sup>iv</sup> <1%

## HIV and AIDS Among MSM

- In 2013, in the United States, gay and bisexual men accounted for 81% (30,689) of the 37,887 estimated HIV diagnoses among all males age 13 years and over and 55% of the estimated number of people diagnosed with AIDS among all adults and adolescents in the United States (CDC, 2015a).
- Of the estimated 14,611 gay and bisexual men diagnosed with AIDS, 40% were Black, 32% were White, and 23% were Hispanic (CDC, 2015a).
- MSM represent only 2% of the U.S. population but:
  - Is the only risk group in which new HIV infections have been gradually increasing since the 1990s and
  - Have constantly represented the largest percentage of people diagnosed with AIDS and people with an AIDS diagnosis who have died (CDC, 2015a).

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<sup>i</sup> Data include people with a diagnosis of HIV infection regardless of stage of disease at diagnosis.

<sup>ii</sup> All displayed data are estimates. Estimated numbers resulted from statistical adjustment that accounted for reporting delays and missing transmission category, but not for incomplete reporting.

<sup>iii</sup> Heterosexual contact is with a person known to have, or to be at high risk for, HIV infection.

<sup>iv</sup> Other transmission categories include hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified.

- In 2011, in the United States, among MSM with diagnosed HIV infection:
  - 80.6% were linked to care,
  - 57.5% were retained in care,
  - 52.9% were prescribed antiretroviral therapy (ART), and
  - 44.6% had achieved viral suppression (CDC, 2015a).

## HIV and AIDS Among Transgender People

- Transgender people have been significantly affected by the HIV/AIDS epidemic in the United States.
- Transgender women have the highest risk of HIV infection.
  - HIV prevalence in transgender women is an estimated 21.7% (Baral, et al., 2013).
  - Among male-to-female (MTF) people, 27.7% tested positive for HIV infection, but 11.8% self-reported being HIV positive (CDC, 2015b).
  - Higher HIV rates (56.3% for test results and 30.8% for self-reporting) were found among MTF Blacks (Herbst, et al., 2008).
  - By race/ethnicity, Black transgender women have the highest percentage of new HIV-positive test results.
- Transgender people often engage in behaviors that increase the risk of HIV infection, such as:
  - Multiple sex partners or unprotected sex,
  - Commercial sex work, and
  - Use of needle injections for recreational drugs or to alter gender (e.g., hormones, silicone) (Herbst, et al., 2007; Stephens, et al., 2011).
- Limited data make creating evidence-based HIV prevention interventions that meet the unique needs of transgender populations challenging, so it is imperative to collect data on transgender people.

## HIV and AIDS Among People Who Inject Drugs

- Injection drug use leads to approximately 10% of HIV cases in the United States annually (AIDS.gov, 2014).
- Injection drug users can get and spread HIV by:
  - Sharing drug preparation or injecting equipment with a person who has HIV.
  - Engaging in risky sexual behaviors with their sex and drug-using partners.
- About 80% of HIV-infected injection drug users in the United States also have hepatitis C (HCV) (AIDS.gov, 2014):
  - HCV leads to cirrhosis of the liver and liver cancer.
  - HCV is more serious in people living with HIV because it leads to liver damage more quickly.

- Co-infection with HCV also affects treatment of HIV infection, making it important for people who inject drugs to know if they are infected with HCV and to continue to protect themselves.

## HIV and AIDS Policy

- The White House Office of National AIDS Policy launched the National HIV/AIDS Strategy in July 2010 (ONAP, 2010):
  - Comprehensive plan focused on (1) reducing the number of people who become infected with HIV, (2) increasing access to care and optimizing health outcomes for people living with HIV, and (3) reducing HIV-related health disparities.
  - Roadmap for policymakers, partners in prevention, and the public.
- In 2013, the President launched the HIV Care Continuum Initiative, which outlines strategies to optimize health outcomes for those living with HIV.
- In 2014, funding through the HHS Secretary's Minority AIDS Initiative Fund and the Affordable Care Act helped strengthen the capacity of community health centers to identify and treat HIV.
- The Affordable Care Act provides better access to health care coverage and more health insurance options for people living with HIV (AIDS.gov, 2014).

## HIV and AIDS Measures

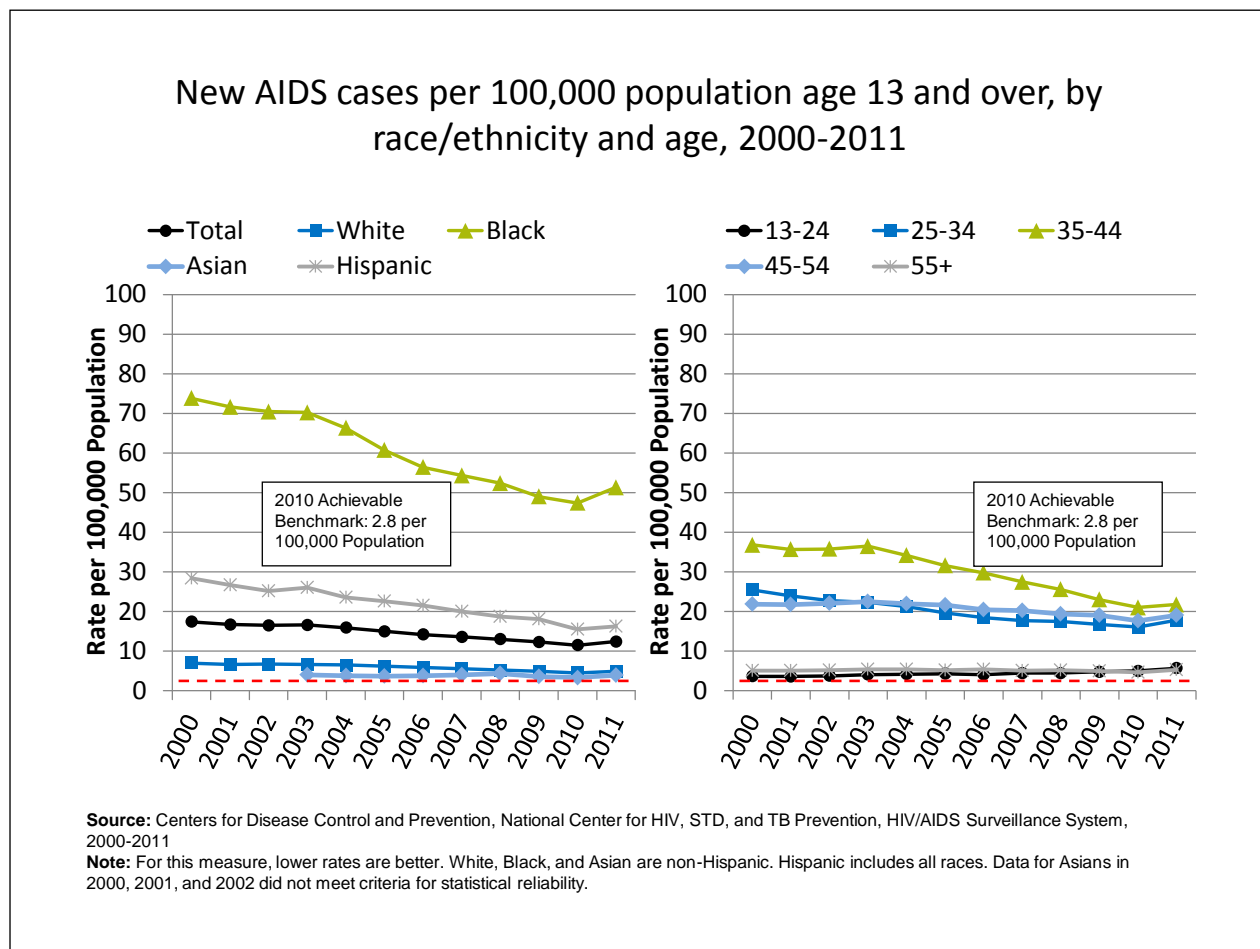
- Outcome: New AIDS cases
- Process: Adult HIV patients who had at least two outpatient visits during the year
- Outcome: Adult HIV patients with a viral load less than 200 copies/mL
- Outcome: HIV infection deaths
- Two measures from the Ryan White HIV/AIDS Program:
  - Outcome: HIV patients in Ryan White-funded care who were virally suppressed (HIV RNA <200 copies/mL)
  - Process: HIV patients in Ryan White-funded care who were retained in care (at least two ambulatory visit dates 90 days apart)
- One measure is not included in the 2014 reports due to statistical issues:
  - Adult HIV patients who received antiretroviral therapy
- One measure reached the 95% ceiling and is no longer reported<sup>v</sup>:
  - Eligible patients receiving prophylaxis for *Pneumocystis pneumonia*

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<sup>v</sup> Measures that reach performance levels of 95% are no longer reported. Data on these measures will continue to be collected and these measures will be added back to the reports if their performance falls below 95%.

- Two measures were removed due to changes in HIV care guidelines (<http://aidsinfo.nih.gov/guidelines>):
  - Adult HIV patients who received two or more CD4 tests during the year<sup>vi</sup>
  - Eligible patients receiving prophylaxis for *Mycobacterium avium* complex<sup>vii</sup>

## New AIDS Cases



<sup>vi</sup> The treatment guideline for clinical practice in the past was generally to monitor both CD4 T lymphocyte (CD4) cell count and HIV RNA (viral load) concurrently, as markers of the response to ART and HIV disease progression. However, a new recommendation requires the initiation of ART for all HIV-infected individuals regardless of their viral load or CD4 count, weakening the rationale for frequent CD4 monitoring. When a patient is on ART, CD4 count is not useful as it will not guide changes in treatment, according to the U.S. treatment guidelines (Panel on Antiretroviral Guidelines for Adults and Adolescents, 2015). In addition, reducing the frequency of routine CD4 testing in patients who are virally suppressed can save an estimated \$18 million annually, which can be redirected to other HIV care services (Hyle, et al., 2014).

<sup>vii</sup> Prophylaxis for *Mycobacterium avium* complex (MAC) is not required among patients receiving ART who are virally suppressed. Studies show that eliminating MAC prophylaxis could reduce pill burden and the risk of drug-drug interactions, along with adverse treatment effects (Yangco, et al., 2014). With ART, patients can achieve viral suppression and healthy CD4 counts and prevent the onset of secondary infections such as MAC (Buchacz, et al, 2010). Thus, we do not track specific MAC prophylaxis.



- **Overall Rate:**

- Improved management of HIV infection has contributed to declines in the number of new AIDS cases in the United States.
- Overall, in 2011, the total rate of new AIDS cases was 12.4 per 100,000 population.

- **Trends:**

- From 2000 to 2011, the rates of new AIDS cases decreased for the total population, Blacks, Hispanics, and Whites.
- From 2003 to 2011, Asians had lower rates of new AIDS cases than Whites.
- From 2000 to 2011, the rates of new AIDS cases decreased for those ages 25-34, 35-44, and 45-54.
- The rate of new AIDS cases worsened for those ages 13-24.

