



# 2014 National Healthcare Quality and Disparities Report

## CHARTBOOK ON CARE COORDINATION



Agency for Healthcare Research and Quality  
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# 2014 NATIONAL HEALTHCARE QUALITY AND DISPARITIES REPORT CHARTBOOK ON CARE COORDINATION

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## CARE COORDINATION

### National Healthcare Quality and Disparities Report

This Care Coordination 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; information on individual measures will still be available through chartbooks posted on the Web (<http://www.ahrq.gov/research/findings/nhqdr/2014chartbooks/>).

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. Care coordination is one of these NQS priorities and the topic of this chartbook.

## 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.

## Chartbooks Organized Around Priorities of the National Quality Strategy

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

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

### National Quality Strategy Priority 3



Priority 3: Promoting effective communication and coordination of care

LONG-TERM GOALS

1. Improve the quality of care transitions and communications across care settings.
2. Improve the quality of life for patients with chronic illness and disability by following a current care plan that anticipates and addresses pain and symptom management, psychosocial needs, and functional status.
3. Establish shared accountability and integration of communities and health care systems to improve quality of care and reduce health disparities.




When all of a patient's health care providers coordinate their efforts, it helps ensure that the patient receives appropriate care and support, when and how the patient needs and wants it. Effective care coordination models, such as patient-centered medical homes, have begun to show that they can deliver better quality care at lower costs in settings that range from small physician practices to large hospital centers.

## Chartbook on Care Coordination

- This chartbook includes:
  - Summary of trends across measures of Care Coordination from the QDR
  - Figures illustrating select measures of Care Coordination
- [Introduction and Methods](#) contains information about methods used in the chartbook.
- Appendixes include information about measures and data.
- A Data Query tool (<http://nhqrnet.ahrq.gov/inhqrdr/data/query>) provides access to all data tables.

### Trends in Care Coordination Measures

- Few Care Coordination measures can be tracked over time.
- One Care Coordination measure improved quickly, defined as an average annual rate of change greater than 10% per year:
  - Hospital patients with heart failure who were given complete written discharge instructions
- No Care Coordination measures:
  - Showed worsening quality
  - Showed elimination or widening of disparities

### Care Coordination

- The vision is health care providers, patients, and caregivers all working together to “ensure that the patient gets the care and support he needs and wants, when and how he needs and wants it” (NQS, 2011).
- Conscious, patient-centered coordination of care improves the person's experience and leads to better long-term health outcomes, as demonstrated by fewer unnecessary hospitalizations, repeated tests, and conflicting prescriptions, as well as clearer discourse between providers and patients about the best course of treatment (NQS, 2013).

### Provider Communication and Care Coordination

- Six essential elements of provider-patient communication include:
  - Having open discussion,
  - Gathering information,
  - Understanding the patient’s perspective,
  - Sharing information,
  - Reaching agreement on problems and plans, and
  - Providing closure (Dean, et al., 2014).

## Measures of Care Coordination

- In addition to summarizing information on care coordination from the QDR, this chartbook tracks individual measures of care coordination, overall and for populations defined by age, race, ethnicity, income, education, insurance, and number of chronic conditions.
- Measures of Care Coordination include:
  - Transitions of care
  - Preventable emergency department visits
  - Potentially avoidable hospitalizations
  - Integration of medication information
  - Use of electronic health records

## Transitions of Care

- Centers for Medicare & Medicaid Services (CMS) defines a transition of care as:
  - The movement of a patient from one setting of care (hospital, ambulatory primary care practice, ambulatory specialty care practice, long-term care, home health, rehabilitation facility) to another.
  - These transitions place patients at heightened risk of adverse events. Important information can be lost or miscommunicated as responsibility is given to new parties.
  - Unsafe transitions of care from the hospital to the community are common and frequently associated with postdischarge adverse events (Forster, et al., 2003).

## Measures of Transitions of Care

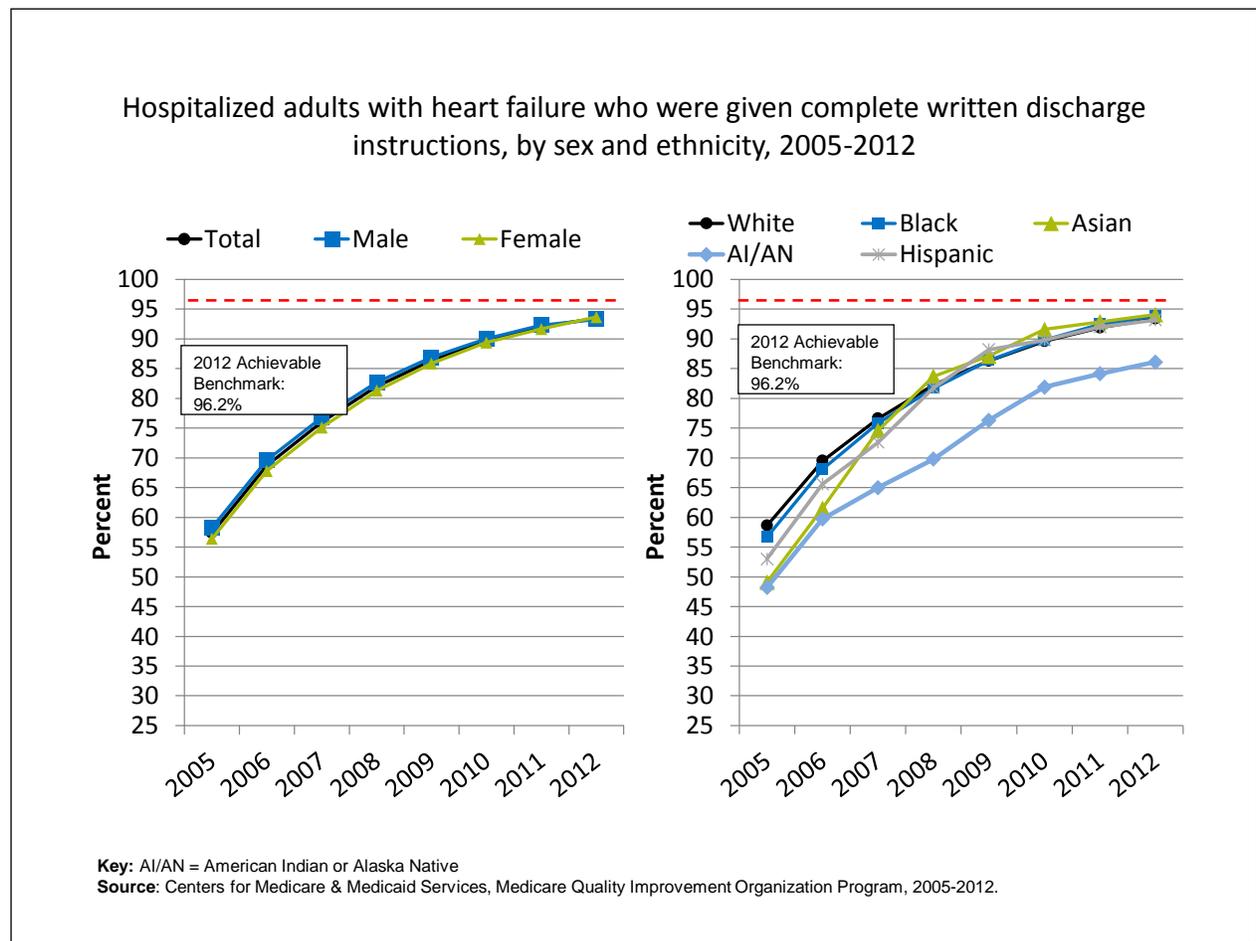
Measures reported in this section include:

- Hospitalized adult patients with heart failure who were given complete written discharge instructions.
- Median hospital 30-day risk standardized readmission rate or certain conditions.
- Median hospital 30-day risk standardized readmission rate.