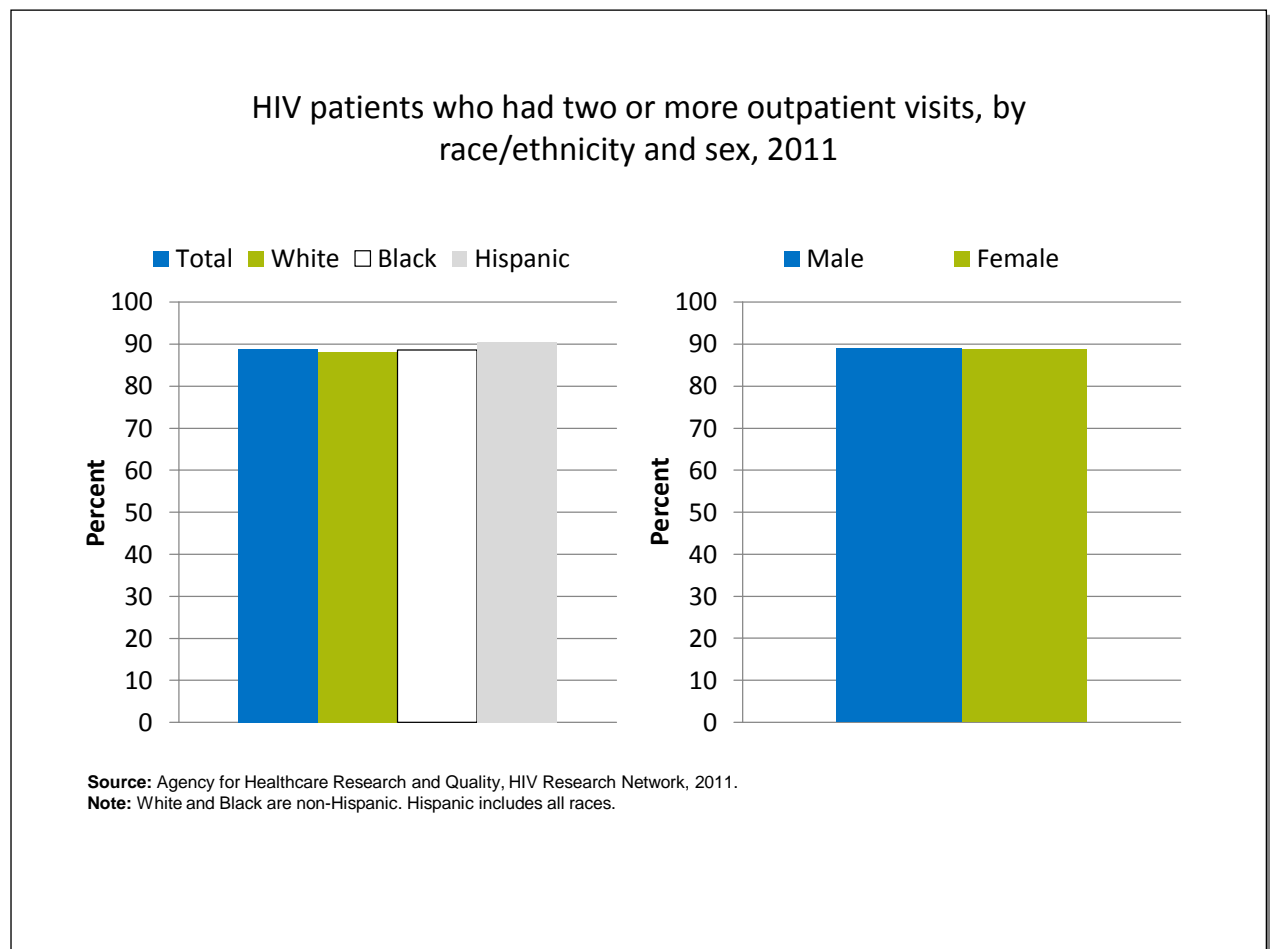
- **Disparities:**

- In all years, Blacks and Hispanics had higher rates of new AIDS cases compared with Whites, but the gap between Blacks and Whites is narrowing.
- From 2000 to 2011, people ages 25-34, 35-44, and 45-54 had higher rates of new AIDS cases compared with those age 55 and over. The gap between those ages 35-44 and 55 and over is narrowing over time.

- **Achievable Benchmark:**

- The 2010 top 5 State achievable benchmark for new AIDS cases was 2.8 per 100,000 population. The top 5 States that contributed to the achievable benchmark are Iowa, Maine, South Dakota, Utah, and Wisconsin.
- At the current rate, the total population could not achieve the benchmark for 17 years. Whites would take 9 years, Hispanics 11 years, and Blacks 18 years. Asians are not making progress toward the benchmark.
- People ages 25-34 and 35-44 could not achieve the benchmark for 18 years and 11 years, respectively. Those ages 13-24 are moving away from the benchmark, and those ages 45-54 and 55 and over are not making progress toward the benchmark.

## Outpatient Visits Among HIV Patients



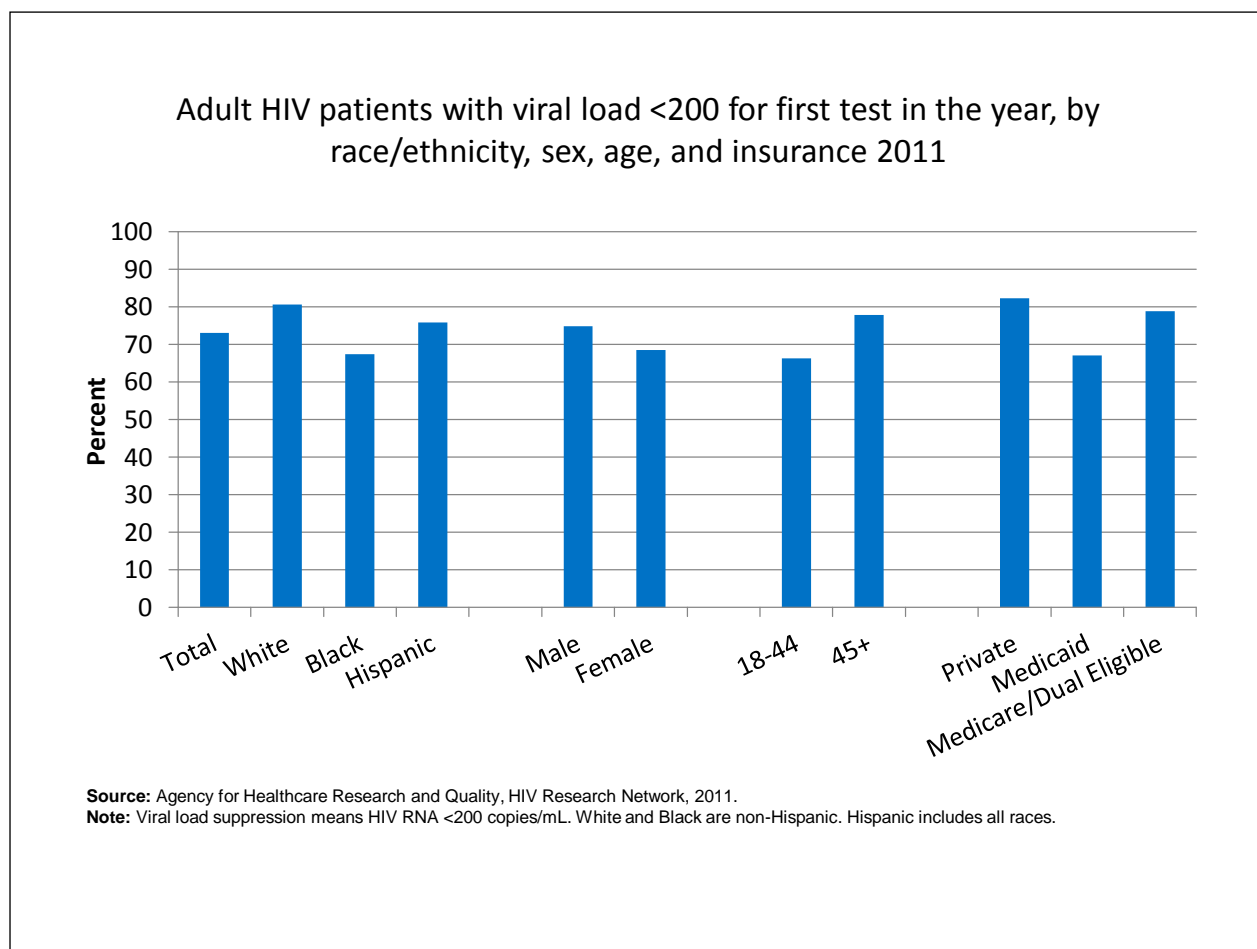
- **Overall Rate:**

- In 2011, 88.9% of people with HIV were retained in care, defined as having two or more outpatient visits during the year.
- The percentage of HIV patients retained in care in 2011 follows:
  - ◆ Whites, 88.1%,
  - ◆ Blacks, 88.6%,
  - ◆ Hispanics, 90.6%,
  - ◆ Males, 89%, and
  - ◆ Females, 88.7%.

- **Groups With Disparities:**

- In 2011, there were no statistically significant differences by race/ethnicity or sex in the percentage of people with HIV retained in care.

## HIV Patients With Viral Load Below 200



### Overall Rate:

- Viral load suppression below 200 copies/mL is desired, as this improves morbidity and mortality for people living with HIV and decreases the chances of spreading HIV. Thus, it is essential for HIV patients to continue to adequately manage the disease, by adhering to antiretroviral therapy and getting regular viral load testing.
- In 2011, 73.1% of adult HIV patients had a suppressed viral load, defined as HIV RNA less than 200 mL for the first test in the year.

### • Groups With Disparities:

- In 2011, the percentage of adult HIV patients with viral load suppression was lower for Blacks (67.4%) compared with Whites (80.6%) and lower for females (68.5%) compared with males (74.9%).
- In 2011, the percentage of adult HIV patients with viral load suppression was lower for adults ages 18-44 (66.3%) compared with those ages 45 and over (77.8%).
- In 2011, the percentage of adult HIV patients with viral load suppression was lower for those with Medicaid (67.1%) and Medicare/dual eligible (78.8%) compared with people with private insurance (82.3%).

## Deaths of People With HIV Infection

- A number of factors affect the death rate among people living with HIV, including:
  - Underlying rates of HIV risk behaviors,
  - Prevention of HIV transmission,
  - Early detection and treatment of HIV disease, and
  - Management of AIDS and its complications and comorbidities.
- With widespread use of antiretroviral therapy, a better understanding is needed of the patterns and risk factors for cause-specific mortality.

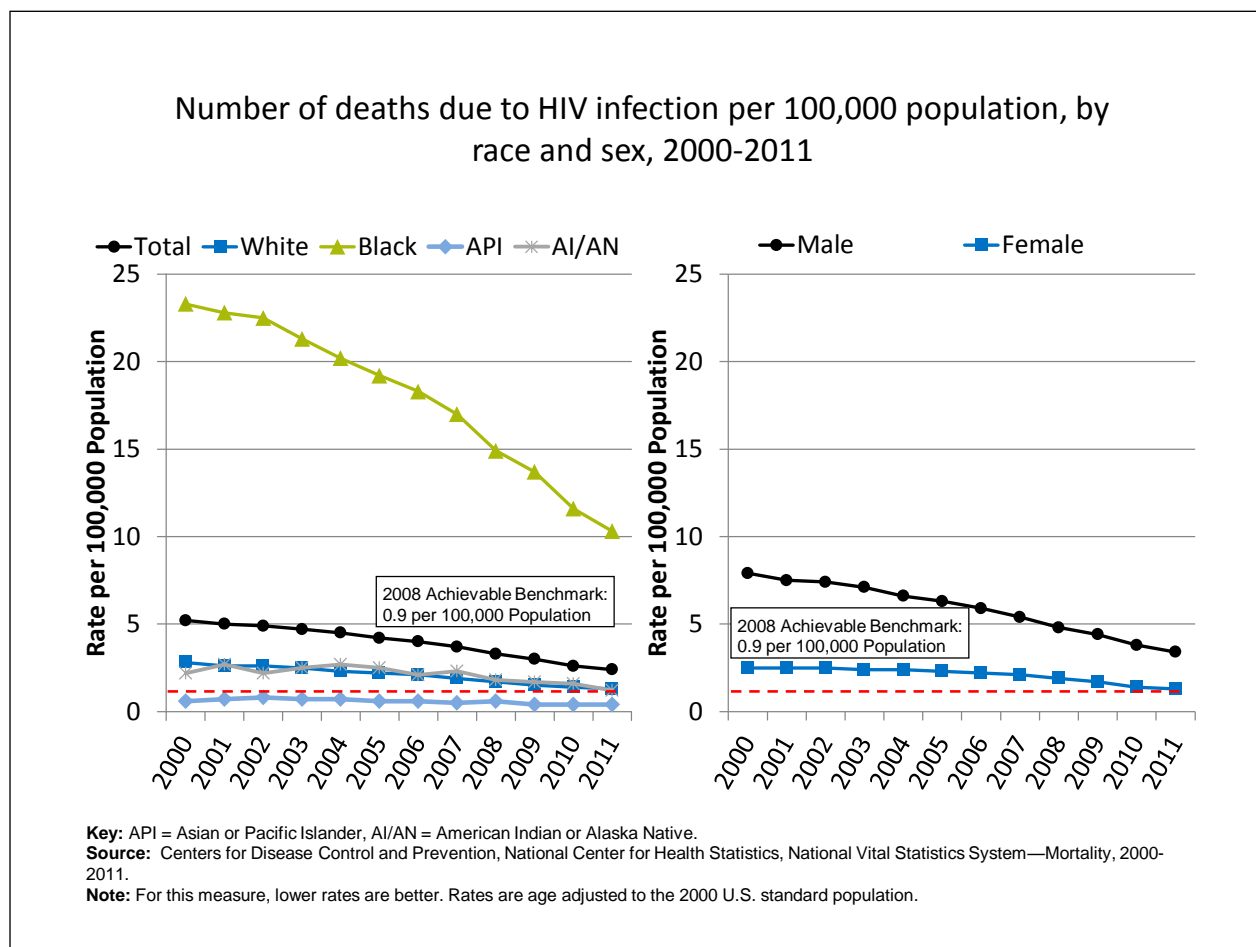
## Hepatitis and Deaths of People With HIV Infection

- An estimated one-third of people with HIV are co-infected with hepatitis B or hepatitis C; hepatitis C is more common.
- Viral hepatitis progresses faster and causes more liver-related health problems among people with HIV than among those without HIV.
- Drug therapy has extended the life expectancy of people with HIV, but hepatitis has become the leading cause of non-AIDS-related death in this population (CDC, 2014).
- Hepatitis C increases the risk of death in HIV patients by about 50% (Branch, et al., 2011).
- Current recommendations are to screen all HIV-infected patients for hepatitis C.
- Patients at high risk for hepatitis C should be screened annually and whenever this infection is suspected (AIDS Info, 2014).

## Antiretroviral Therapy and HIV Deaths

- ART has reduced the death rate of people living with HIV (PLWH), allowing their life expectancy to approach that of the general population.
- AIDS-related deaths in PLWH decrease with time on ART, but overall mortality among PLWH remains higher than in the general population.
- As the HIV-infected population ages and time on ART increases, causes of death and association with patient characteristics are changing:
  - In high-income countries, deaths from cancer, cardiovascular disease, and liver disease have been identified among PLWH.
  - It is important to study cause-specific mortality to clarify whether these deaths result from effects of ART, prolonged exposure to HIV, restoration of CD4 counts after severe immunosuppression, or aging and non-HIV risk factors.
- Appropriate management based on the complex relationship between associated comorbidities and HIV disease could decrease mortality among PLWH and improve their quality of life (Ingle, et al., 2014).

## Deaths Due to HIV Infection



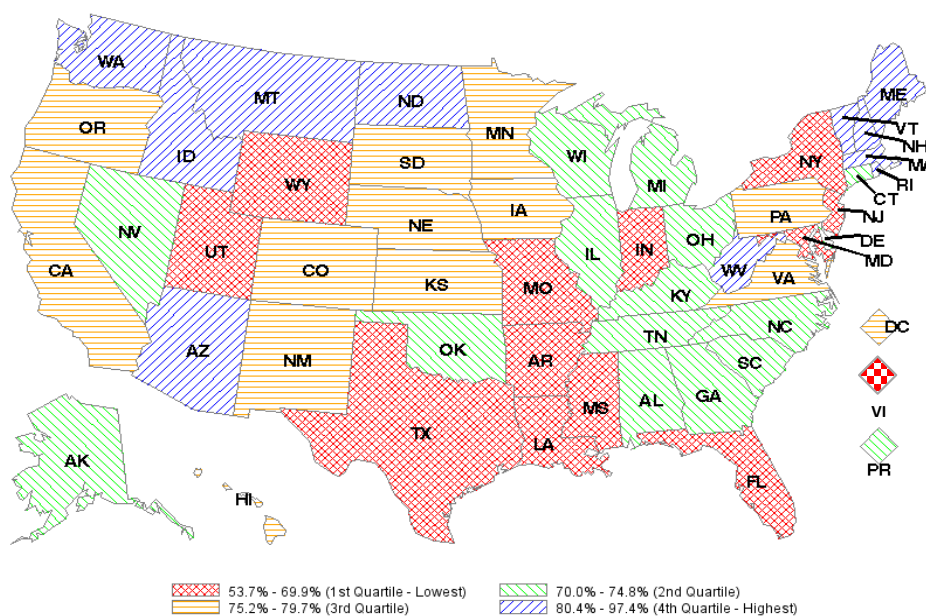
- **Overall Rate:** In 2011, the total rate of HIV infection deaths was 2.4 per 100,000 population. HIV infection death rates are decreasing overall and for all racial/ethnic groups and both sexes.
- **Groups With Disparities:**
  - From 2000 to 2011, HIV infection death rates were higher for Blacks than for Whites. The disparity between Blacks and Whites is narrowing.
  - In all years, Asians and Pacific Islanders had lower rates than Whites.
  - In all years, the rate of HIV infection deaths was higher for males than for females.
- **Achievable Benchmark:**
  - The 2008 top 4 State achievable benchmark for HIV deaths was 0.9 per 100,000 population. The top 5 States that contributed to the achievable benchmark are Kansas, Minnesota, Oregon, and Wisconsin.
  - Overall, it would take the total population 6 years to reach the benchmark. At the current rate, Whites, Blacks, and AI/ANs could achieve the benchmark in 3, 8, and 2 years, respectively. APIs have already reached the benchmark. Women would take 3 years and men would take 6 years to achieve the benchmark.

## Ryan White Program Overview

- Since inception, the Ryan White HIV/AIDS Program (RWHAP) has provided funds for primary care and support services for people living with and affected by HIV.
- Working with States, cities, and local community organizations, the RWHAP works to improve the quality of HIV-related care for those who lack sufficient health care coverage or financial resources to cope with HIV.
- For a second year, we present data from the RWHAP:
  - Data presented are limited to those who received care through the RWHAP.
  - Data are not representative of the entire HIV population, which is estimated to be about 1.2 million people in the United States.
- For more information, go to <http://hab.hrsa.gov/about/aboutprogram.html>.

## Ryan White Program Patients With Viral Load Below 200

Ryan White program HIV patients with at least one HIV care visit and most recent viral load <200 during the year, 2011



Source: Health Resources and Services Administration, HIV/AIDS Bureau, 2011.

- **Overall Rate:**
  - The number of HIV-positive clients with at least one HIV medical care visit and at least one viral load available was 264,595; 72.6% were virally suppressed (defined as most recent HIV RNA <200 copies/mL in the calendar year). It is important that RWHAP

providers and grantees focus on improving viral load suppression rates in their States, as well as comparing their performance with other States.

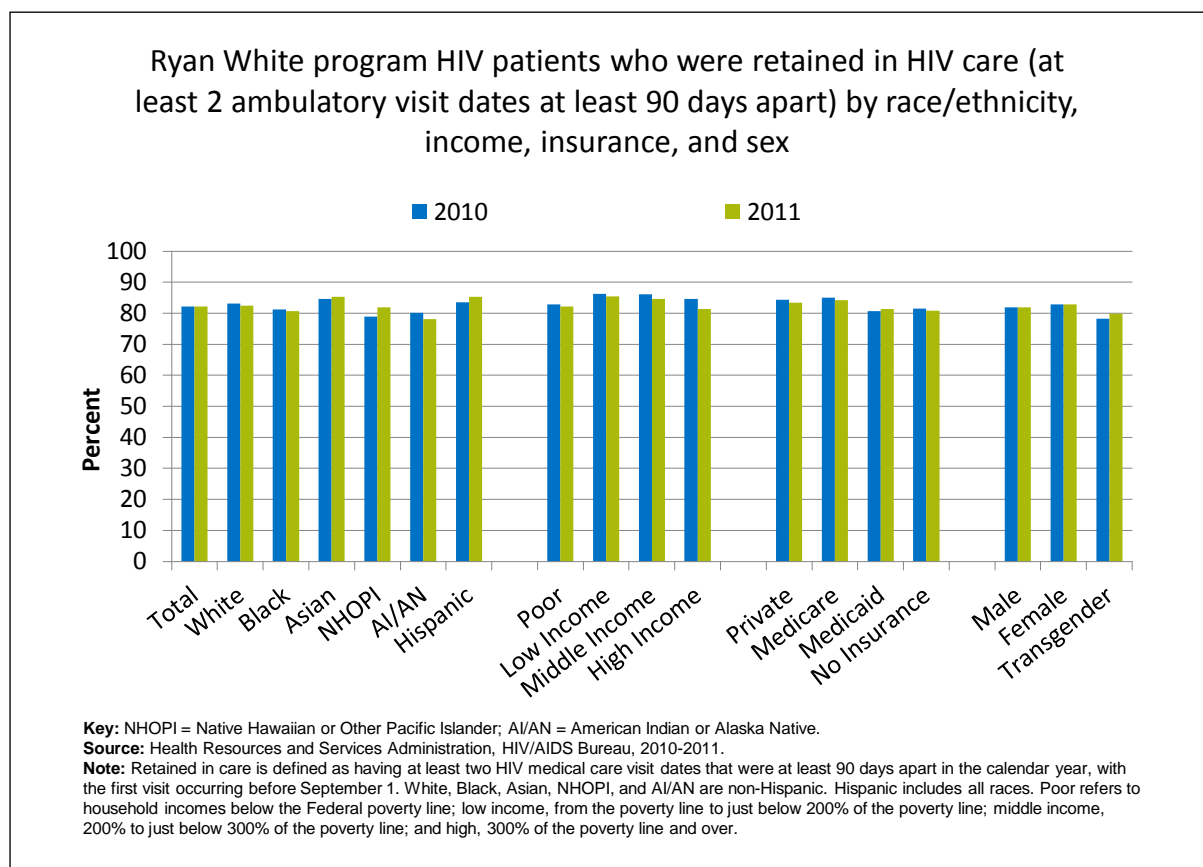
- **Differences by State:**

- Quartile ranges were as follows:

- ◆ 1<sup>st</sup> quartile (lowest): 53.7%-69.9% (AR, FL, IN, LA, MD, MS, MO, NJ, NY, TX, UT, VI, WY)
- ◆ 2<sup>nd</sup> quartile: 70.0%-74.8% (AL, AK, CT, DE, GA, IL, KY, MI, NV, NC, OH, OK, PR, SC, TN, WI)
- ◆ 3<sup>rd</sup> quartile: 75.0%-79.7% (CA, CO, DC, HI, IA, KS, MN, NE, NM, OR, PA, SD, VA)
- ◆ 4<sup>th</sup> quartile (Highest): 80.4%-97.4% (AZ, ID, MA, ME, MT, ND, NH, RI, VT, WA, WV)

- In 2011, most of the New England States were in the highest quartile for the percentage of Ryan White program patients with at least one HIV care visit and most recent viral load of less than 200 during the year. Most of the West South Central states were in the lowest quartile.

### Ryan White Program Patients Retained in HIV Care



- **Overall Rate:** The number of HIV-positive clients with at least one HIV medical care service and at least one HIV medical care visit date available during 2011 was 276,067. In 2011, 82.2% of Ryan White program HIV patients were retained in care.
- **Groups With Disparities:**
  - In both years, Black and AI/AN HIV-positive clients were less likely to be retained in care than White HIV-positive clients.
  - In both years, HIV-positive clients from low and middle income households were more likely to be retained in care compared with those from high income households.
  - In both years, HIV-positive clients with Medicaid and those without insurance were less likely to be retained in care compared with those with private insurance.
  - In both years, transgender HIV-positive clients were less likely to be retained in care compared with nontransgender male HIV-positive clients.
  - The HIV/AIDS Bureau does not ask the sexual orientation of clients, but it collects variables that portray aspects of sexual orientation, including gender, transgender status, sex at birth, and client risk factors, such as men who have sex with men. For more information, go to [https://careacttarget.org/sites/default/files/file-upload/resources/2014RSRManual508\\_0.pdf](https://careacttarget.org/sites/default/files/file-upload/resources/2014RSRManual508_0.pdf).