### Management: Complete Written Discharge Instructions

- Effective care coordination begins with ensuring that accurate clinical information is available to support medical decisions by patients and providers.
- A common transition of care is discharge from the hospital.
- A successful transition depends on whether hospitals have adequately educated patients about key elements of care such as diagnosis and followup plans (Horwitz, et al., 2013).

### Complete Written Discharge Instructions

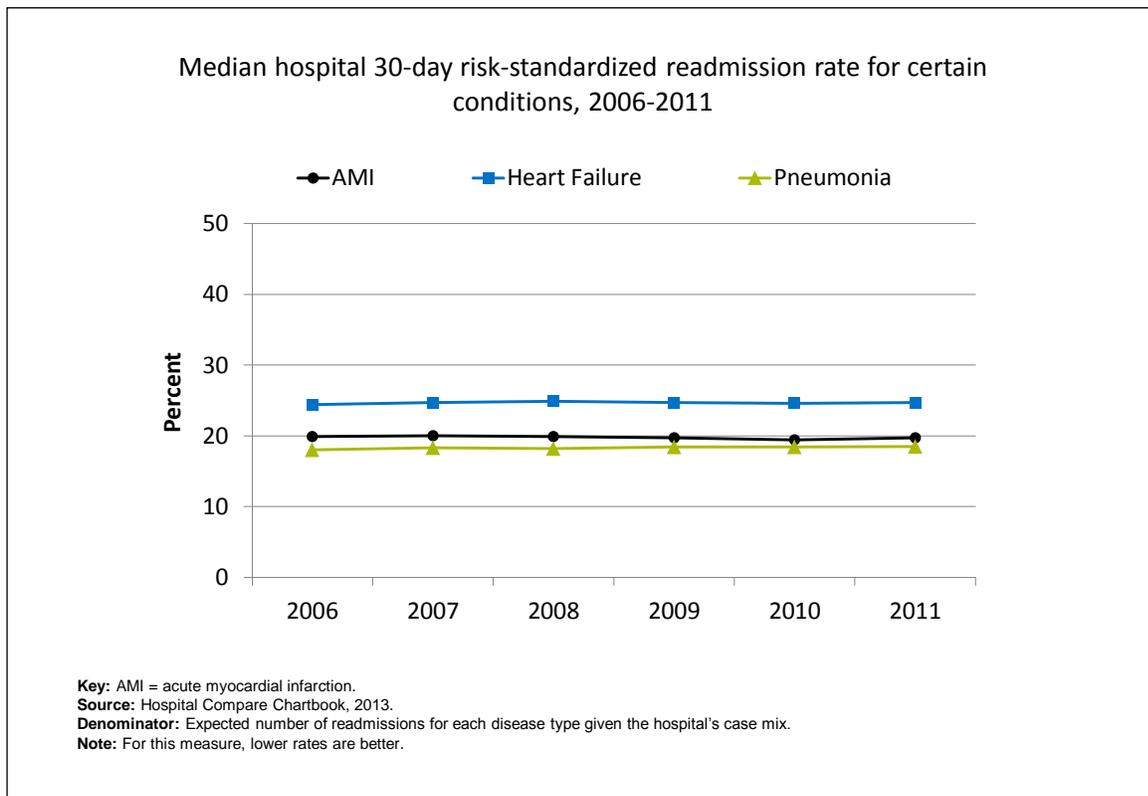


- From 2005 to 2012, the percentage of hospitalized adult patients with heart failure who were given complete written discharge instructions improved from 57.4% to 93.5%.
- Improvements were observed among both sexes and all racial and ethnic groups.
- There were no statistically significant differences by sex.
- In all years from 2005 to 2012, the percentage of hospitalized adult patients with heart failure who were given complete written discharge instructions was lower for American Indians and Alaska Natives (AI/ANs) than for Whites.
- The 2012 top 5 State achievable benchmark was 96%. At the current rates of increase, this benchmark could be attained overall and by both sexes in less than a year. All ethnic groups could attain the benchmark in less than a year except AI/ANs, who could achieve the benchmark in about 2 years.
- The top 5 States that contributed to the achievable benchmark are Illinois, Maine, Ohio, New Hampshire, and New Jersey.

## Readmissions

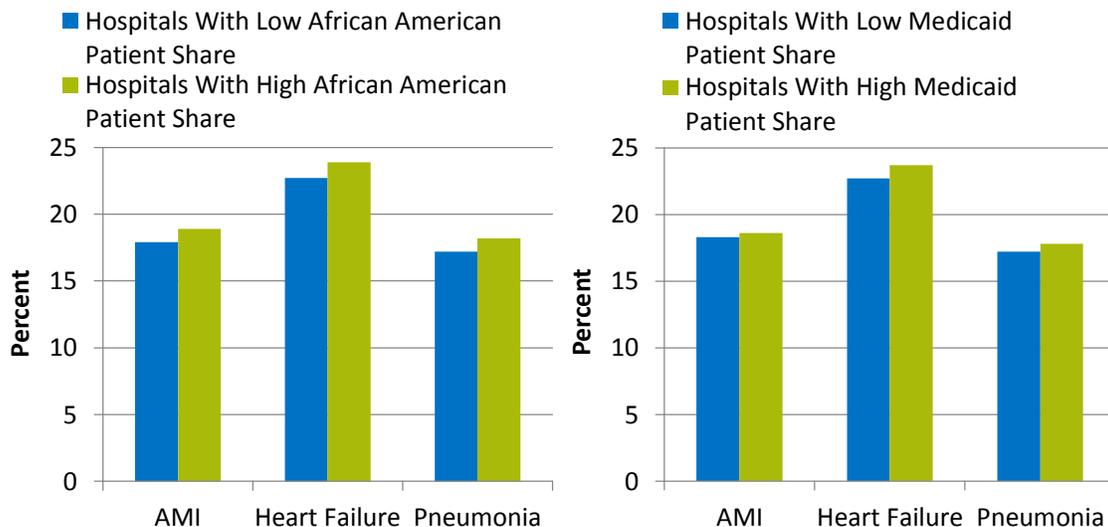
- Hospital readmission shortly after discharge is a marker of inpatient quality of care and a significant contributor to rising health care costs (Hasan, 2010).
- In 2013, approximately two-thirds of U.S. hospitals will be charged financial penalties from CMS because of excessively high 30-day readmission rates for acute myocardial infarction, heart failure, and pneumonia (Rau, 2013).

## Risk-Standardized Readmission Rate



- **Importance:** Although not all hospital readmissions are preventable, readmission rates may show whether a hospital is doing its best to deliver quality care, prevent complications, teach patients at discharge, and ensure that patients make a smooth transition to their home or another setting, such as a nursing home.
- **Overall Rate:** The median 30-day risk-standardized readmission rate in 2011 was 19.7% among patients with acute myocardial infarction (AMI), 24.7% among patients with heart failure, and 18.5% among patients with pneumonia.
- **Change Over Time:** The median 30-day risk-standardized readmission rates for AMI, heart failure, and pneumonia have remained stable from 2006 to 2011.

Median hospital 30-day risk-standardized readmission rate, by the percentage of patients who are African American and the percentage of patients who have Medicaid, 2009-2011



**Key:** AMI = acute myocardial infarction.  
**Source:** Hospital Compare Chartbook, 2013.  
**Denominator:** Expected number of readmissions for each disease type given the hospital's case mix.  
**Note:** For this measure, lower rates are better. For a hospital's percentage of patients who are African American, low is defined as 0% for all three measures. High is defined as  $\geq 22\%$  for AMI,  $\geq 23\%$  for heart failure, and  $\geq 22\%$  for pneumonia. For the percentage of the hospital's patients who are insured by Medicaid, low is defined as  $\leq 8\%$  for AMI,  $\leq 7\%$  for heart failure, and  $\leq 6\%$  for pneumonia. High is defined as  $\geq 30\%$  for AMI,  $\geq 29\%$  for heart failure, and  $\geq 29\%$  for pneumonia.

- **Importance:** Although not all hospital readmissions are preventable, readmission rates may show whether a hospital is doing its best to deliver quality care, prevent complications, teach patients at discharge, and ensure that patients make a smooth transition to their home or another setting, such as a nursing home.
- **Groups With Disparities:** The median 30-day risk-standardized readmission rates in 2009-2011 for acute myocardial infarction (AMI), heart failure, and pneumonia were similar between hospitals whose patients include a high percentage of African Americans and hospitals whose patients include a low percentage of African Americans. Hospitals whose patients include a high percentage of Medicaid recipients had similar median 30-day risk-standardized readmission rates for each of the three conditions compared with hospitals whose patients include a low percentage of Medicaid recipients.

### Preventable Emergency Department Visits

- Emergency department (ED) visits are costly.
- Because some visits are potentially avoidable, they may be indicative of:
  - Poor care management,
  - Inadequate access to care, or
  - Poor choices on the part of beneficiaries (Dowd, 2014).

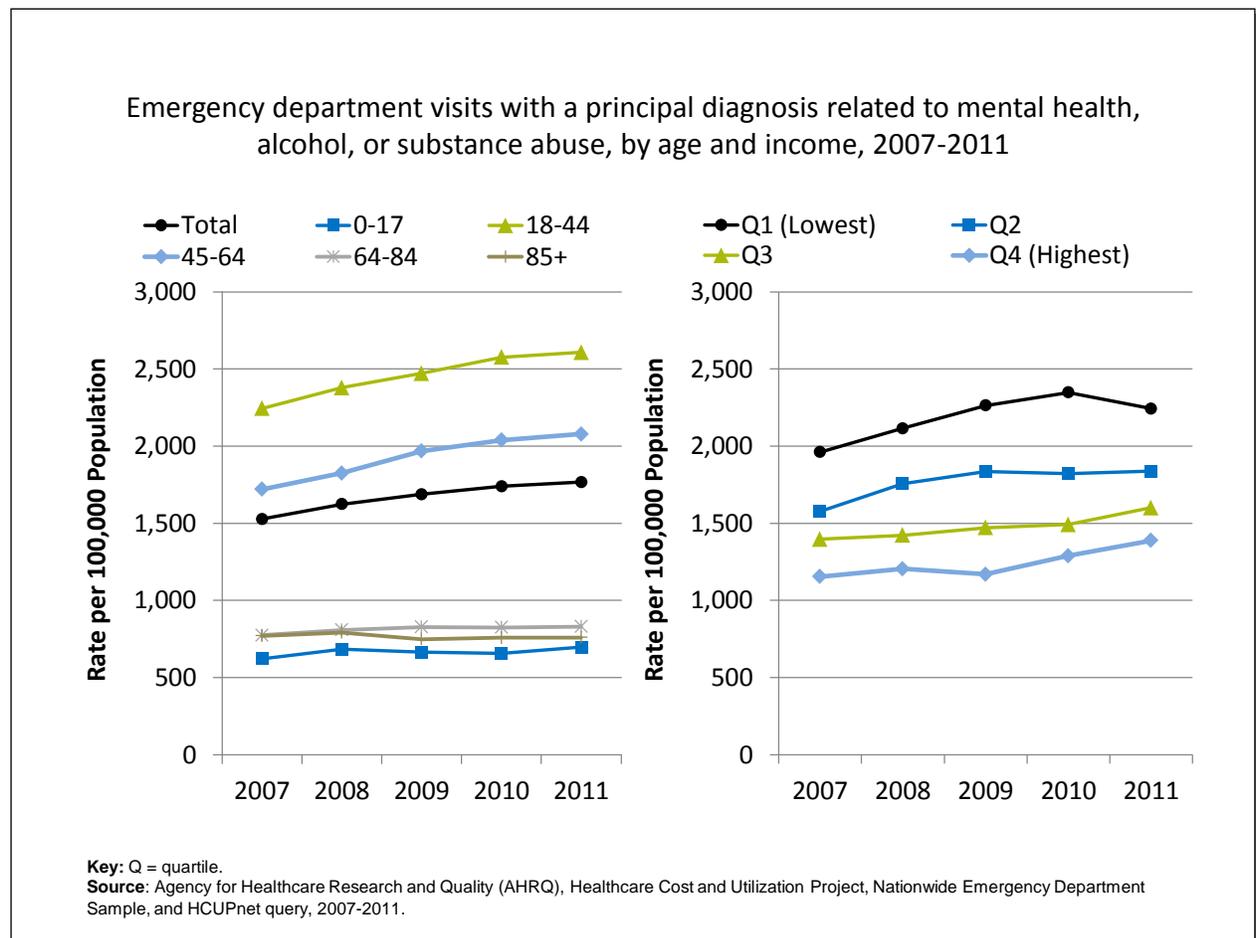
### Potentially Avoidable Emergency Department Visits

- ED visits for conditions that are preventable or treatable with appropriate primary care lower health system efficiency and raise costs (Enard & Ganelin, 2013).
- An estimated 13% to 27% of ED visits in the United States could be managed in physician offices, clinics, and urgent care centers, saving \$4.4 billion annually (Weinick, et al., 2010).