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## Mental Health and Substance Abuse

### Measures

- Process: Treatment for depression
- Outcome: Suicide deaths
- Process: Treatment for illicit drug use or alcohol problem
- Process: Completion of substance abuse treatment
- Outcome: Emergency department visits with a principal diagnosis related to mental health, alcohol or substance abuse, by age and income

### Treatment for Depression

- Treatment for depression can reduce symptoms and associated illnesses and return individuals to a productive lifestyle.
- Sequenced Treatment Alternatives to Relieve Depression (STAR\*D) studied treatment:
  - Funded by the National Institute of Mental Health.
  - Involved both primary care and specialty care settings.
  - Included people with complex health conditions, such as multiple concurrent medical and psychiatric conditions.
  - Was the largest clinical trial ever of depression treatment.
  - Found that 28% to 33% of participants were symptom free after the first round of medication, and nearly 70% achieved remission after 12 months (Insel & Wang, 2009).
- Cost-benefit analyses show that compared with usual care, strategies for treating depression in primary care settings, such as the collaborative care model, have produced positive net social benefits (Glier, et al., 2010).

### Outcomes of Treatment for Depression

- About 50% to 60% of patients have symptoms even after adequate first-line treatment for depression.
- Patients' thinking and behavior play a huge role in determining outcomes, making them candidates for psychosocial treatment.
- Evidence-based psychological therapies can help patients overcome interpersonal difficulties, health beliefs, stigmas, medication nonadherence, anhedonia (inability to feel pleasure), and rumination.
- Psychological therapies can help modify health beliefs, treat comorbid anxiety and other disorders, and incorporate environmental and contextual factors, thus enabling patients to facilitate their recovery (Casey, et al., 2013).

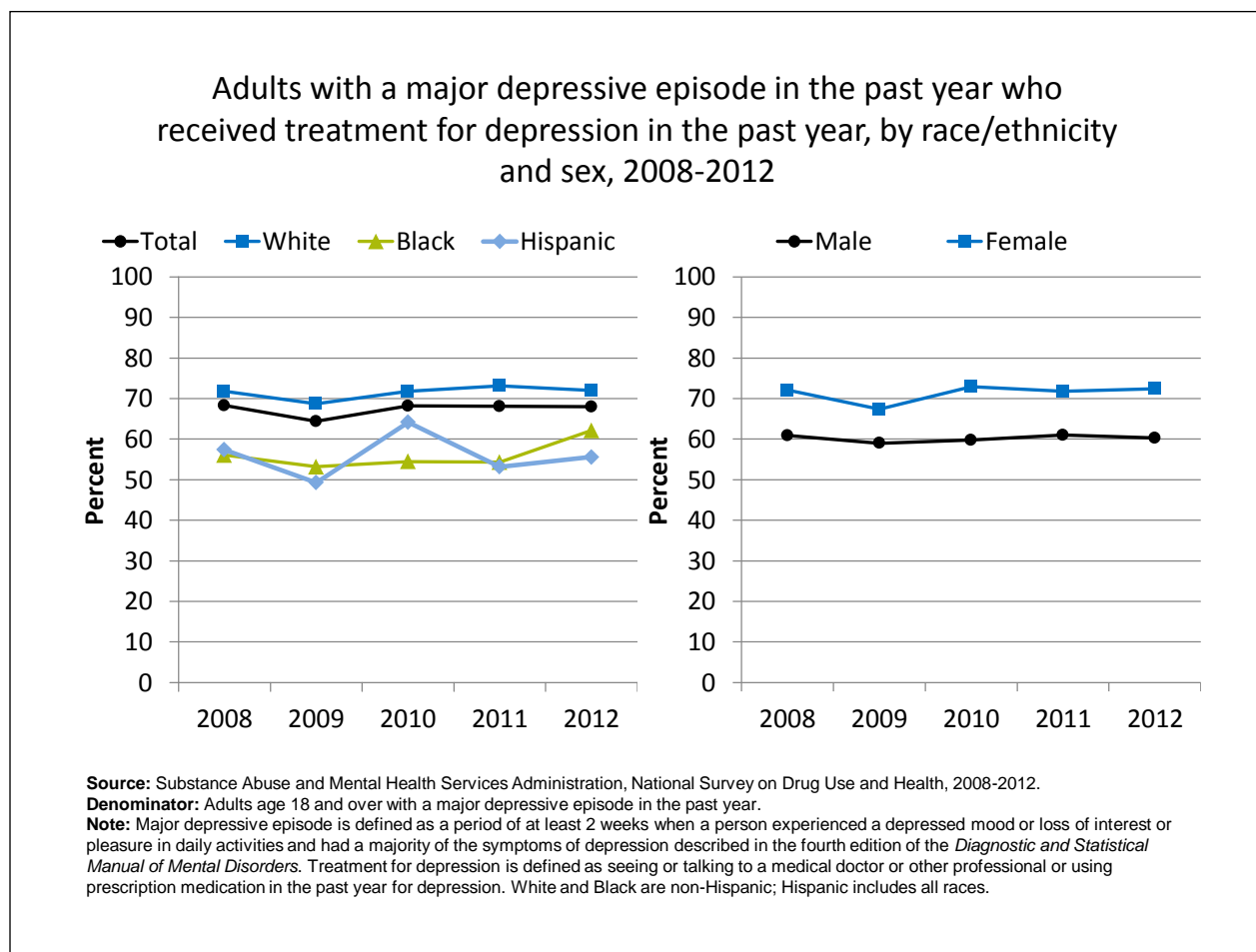
### Barriers to High-Quality Mental Health Care

- Barriers to high-quality mental health care include:
  - Cost of care,
  - Lack of sufficient insurance for mental health services,
  - Discrimination and negative attitudes toward mental health problems,

- Fragmented organization of services, and
- Mistrust of providers.
- In rural and remote areas, limited availability of skilled care providers is also a major problem.
- For racial and ethnic populations, lack of culturally and linguistically competent providers is a major barrier.

### Receipt of Treatment for Depression

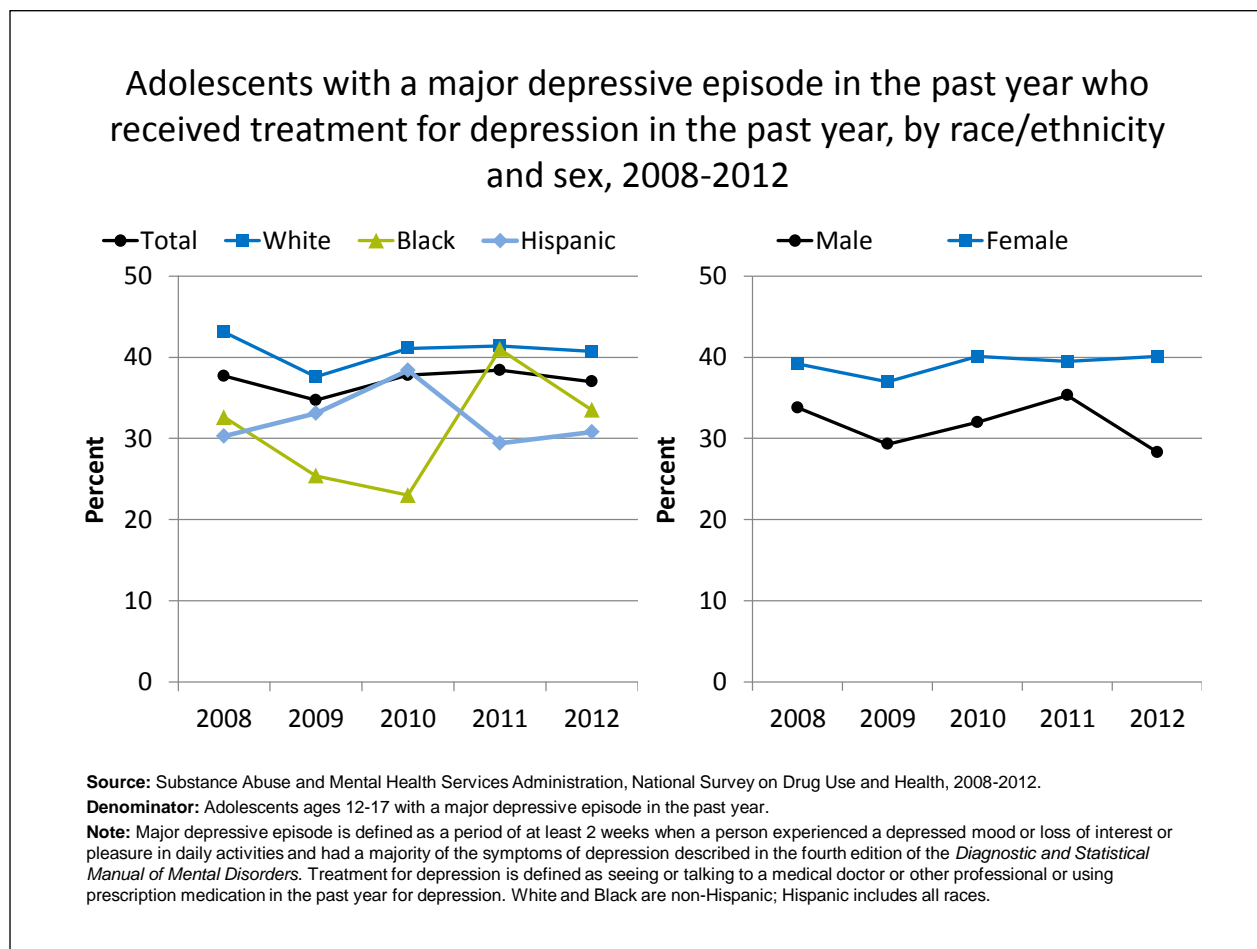
#### Adults



- **Importance:** The United States Preventive Services Task Force (USPSTF) recommends screening adults for depression when staff-assisted depression care supports are in place to ensure accurate diagnosis, effective treatment, and followup (USPSTF, 2015a).
- **Overall Rate:** In 2012, 68% of adults with a major depressive episode received treatment for depression.
- **Groups With Disparities:**
  - In all years, Black adults with depression were less likely than White adults to receive treatment.

- In every year except 2010, Hispanic adults with depression were less likely than White adults to receive treatment.
- From 2008 to 2012, females with a major depressive episode were more likely than males to receive treatment.

### Adolescents



- **Importance:**
  - Outpatient mental health treatment and psychotropic medication use in children and adolescents increased in the United States between 1996-1998 and 2010-2012. Although youths with less severe or no impairment accounted for most of the absolute increase in service use, youths with more severe impairment had the greatest relative increase in use, yet less than half accessed services in 2010-2012 (Olfson, et al., 2015).
  - The United States Preventive Services Task Force (USPSTF) recommends screening of adolescents ages 12-18 years for major depressive disorder when systems are in place to ensure accurate diagnosis, psychotherapy (cognitive-behavioral or interpersonal), and followup (USPSTF, 2015b).
- **Overall Rate:** In 2012, 37% of adolescents with a major depressive episode received treatment for depression.

- **Groups With Disparities:**

- In 3 of 5 years (2008, 2009, and 2010), Black adolescents with depression were less likely than White adolescents to receive treatment.
- In 3 of 5 years (2009, 2010, and 2012), females with depression were more likely than males to receive treatment.

## **Suicide Deaths**

- Suicide may be prevented when its warning signs are detected and treated.
  - The growing use of standardized screening instruments and electronic medical records will likely increase clinicians' ability to identify suicidal ideas and plans among individuals being treated for depression.
  - A recent study found that about half of people who died by suicide made a health care visit within 4 weeks of death. Only 24% had a mental health diagnosis (Ahmedani, et al., 2014).