### Potentially Avoidable Emergency Department Visit Measures

- Measures of potentially avoidable ED visits include:
  - ED visits with a principal diagnosis related to mental health, alcohol, or substance abuse
  - ED visits with a principal diagnosis of dental conditions
  - ED visits for asthma, ages 18-39
  - ED visits for asthma, ages 2-17

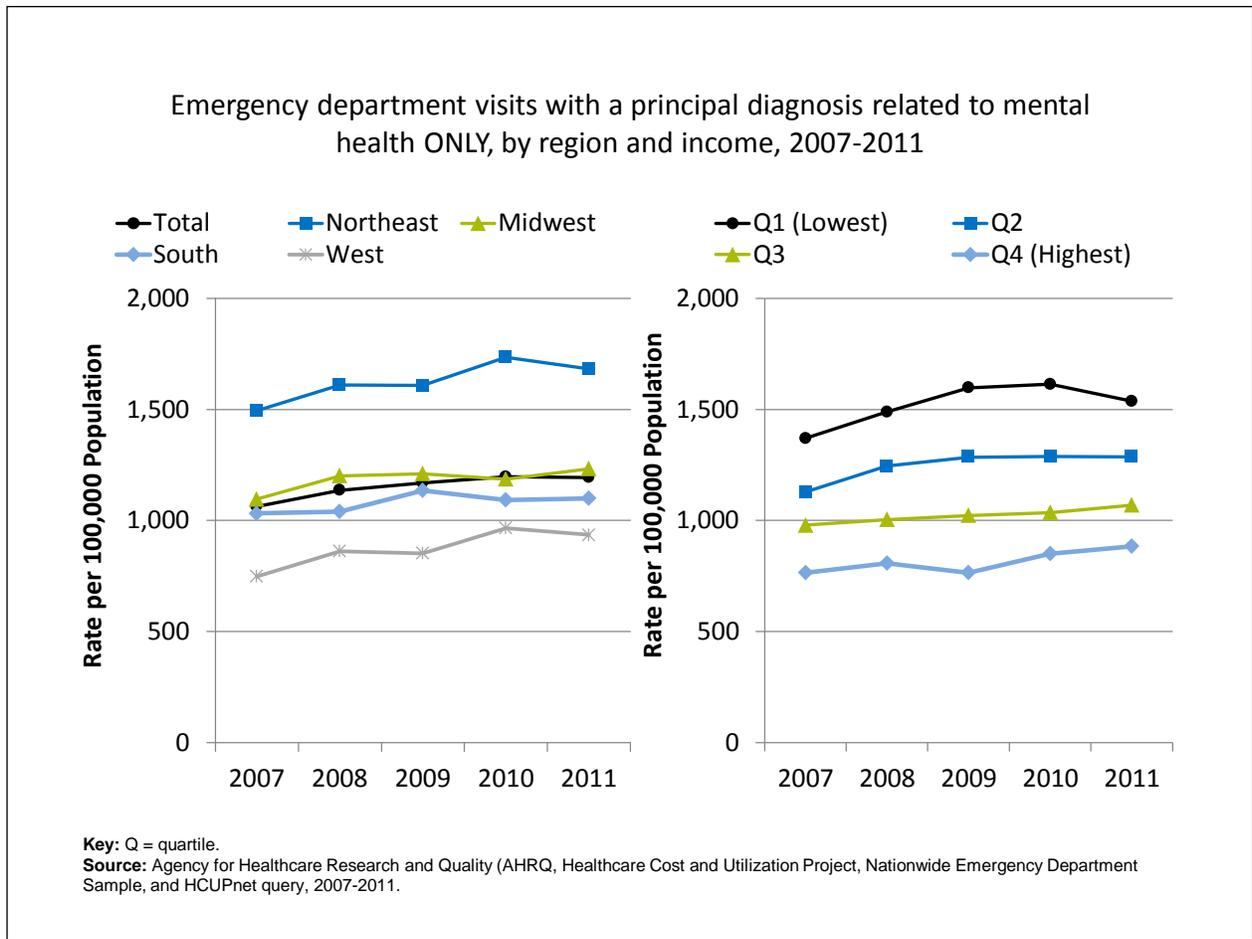
### Emergency Department Visits Related to Mental Health, Alcohol, or Substance Abuse



- From 2007-2011, 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.

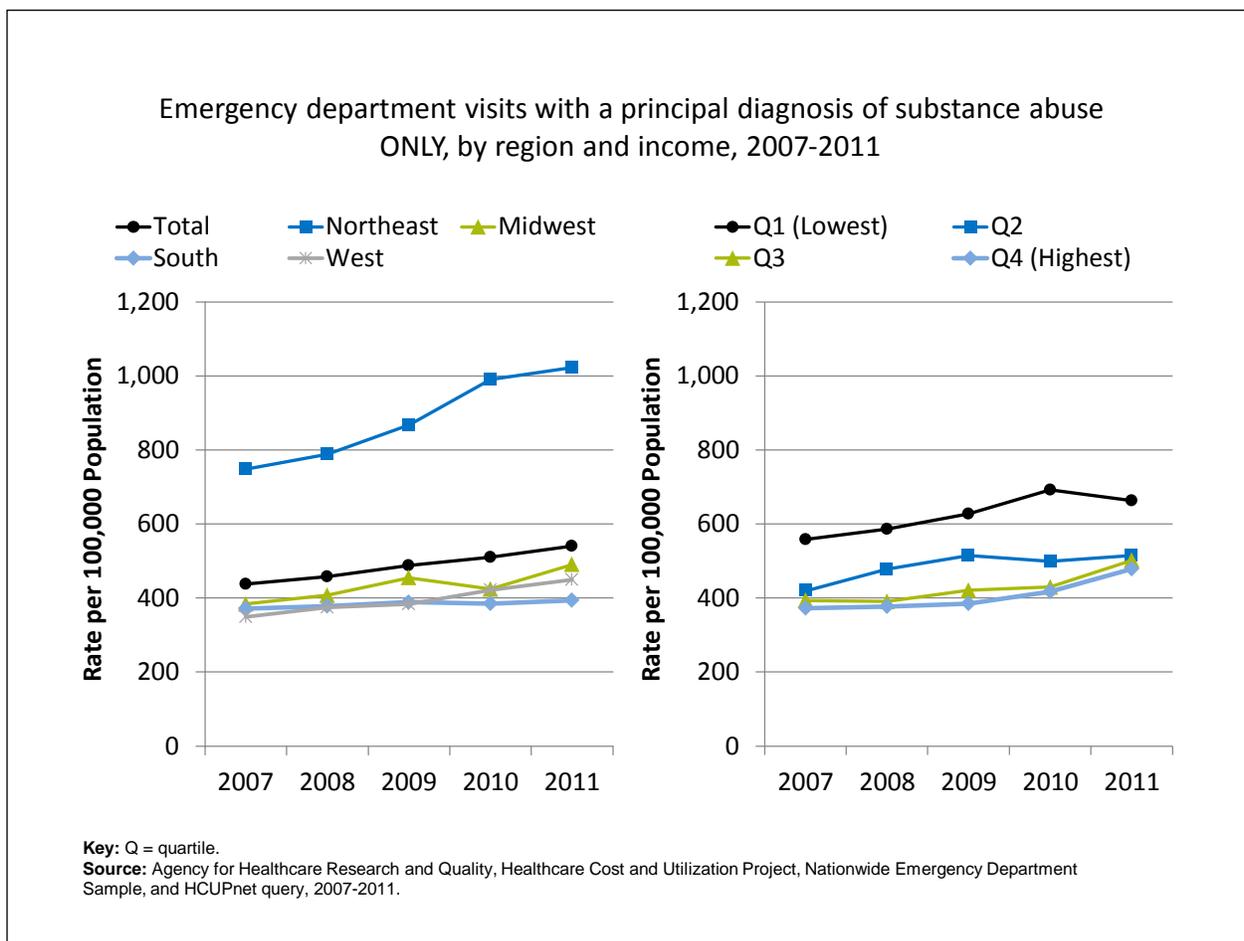
- In all years, individuals ages 0-17 and 65 and over were significantly less likely than individuals ages 18-44 to have an ED visit with a principal diagnosis related to mental health, alcohol, or substance abuse.
- In 2011, individuals in the highest income quartile were less likely to have an ED visit with a principal diagnosis related to mental health, alcohol, or substance abuse than individuals in all other income groups.