## **Probability of Suicide**

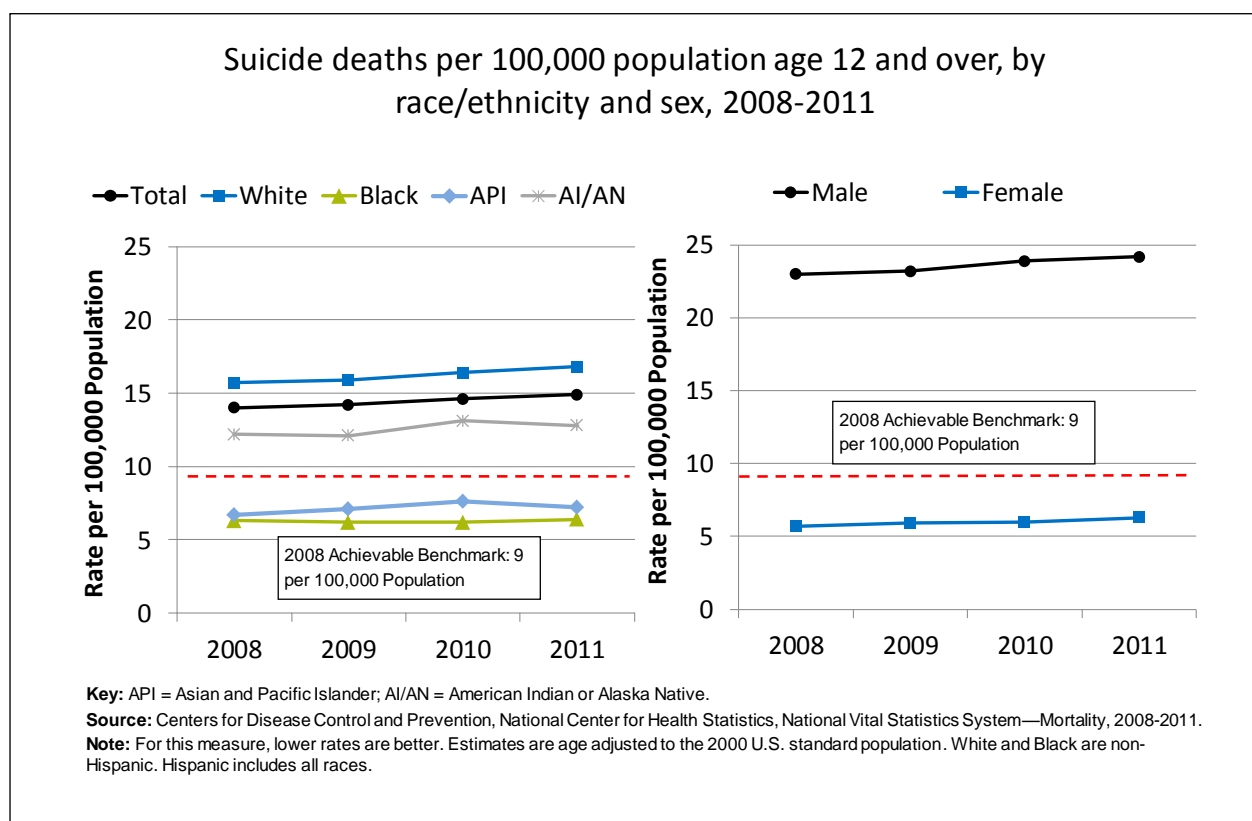
- Risk factors for suicide include:
  - Psychotic experiences:
    - ◆ Individuals with psychotic experiences are about 5 times more likely to report suicidal ideation and nearly 10 times more likely to report a suicide attempt (DeVylder, et al., 2015). Assessing psychotic experiences among individuals with suicidal ideation could reduce suicide attempts.
  - Suicidal ideation:
    - ◆ Progression from ideation to suicide attempt varies by suicide plan and major depression status.
    - ◆ Research needs to explore factors that affect suicide attempts and death by suicide among high-risk individuals with suicidal ideation (Han, et al., 2015).
    - ◆ About 13% of suicidal ideators in a given year attempt suicide during that year. Suicidal ideation is the strongest known clinical predictor for death by suicide (Han, et al., 2015).
  - Positive responses to the item "Thoughts that you would be better off dead, or of hurting yourself in some way" on the Patient Health Questionnaire for depression (Simon, et al., 2013).

## **Suicide Prevention**

- Suicide prevention is multifaceted, including:
  - Educating physicians and keeping lethal weapons away from suicidal people (Mann, et al., 2005).
  - Using cognitive-behavioral therapy (Tarrier, et al., 2008).

- Implementing various strategies depending on risk:
  - ◆ Universal strategies that target entire populations (e.g., public education and awareness programs),
  - ◆ Selective strategies that address at-risk populations (e.g., peer “natural helpers” and accessible crisis services), and
  - ◆ Indicated strategies that address specific high-risk individuals (e.g., case management and parent support programs) (Nordentoft, 2011).
- Ongoing research shows promising results for Internet-based cognitive-behavioral therapy and psychoeducation in treating individuals with conditions such as mood, eating, and sleep disorders (Thorndike, et al., 2013).
- As “mobile health” interventions become more sophisticated, they can be adapted to be culturally specific and sensitive (Burns, et al., 2013).

### Suicide Death Rate



- **Overall Rate:** In 2011, the overall suicide death rate was 14.9 per 100,000 population age 12 and over.
- **Trends:** From 2008 to 2011, the suicide death rates worsened for the total population, Whites, and both sexes.

- **Groups With Disparities:**

- From 2008 to 2011, Blacks, Asians and Pacific Islanders, and American Indians and Alaska Natives had lower suicide death rates than Whites.
- In all years, males had higher suicide death rates compared with females.
- In all years, people living in medium metropolitan, small metropolitan, micropolitan, and noncore areas had higher suicide death rates compared with people living in large fringe metropolitan areas (data not shown). For more information on suicide death rates by geographic location, refer to the Rural Health Reform Policy Research Center 2014 *Update of the Rural-Urban Chartbook*, available at <https://ruralhealth.und.edu/projects/health-reform-policy-research-center/pdf/2014-rural-urban-chartbook-update.pdf>.

- **Achievable Benchmark:**

- The 2008 top 5 State achievable benchmark was 9 suicide deaths per 100,000 population. The top 5 States that contributed to the achievable benchmark are Connecticut, District of Columbia, Massachusetts, New Jersey, and New York.
- APIs, Blacks, and females have achieved the benchmark.
- The total population, AI/ANs, Whites, and males are moving away from the benchmark.

## **Treatment for Substance Abuse Disorders**

- Substance abuse disorders can lead to:
  - Addiction.
  - Increased risk of certain cancers.
  - Damage to the liver, brain, and other organs.
  - Birth defects, such as fetal alcohol spectrum disorders.
  - Increased risk of death from car crashes and other injuries.

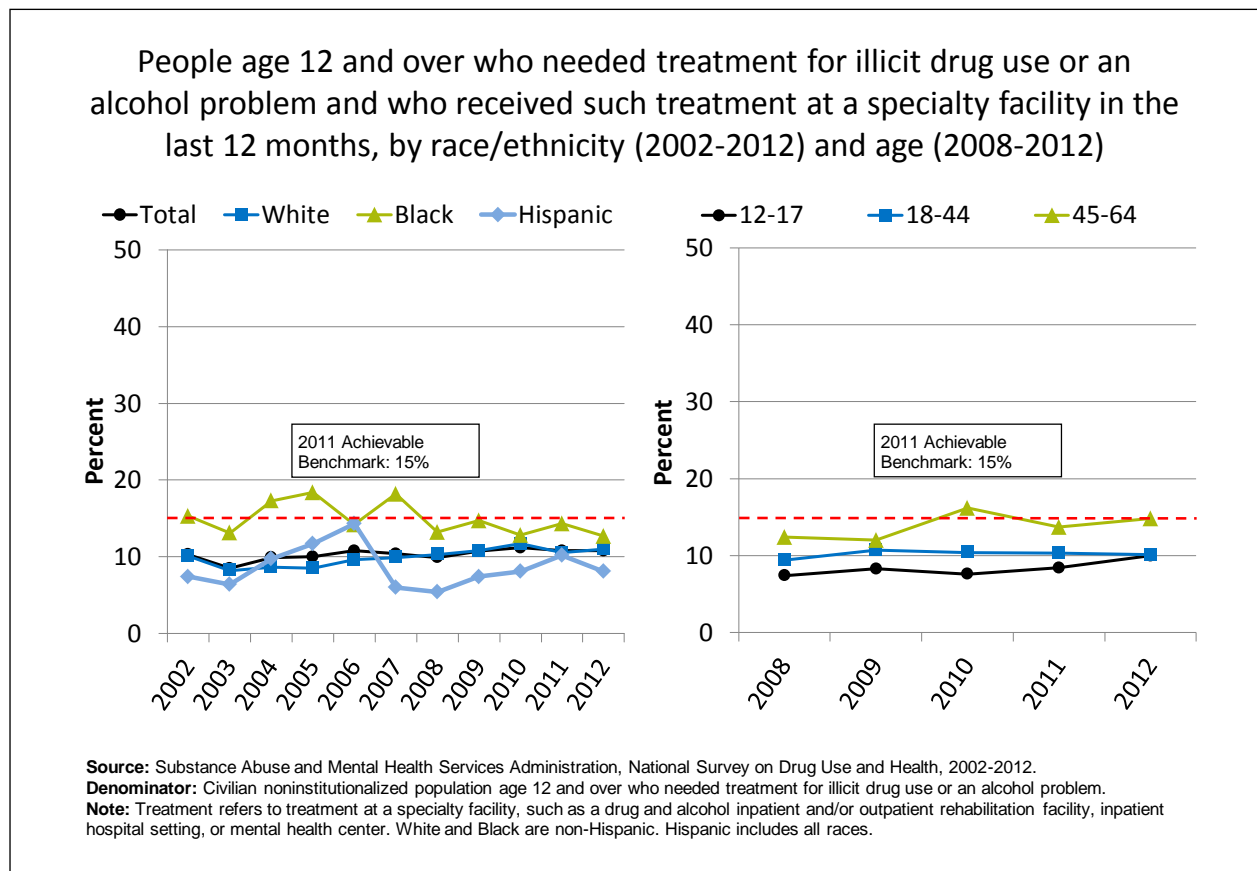
### **Importance of Treatment**

- In 2011, about 2.5 million emergency department (ED) visits resulted from medical emergencies involving drug misuse or abuse:
  - 1.25 million involved illicit drugs,
  - 1.24 million involved nonmedical use of pharmaceuticals, and
  - 0.61 million involved drugs combined with alcohol (SAMHSA, 2014).
- Substance abuse disorders can be effectively treated at specialty facilities.

### **Treatment Needs**

- In 2013, nearly 23 million Americans age 12 years and over needed treatment for substance abuse.
- An estimated 2.5 million people received treatment at a specialty facility (hospital [inpatient], drug or alcohol rehabilitation [inpatient or outpatient], or mental health center), but more than 20 million people who needed this type of treatment did not receive it (SAMHSA, 2014).

## Receipt of Substance Abuse Treatment



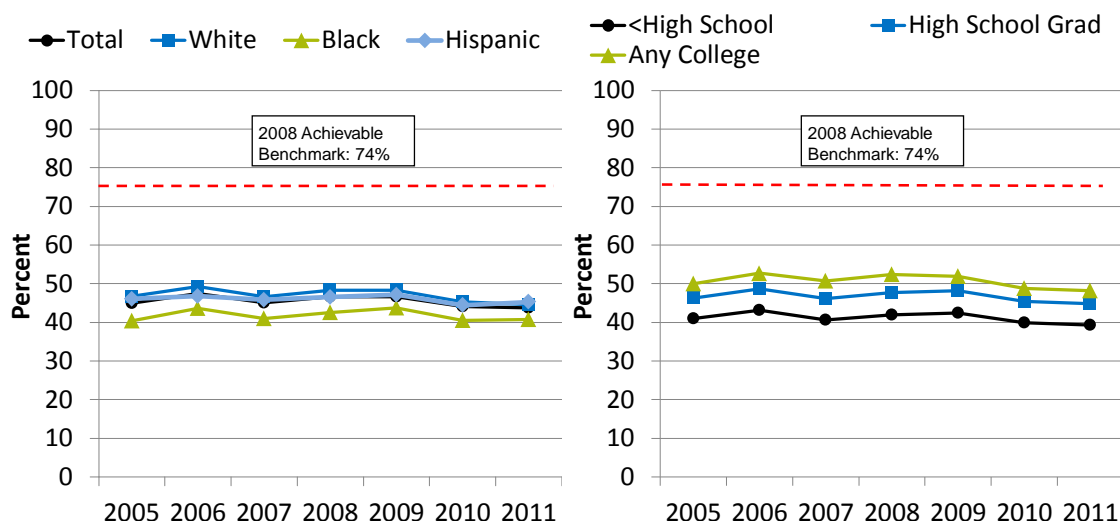
- **Overall Rate:** In 2012, only 10.8% of people age 12 and over who needed treatment for illicit drug use or an alcohol problem received such treatment at a specialty facility in the last 12 months.
- **Groups With Disparities:** From 2002 to 2012, there were no statistically significant differences by race/ethnicity; and from 2008 to 2012, there were no statistically significant differences by age.
- **Achievable Benchmark:**
  - The 2011 top 5 State achievable benchmark was 15%. The top 5 States that contributed to the achievable benchmark are Alabama, Alaska, Delaware, Maryland, Oregon, and Utah.
  - At the current rate, the total population would need 30 years to achieve this benchmark. People ages 12-17 would take 9 years, while people ages 18-44 would take 49 years. It would take people ages 45-64 less than 1 year to achieve the benchmark. Whites could achieve the benchmark in 15 years while Blacks and Hispanics are moving away from the benchmark.