**Emergency Department Visits Related to Mental Health Only**



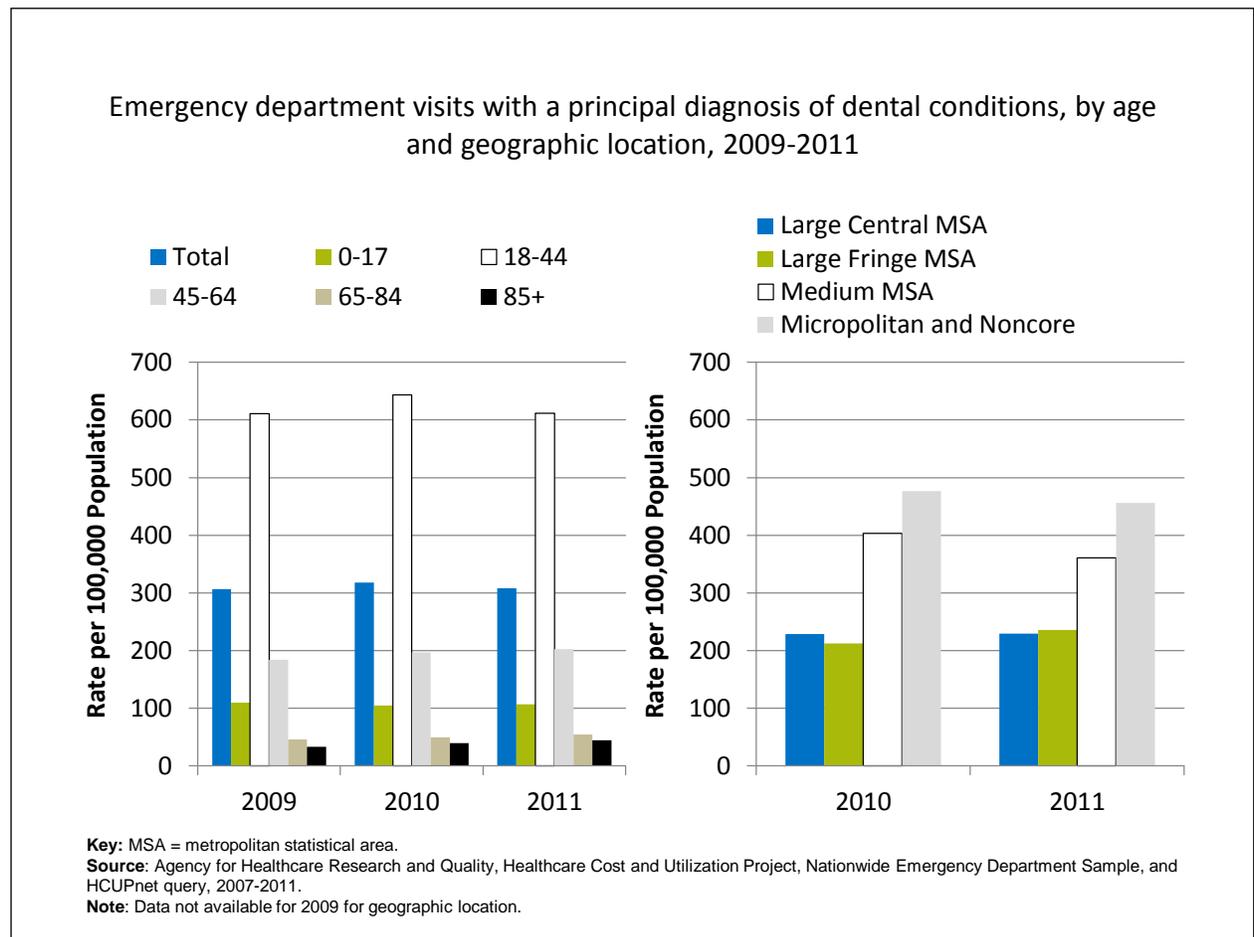
- From 2007 to 2011, the overall rate of ED visits with a principal diagnosis related to mental health increased from 1,063.5 to 1,193.1 per 100,000 population.
- In all years, individuals in the highest income quartile were less likely to have an ED visit with a principal diagnosis related to mental health than individuals in all other income groups.
- In 2011, the rate of ED visits with a principal diagnosis related to mental health was lowest for individuals in the West (934.4 per 100,000 population) and highest in the Northeast (1,681.5 per 100,000 population).
- In 4 of 5 years, residents of micropolitan areas were more likely than residents of large fringe metropolitan areas (suburbs) to have an ED visit with a principal diagnosis related to mental health (data not shown)

## Emergency Department Visits With a Diagnosis of Substance Abuse Only



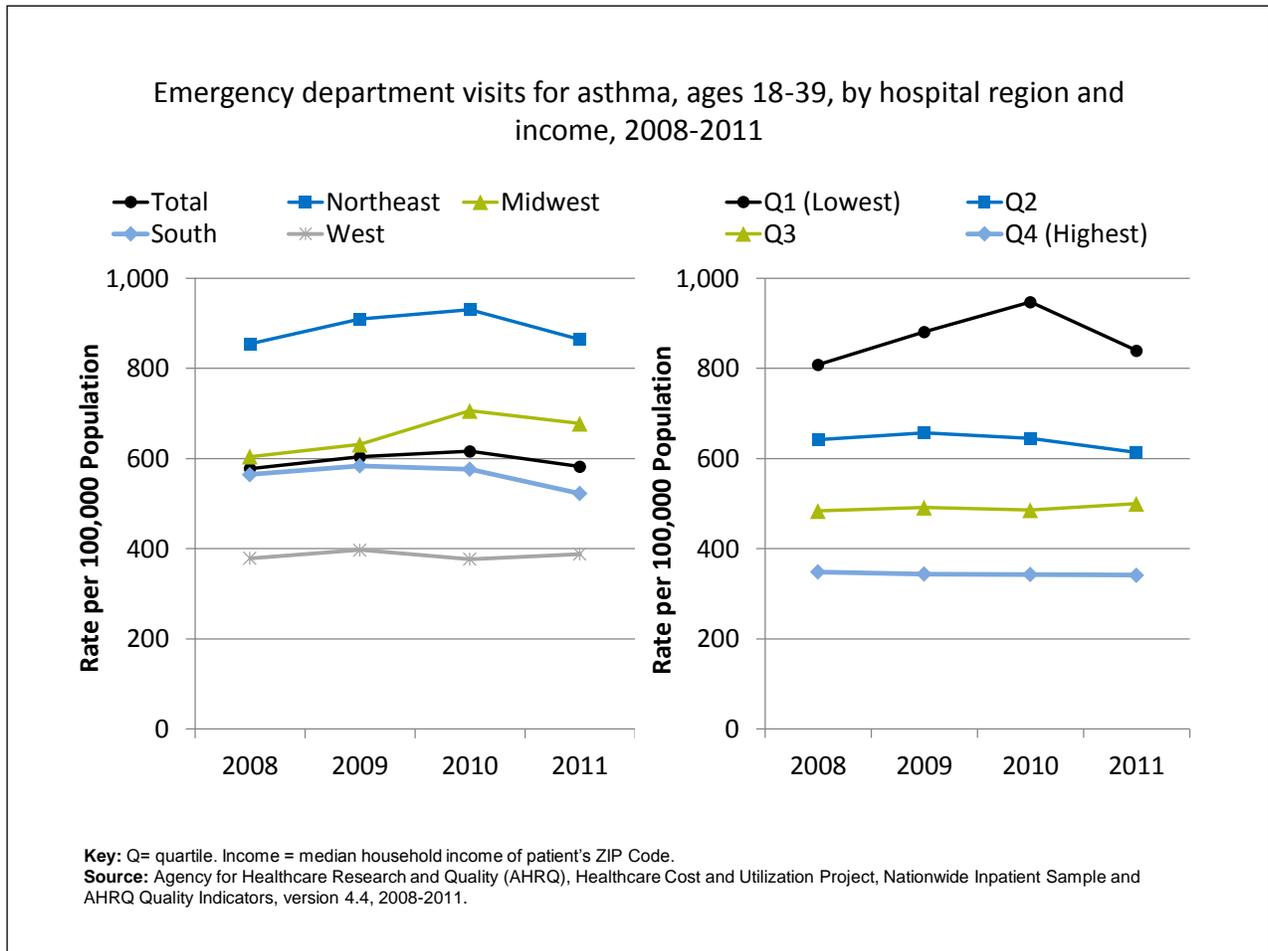
- From 2007 to 2011, the overall rate of ED visits with a principal diagnosis of substance abuse increased from 437.7 to 540.0 per 100,000 population.
- In all years, individuals in the highest income quartile were less likely to have an ED visit with a principal diagnosis of substance abuse than individuals in the first income quartile. In 4 of 5 years, individuals in the highest income quartile were less likely than individuals in the second quartile to have an ED visit with a principal diagnosis of substance abuse.
- In 2011, the rate of ED visits with a principal diagnosis of substance abuse was lowest for individuals in the South (393.8 per 100,000 population) and highest in the Northeast (1,022.7 per 100,000 population).
- In 4 of 5 years, residents of large central metropolitan areas were more likely to have an ED visit with a principal diagnosis of substance abuse than residents of large fringe metropolitan areas. Residents of noncore areas, however, were less likely to have an ED visit with a principal diagnosis of substance abuse than residents of large fringe metropolitan areas in 3 of 5 years.