### Process: Completion of Substance Abuse Treatment

- For patients receiving treatment for substance abuse, studies have shown that increased length of treatment correlates with improved outcomes (McLellan, et al., 1996), such as long-term abstinence.
- Dropout from treatment often leads to relapse and return to substance use.



### People age 12 and over treated for substance abuse who completed treatment course, by race/ethnicity and education 2005-2011



**Source:** Substance Abuse and Mental Health Services Administration, Treatment Episode Data Set, Discharge Data Set, 2005-2011.

**Denominator:** Discharges age 12 and over from publicly funded substance abuse treatment facilities.

**Note:** White and Black are non-Hispanic. Hispanic includes all races.

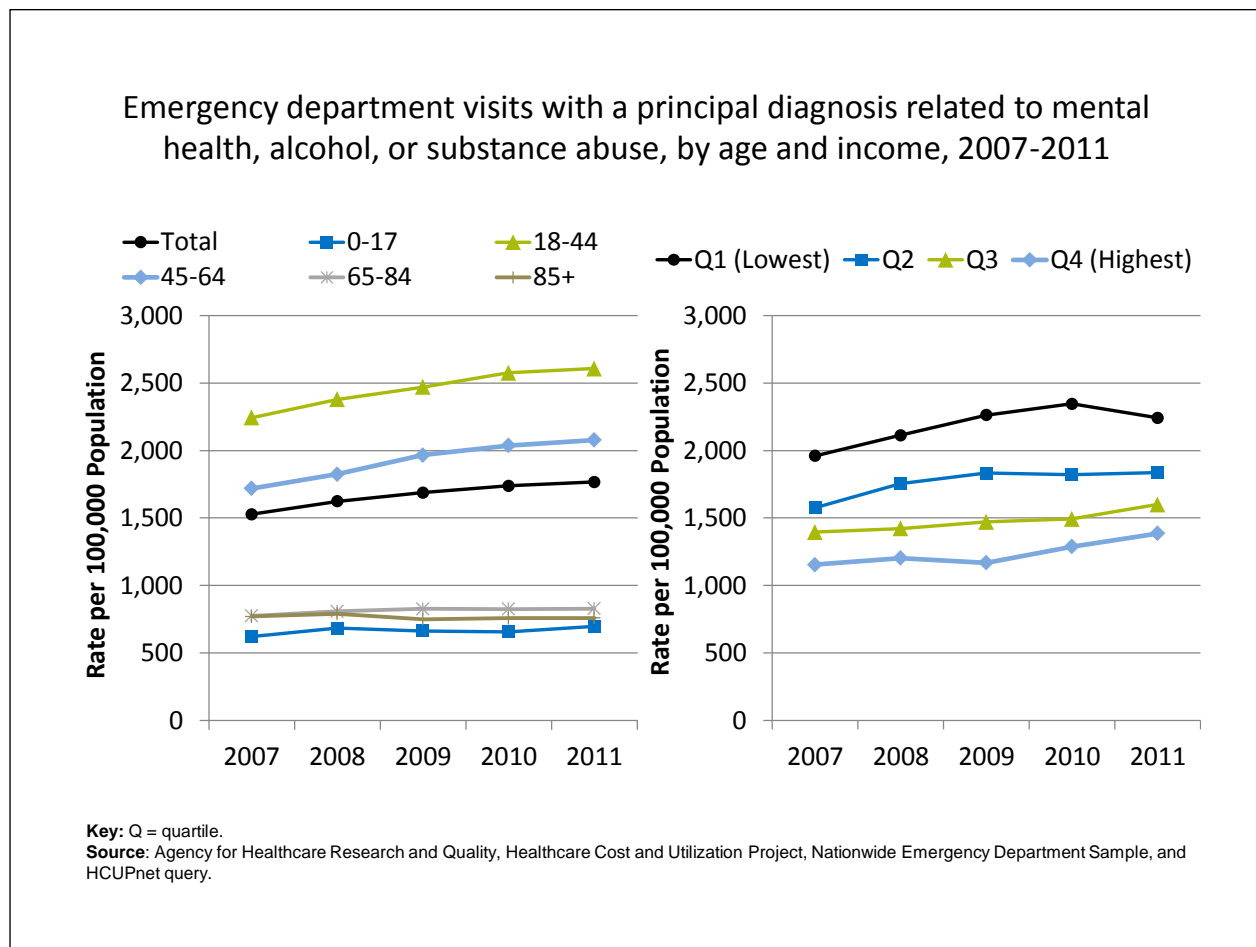
- Overall, in 2011, 45% of people age 12 and over treated for substance abuse completed their treatment course.
- Groups With Disparities:**
  - In 4 of 7 years, Blacks who were treated for substance abuse were significantly less likely than Whites to complete treatment.
  - In all years, people with less than a high school education who were treated for substance abuse were less likely than people with any college education to complete treatment.
- Achievable Benchmark:**
  - The 2008 top 5 State achievable benchmark was 74%. The top 5 States that contributed to the achievable benchmark are Colorado, Connecticut, District of Columbia, Mississippi, and Texas.
  - No group showed progress toward the benchmark.

### Potentially Avoidable Emergency Department Visits

- About one in three individuals has had a mental health or substance abuse (MHSA) condition within the last 12 months.
- In 2007, 12 million ED visits involved a diagnosis related to MHSA, accounting for 12.5% of all ED visits in the United States.

- Health care providers are concerned about the rise in ED visits for MHSA, as ED overcrowding can reduce quality of care and increase the likelihood of medical error (Owens, et al., 2010).

### Outcome: Emergency Department Visits Related to Mental Health and Substance Abuse



- Overall Rate:** From 2007 to 2011, the overall rate of ED visits with a principal diagnosis related to mental health, alcohol, or substance abuse significantly increased from 1,527.8 to 1,766.8 per 100,000 population.
- Groups With Disparities:**
  - In all years, individuals ages 0-17 and 65 and over were significantly less likely to have an ED visit with a principal diagnosis related to mental health, alcohol, or substance abuse than individuals ages 18-44.
  - In 2011, individuals in the highest income quartile were less likely to have an ED visit with a principal diagnosis related to mental health, alcohol, or substance abuse than individuals in all other income groups.
  - For more ED measures for mental health and substance use disorders, refer to the 2014 Care Coordination chartbook at <http://www.ahrq.gov/research/findings/nhqrd/2014chartbooks/carecoordination/index.html>.

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## Musculoskeletal Diseases

### Arthritis

- Arthritis is the leading cause of disability in the United States, with prevalence projected to double by the year 2020 due largely to an aging population and an increasing prevalence of obesity (Johnson & Hunter, 2014).
- About one in five adults and 300,000 children have a diagnosed arthritic condition.
  - It is estimated that 41% of the 50 million U.S. adults living with arthritis report activity limitations caused by arthritis.
  - The Centers for Disease Control and Prevention predicts a 25% increase to 67 million of U.S adults with some form of arthritis by 2030.

### Effects of Arthritis

- Arthritis usually affects people who have other chronic conditions.
  - For example, arthritis is found among 52% of people with diabetes, 57% of people with heart disease, and 53% of people with hypertension.
  - Obese people with arthritis are 44% more likely not to be physically active compared to those without arthritis (White & Waterman, 2012).

### Costs of Arthritis

- In 2007, the costs attributable to arthritis and other rheumatic conditions were \$128 billion:
  - \$80.8 billion in direct medical expenditures (\$115 billion in 2013 dollars) and
  - \$47 billion in indirect lost earnings (\$59.4 billion in 2013 dollars) (Ma, et al., 2014).

### Measures

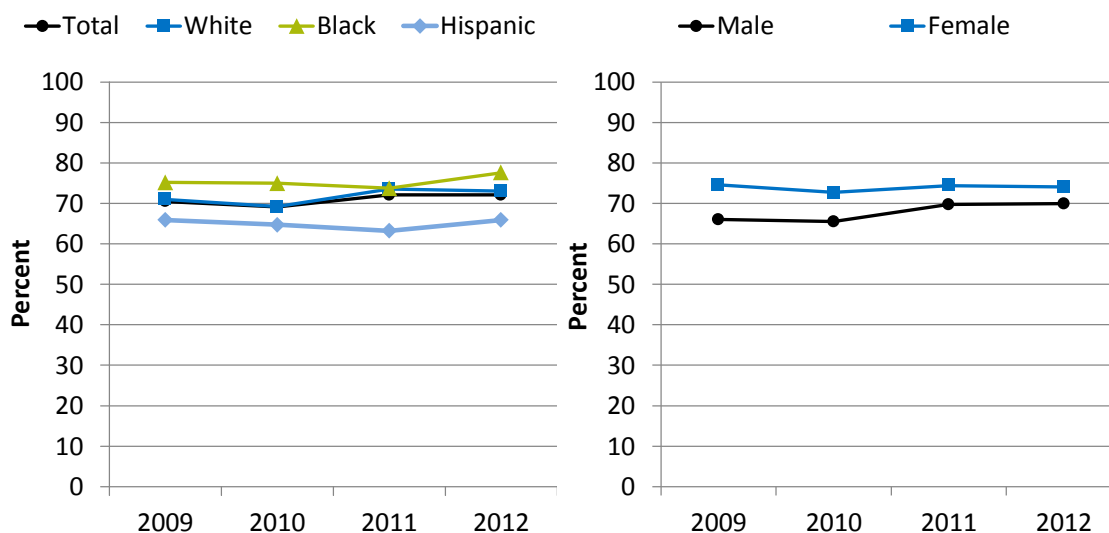
- Process: Adults with chronic joint symptoms who have ever seen a doctor or health professional for joint symptoms.

### Chronic Joint Symptoms

- Estimates of arthritis prevalence vary depending on whether the definition includes chronic joint symptoms (pain, aching, joint stiffness).
- People with chronic joint symptoms report similar health outcomes as those with arthritis:
  - Activity limitations,
  - Poor/fair health and mental health, and
  - Similar health care use (Canizares & Badley, 2012).
- These patients need interventions and advice to manage and control the pain and symptoms in order to improve their health and quality of life (Canizares & Badley, 2012).

### Adults Who Have Seen a Doctor for Joint Symptoms

Adults with chronic joint symptoms who have ever seen a doctor or other health professional for joint symptoms, by race/ethnicity and gender, 2009-2012



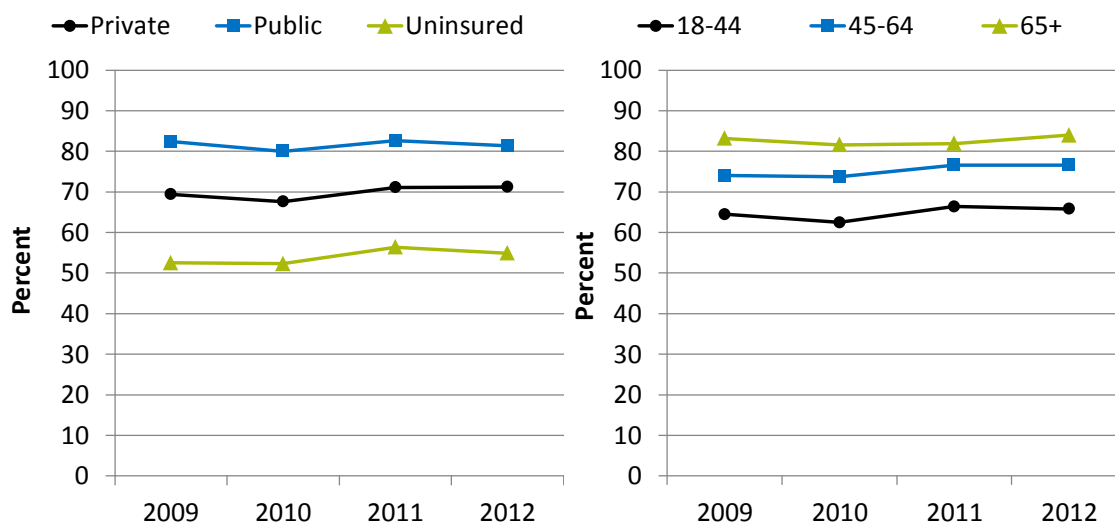
Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2009-2012.

Note: White and Black are non-Hispanic. Hispanic includes all races.

- **Overall Rate:** In 2012, 72.1% of adults with chronic joint symptoms reported seeing a doctor or other health professional for joint symptoms.
- **Groups With Disparities:**
  - In all years, Hispanics were less likely than Whites to report seeing a doctor or other health professional for joint symptoms.
  - In all years, females were more likely than males to report seeing a doctor or other health professional for joint symptoms.

## Adults Who Have Seen a Doctor for Joint Symptoms

Adults with chronic joint symptoms who have ever seen a doctor or other health professional for joint symptoms, by insurance and age, 2009-2012



Source: Centers for Disease Control and Prevention, National Center for Health Statistics, National Health Interview Survey, 2009-2012.

### • Groups With Disparities:

- In all years, people without insurance were less likely to report seeing a doctor or health professional for joint symptoms compared with people with private insurance.
- In all years, people with public insurance were more likely to report seeing a doctor or health professional for joint symptoms compared with people with private insurance.
- In all years, people ages 45-64 and 65 and over were more likely to report seeing a doctor or health professional for joint symptoms compared with those ages 18-44.

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## Respiratory Diseases

### Respiratory Disease Measures

- Process:
  - Completion of tuberculosis therapy
  - Daily asthma medication
  - Written asthma management plans
- Outcome:
  - Emergency department visits for asthma

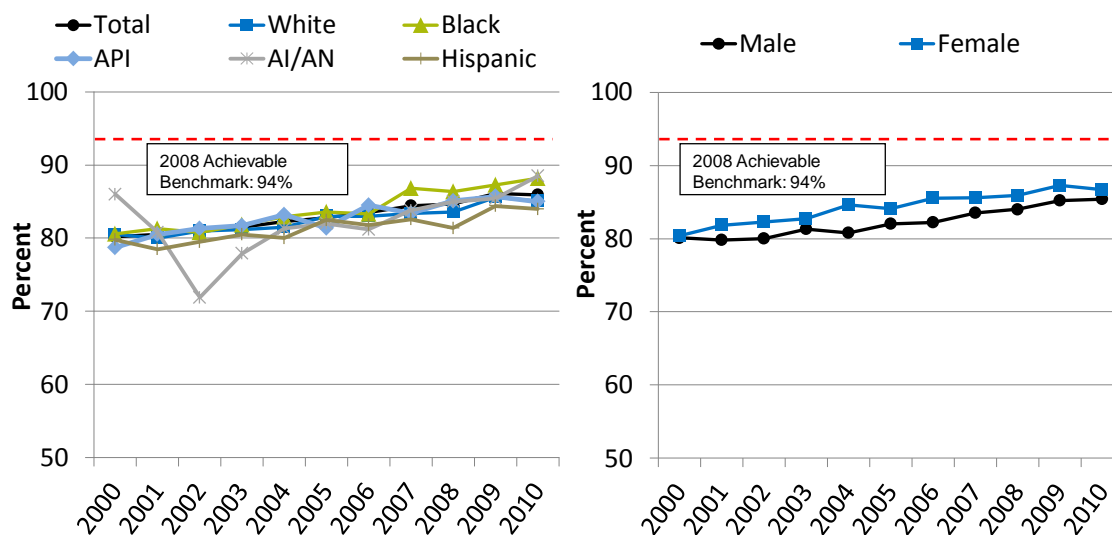
### Completion of Tuberculosis Therapy

- Incomplete tuberculosis therapy can lead to:
  - Increased risk of treatment failure,
  - Spread of infection to others, and
  - Development of drug-resistant strains of tuberculosis.
- The national goal for completion of treatment is:
  - By 2015, 93% completion of treatment within 12 months among patients eligible for 6- to 9-month regimens (CDC, 2010).



## Patients With Tuberculosis Who Completed Treatment

Patients with tuberculosis who completed a curative course of treatment within 1 year of initiation of treatment, by race/ethnicity and sex, 2000-2010



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

**Source:** Centers for Disease Control and Prevention, National Tuberculosis Surveillance System, 2000-2010.

**Denominator:** U.S. civilian noninstitutionalized population treated for tuberculosis.

**Note:** White, Black, and API are non-Hispanic. Hispanic includes all races.

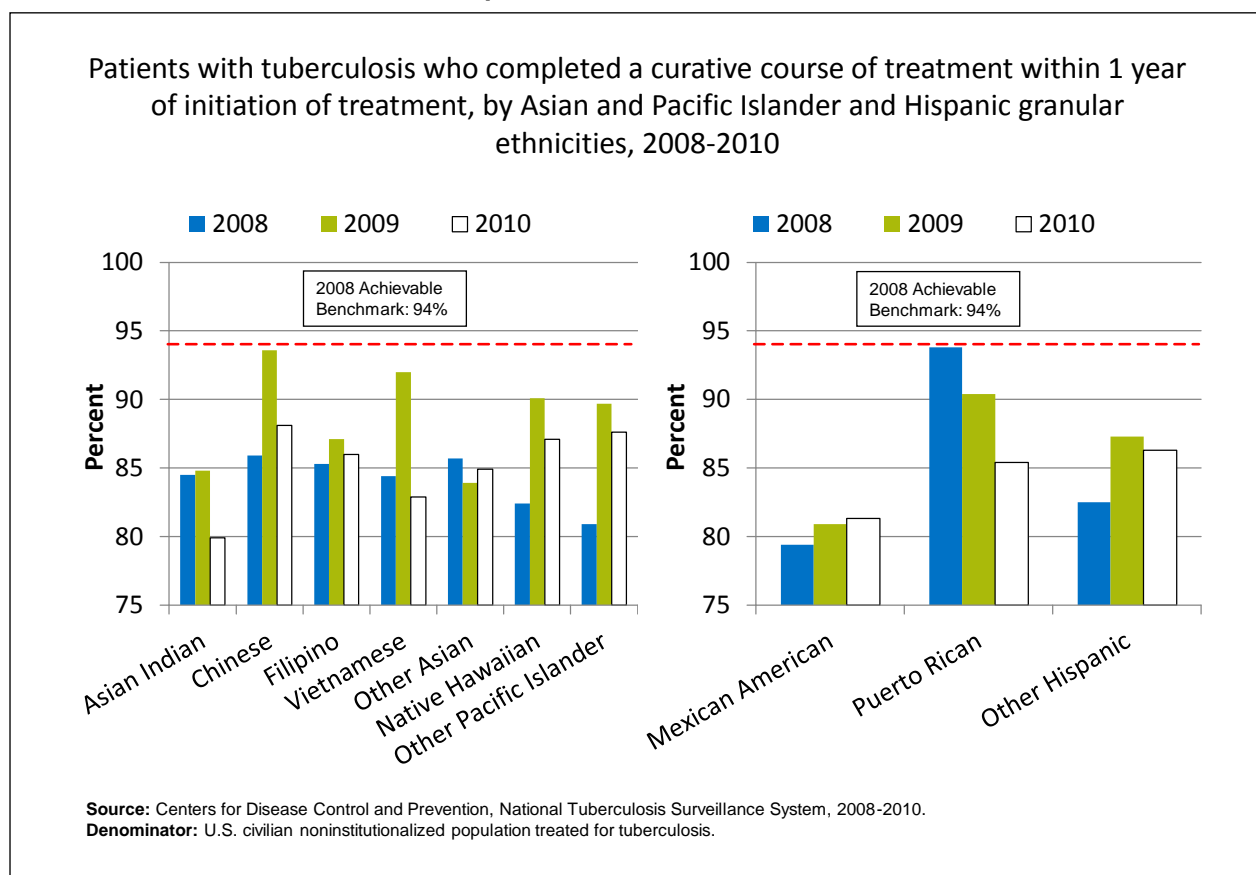
### • Trends:

- The percentage of patients who completed tuberculosis therapy within 1 year increased from 80.2% in 2000 to 85.9% in 2010. Improvements were observed among all racial/ethnic groups except American Indians and Alaska Natives (AI/ANs) and among both sexes.
- In 9 of 11 years, Hispanics were less likely than Whites to complete tuberculosis treatment.
- In 7 of 11 years, females were more likely than males to complete tuberculosis treatment.

### • Achievable Benchmark:

- The 2008 top 4 State achievable benchmark was 94%. The top 4 States that contributed to the achievable benchmark are Colorado, Kansas, Mississippi, and Oregon.
- At the current annual rate of increase, this benchmark could not be attained overall for about 13 years. Whites, Blacks, Asians and Pacific Islanders (APIs), and AI/ANs could achieve the benchmark in 16, 7, 14, and 7 years, respectively, while Hispanics would need about 19 years. Men and women would need about 14 and 11 years, respectively.

### Patients With Tuberculosis Who Completed Treatment



#### • Groups With Disparities:

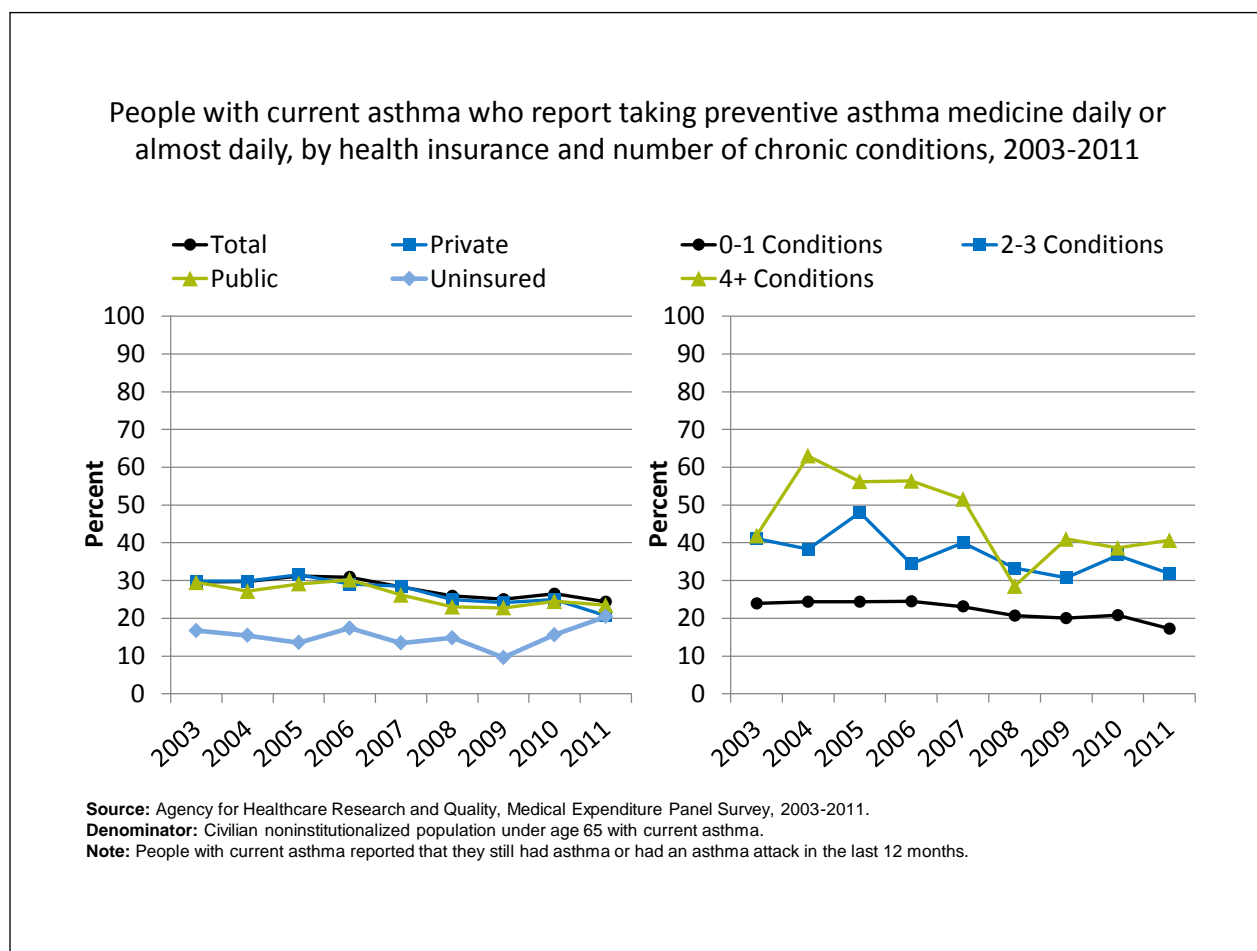
- There is considerable variation in completion of treatment for tuberculosis among API granular ethnicities and among Hispanic granular ethnicities.
- Most groups are far from the 2008 top 4 State achievable benchmark of 94%.