### Emergency Department Visits for Dental Conditions

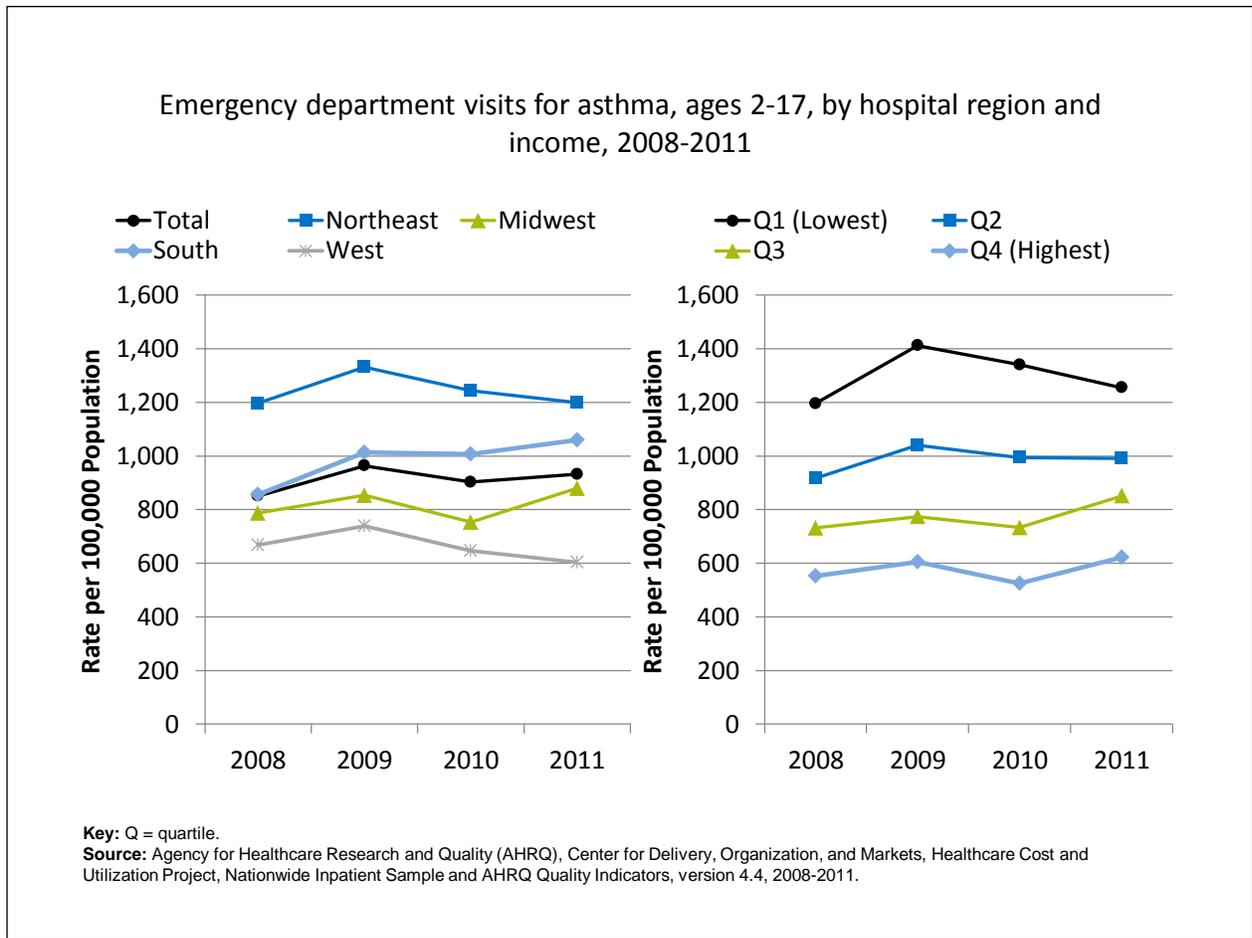


- In 2011, individuals ages 18-44 had the highest rate of ED visits with a principal diagnosis of dental conditions, followed by ages 45-64, 0-17, 65-84, and 85 and over (611.8, 202.8, 106.9, 54.2, and 44.8 per 100,000 population, respectively).
- In 2011, the rate of ED visits with a principal diagnosis of dental conditions was lower for residents of large fringe metropolitan areas than medium metropolitan, micropolitan, and noncore areas (236.1, 360.7, and 455.8 per 100,000 population, respectively).

### Emergency Department Visits for Asthma



- 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), the South (522.6 per 100,000 population), and the West (388.4 per 100,000 population).
- In all years, adults with the highest income were significantly less likely than all other income groups to have an ED visit for asthma.



- 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 1,199.5 per 100,000 population, followed by the South (1,058.7 per 100,000 population), the Midwest (879.1 per 100,000 population), and the West (603.6 per 100,000 population).
- In all years, children in households in the highest income quartile were significantly less likely than all other income groups to have an ED visit for asthma.