### Daily Asthma Medication

- Improving care for people with asthma can reduce the incidence of asthma attacks and hospitalizations.
- The National Asthma Education and Prevention Program develops and disseminates science-based guidelines for asthma diagnosis and management (NHLBI, 2007).
- The guidelines are built around four essential components of asthma management critical for effective long-term control:
  - Assessment and monitoring,
  - Control of factors contributing to symptom exacerbation,
  - Pharmacotherapy, and
  - Education for partnership in care.
- Some patients with asthma do not need medications.

- Patients with persistent asthma need daily long-term controller medication to prevent exacerbations and chronic symptoms.
- Preventive medications for people with persistent asthma include:
  - Inhaled corticosteroids,
  - Inhaled long-acting beta-2 agonists,
  - Cromolyn,
  - Theophylline, and
  - Leukotriene modifiers.

### People With Asthma Who Take Preventive Medicine Daily



- **Trends:**
  - From 2003 to 2011, the percentage of people with current asthma who reported taking preventive asthma medicine daily or almost daily decreased from 29.6% to 24.4%.

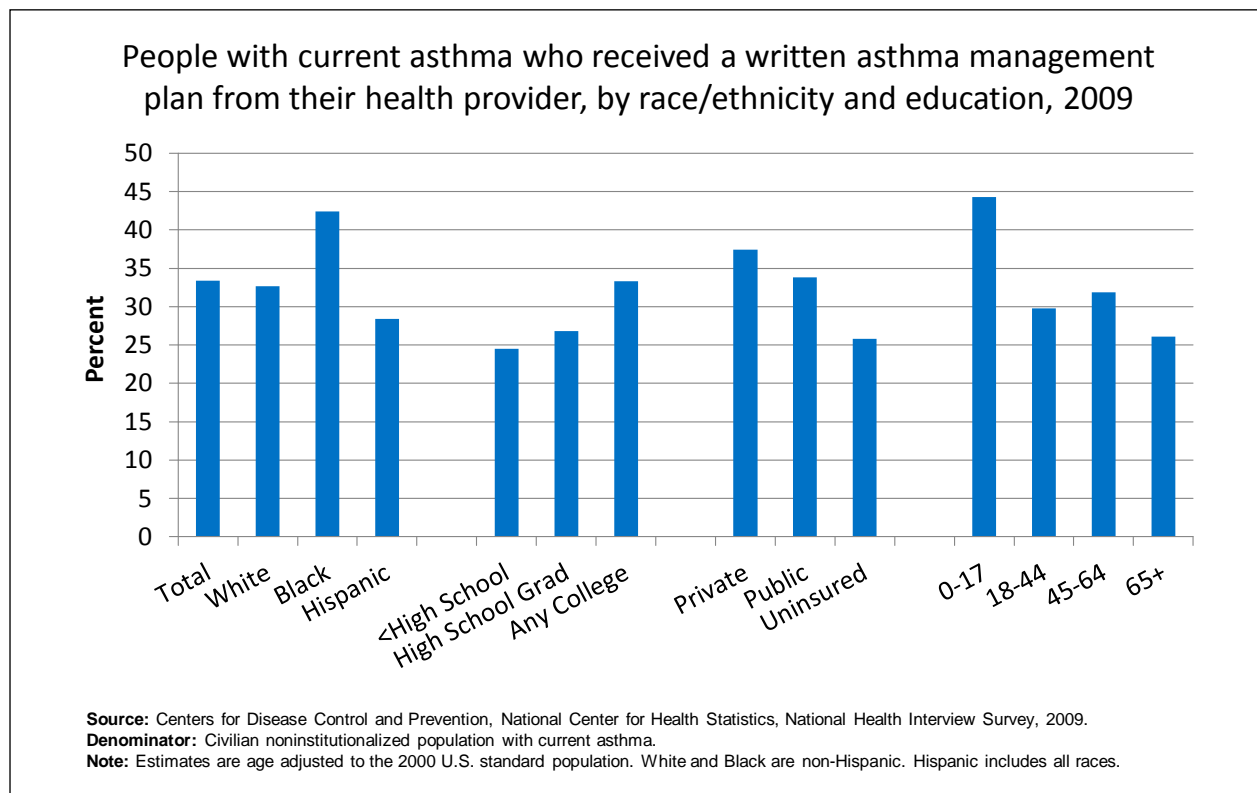
- **Groups With Disparities:**

- In 8 of 9 years, among people under age 65, those who were uninsured were less likely than people with any private health insurance to take daily preventive asthma medicine.
- In all years except 2008, among people under age 65, people with 2-3 chronic conditions and 4+ chronic conditions were more likely to take daily preventive asthma medicine compared with people with 0-1 chronic conditions.
- From 2003 to 2011, the percentage of people under age 65 with current asthma who reported taking preventive asthma medicine daily decreased:
  - ◆ From 29.8% to 20.7% for those with private insurance.
  - ◆ From 29.5% to 23.5% for those with public insurance.
  - ◆ From 23.9% to 17.3% for those with 0-1 chronic conditions.
  - ◆ From 41.1% to 31.9% for those with 2-3 chronic conditions.

### Written Asthma Management Plans

- To effectively partner with asthma patients in their care, providers need to teach them about daily management and how to recognize and handle worsening asthma.
- Providers should develop written asthma management plans, especially for:
  - Patients with moderate or severe persistent asthma and
  - Patients with a history of severe exacerbation.

### People With Asthma Who Received a Written Asthma Management Plan



- **Overall Rate:**

- In 2009, only one-third of people with current asthma received a written asthma management plan from their provider.

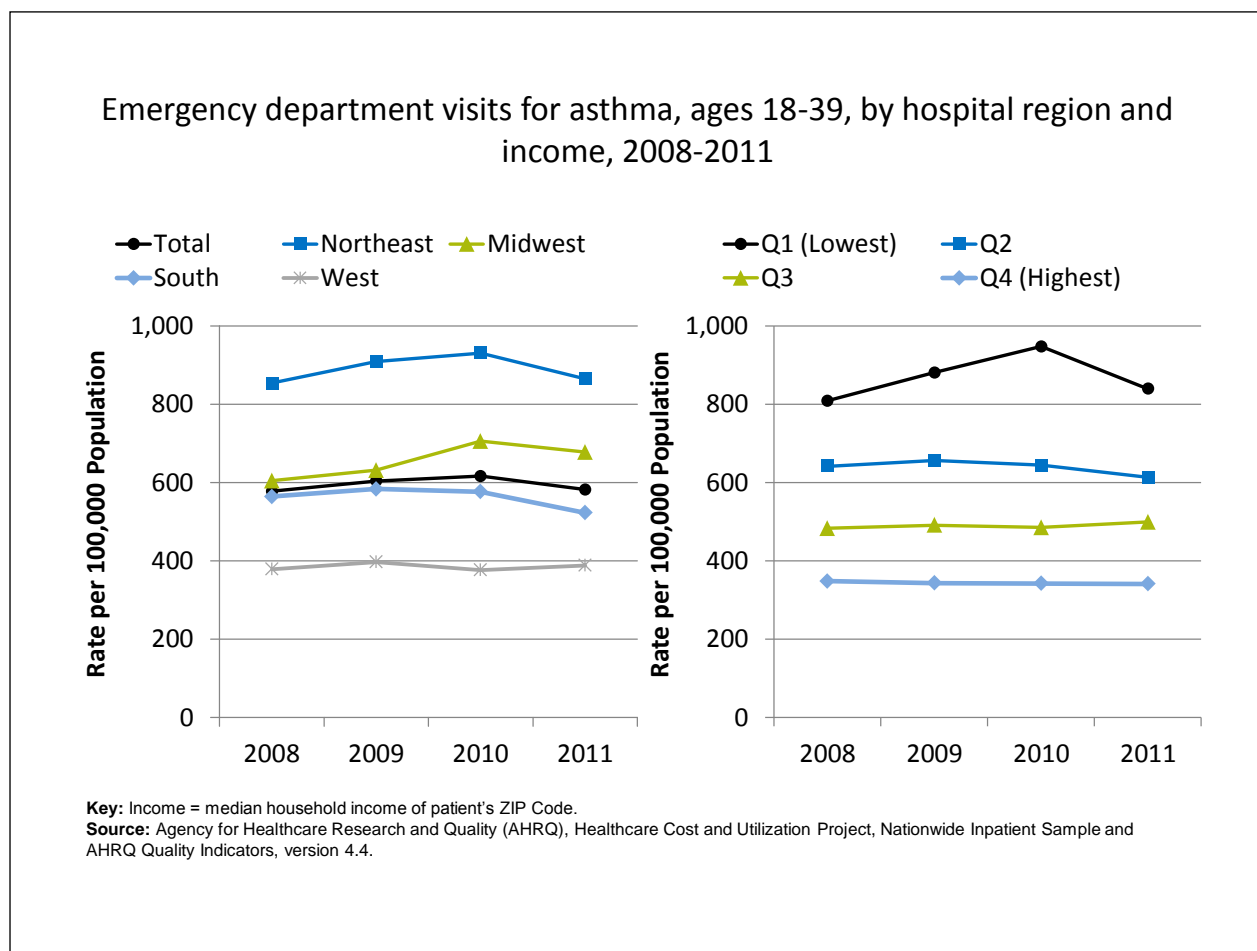
- **Groups With Disparities:**

- In 2009, Blacks were more likely than Whites to receive a written asthma management plan.
- In 2009, people with less than a high school education were less likely than those with any college education to receive a written asthma management plan.
- In 2009, people without insurance were less likely than people with private insurance to receive a written asthma management plan.
- In 2009, children ages 0-17 were more likely than adults ages 18-44 to receive a written asthma management plan from their provider.

## **Potentially Avoidable Emergency Department Visits**

- The burden of asthma in the United States is high:
  - 2 million emergency department (ED) visits
  - 504,000 hospitalizations
  - 13.6 million physician office visits
  - More than 4,200 deaths
  - About \$15 billion in direct medical costs
- Asthma is difficult to manage and is associated with disparities in health outcomes, poor treatment adherence, and high health care costs.
- Improving care delivery is important to advance patient outcomes, avoid ED visits and hospitalizations, and reduce health care costs (Tapp, et al., 2011).
- Care coordination for asthma usually involves practice-based approaches:
  - The care provider identifies and refers families to a care coordination program in the medical care facility.
  - A more effective approach is to place care coordinators in the community as a bridge between families and health care providers:
  - They can learn and better understand the contextual factors and issues that affect families, and
  - They can identify tailored support and services for optimal health care outcomes for asthma patients (Findley, et al., 2011).

## Emergency Department Visits for Asthma



- Trends:**

- From 2008 to 2011, rates of ED visits for asthma were highest in the Northeast and lowest in the West. In 2011, the rate of ED visits for asthma in the Northeast was 864.6 per 100,000 population, followed by the Midwest (677.9 per 100,000 population), South (522.6 per 100,000 population), and West (388.4 per 100,000 population).

- Groups With Disparities:**

- In all years, adults with the highest income were significantly less likely than all other income groups to have an ED visit for asthma.
- For more information on care coordination related to ED visits for asthma, go to <http://www.ahrq.gov/research/findings/nhqrdr/2014chartbooks/carecoordination/2014nhqdr-care.pdf>.

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