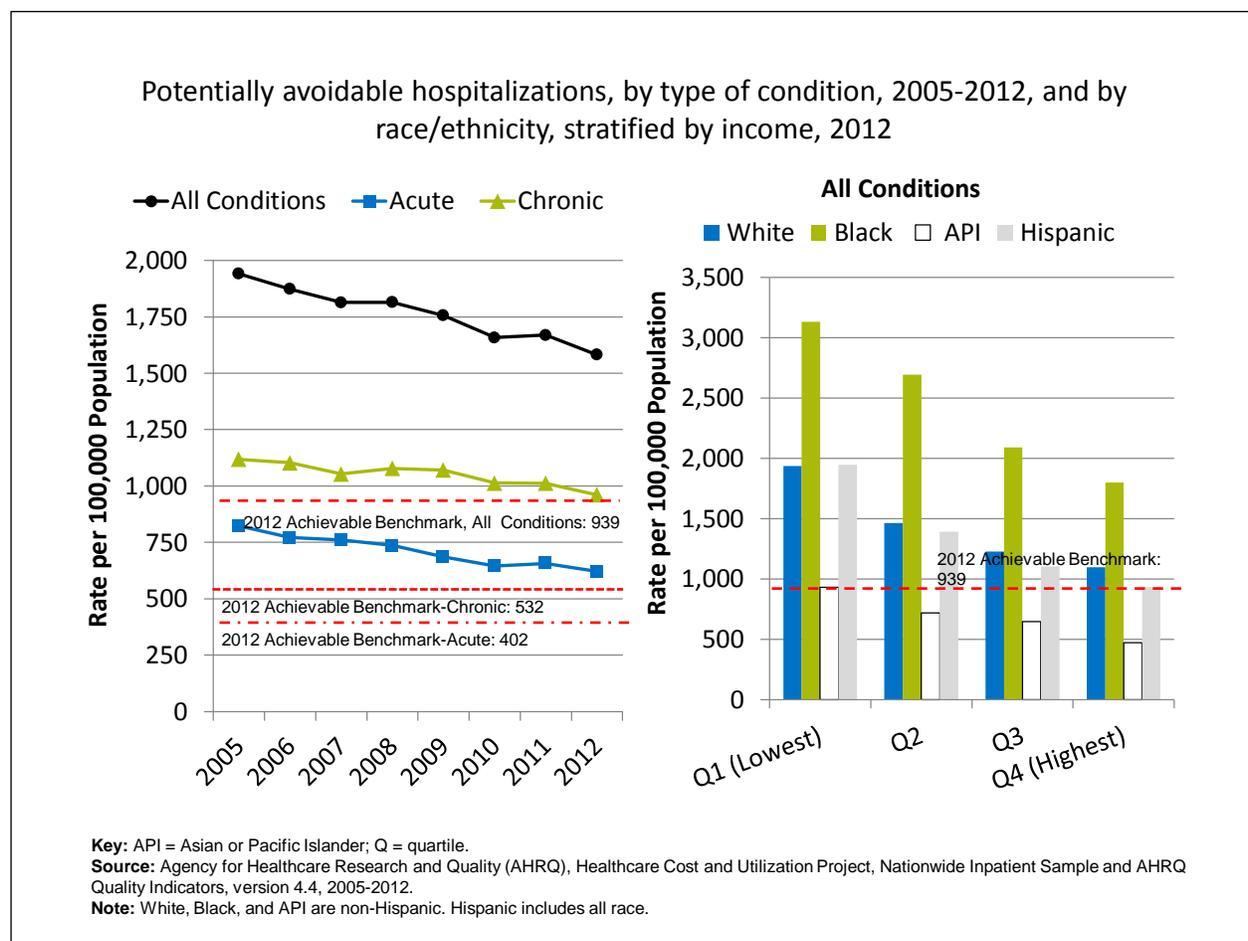
### Potentially Avoidable Hospitalizations

- Hospitalizations due to ambulatory care- sensitive conditions (ACSCs) such as hypertension and pneumonia should be largely prevented if ambulatory care is provided in a timely and effective manner.
- Evidence suggests that effective primary care is associated with lower ACSC hospitalization (also referred to as avoidable hospitalization) (Gao, et al., 2014).

## Potentially Avoidable Hospitalization Measures

- Measures of potentially avoidable hospitalization include:
  - Potentially avoidable hospitalizations for acute and chronic conditions
  - Admissions with perforated appendix
  - Admissions with hypertension

### Potentially Avoidable Hospitalizations

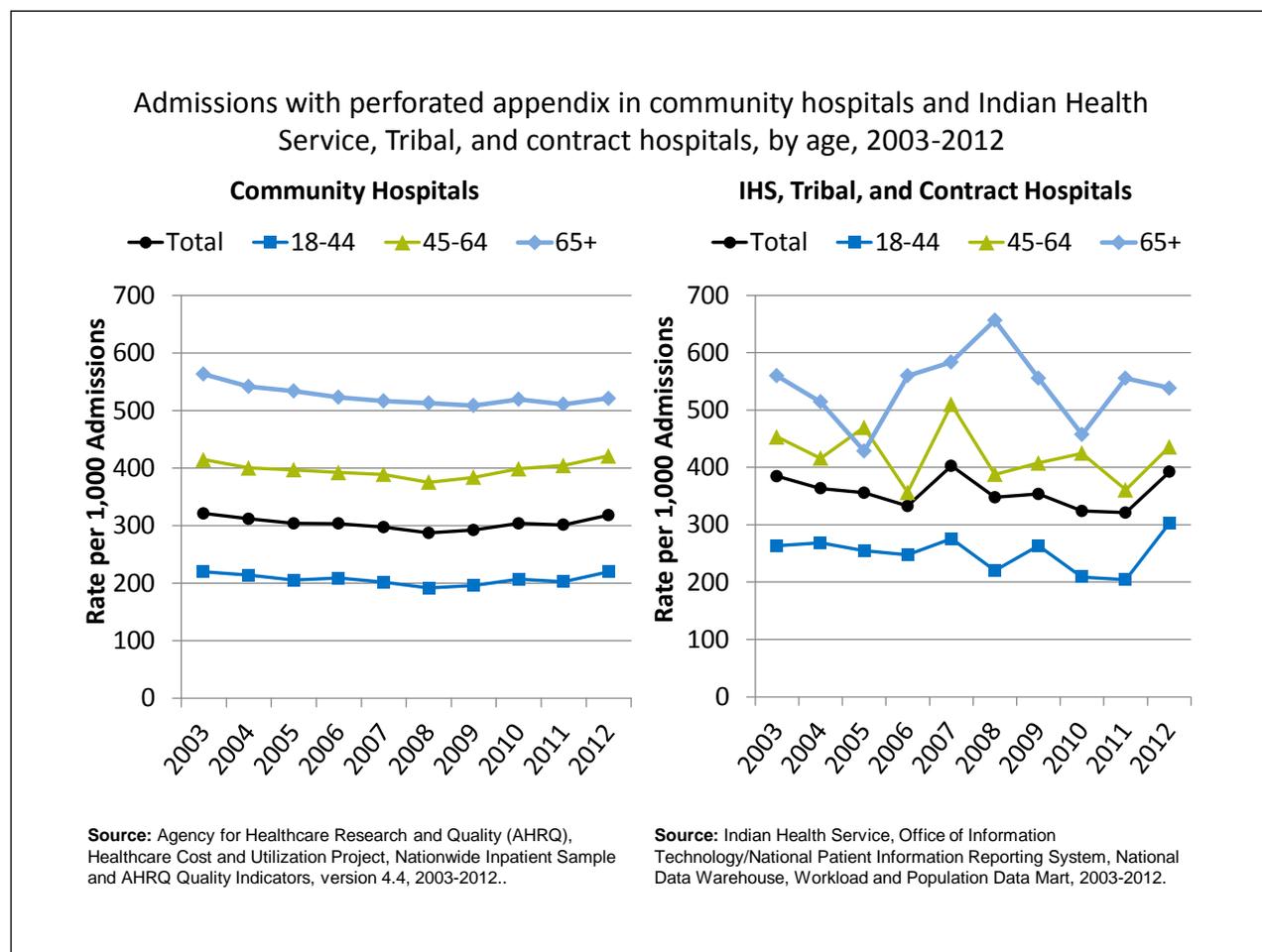


- From 2005 to 2012, the rate of potentially avoidable hospitalizations for all conditions fell from 1,941.2 to 1,582.4 per 100,000 population, the rate for acute conditions decreased from 822.9 to 621.5 per 100,000 population, and the rate for chronic conditions fell from 1,118.4 to 960.0 per 100,000 population.
- In 2012, in all income groups, rates of potentially avoidable hospitalizations for all conditions were higher for Blacks than Whites and lower for Asians and Pacific Islanders (APIs) than Whites.
- In all years, residents of noncore areas had significantly higher rates of potentially avoidable hospitalizations than residents of large fringe metropolitan areas for all conditions and acute conditions; for chronic conditions, it was 6 of 8 years. Residents of micropolitan areas had significantly higher rates of potentially avoidable hospitalizations than residents of large

fringe metropolitan areas for all conditions in 5 of 8 years and for acute conditions in 6 of 8 years (data not shown).

- In 2011, the top 4 State achievable benchmark for all potentially avoidable hospitalizations was 939 per 100,000 population. The overall achievable benchmark could not be attained for 13 years. Hispanics in the highest income quartile and APIs in all income groups have already achieved the benchmark.
- The top 4 State achievable benchmark for acute potentially avoidable hospitalizations was 402 per 100,000 population. The acute achievable benchmark could not be attained for 8 years.
- The top 4 State achievable benchmark for chronic potentially avoidable hospitalizations was 532 per 100,000 population. The chronic achievable benchmark could not be attained for 25 years.

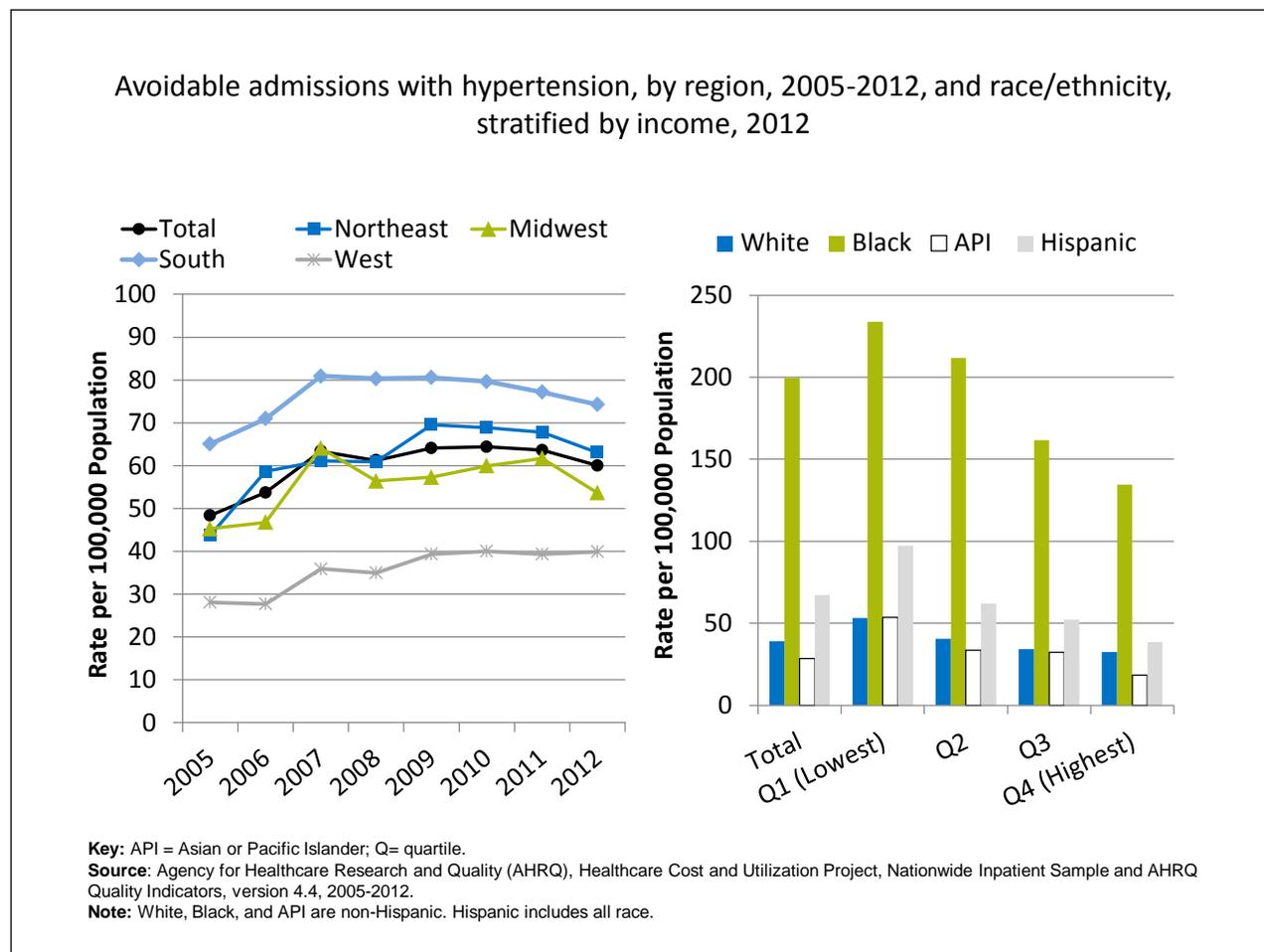
### Admissions With Perforated Appendix



- From 2003 to 2012, the rate of perforated appendixes was higher for those ages 45-64 and those age 65 and over than for those ages 18-44.
- In 2012, for Indian Health Service (IHS) facilities, the rates of perforated appendixes for ages 45-64 and age 65 and over were higher than for those ages 18-44 (436.1 and 538.5 per 1,000 admissions, respectively, compared with 302.2 per 1,000 admissions).

- In all years, rates of perforated appendixes for males were higher than for females at non-IHS hospitals ; rates were higher for males than for females in 9 of 10 years at IHS hospitals (data not shown).

### Avoidable Admissions With Hypertension



- From 2005 to 2012, the rates of avoidable admission for hypertension increased from 48.4 to 60.0 per 100,000 population.
- In 2012, rates of avoidable admission for hypertension were 74.3 per 100,000 population in the South, 63.1 per 100,000 population in the Northeast, 53.7 per 100,000 population in the Midwest, and 39.9 per 100,000 population in the West.
- Overall in 2012, rates of avoidable admission for hypertension were higher for Blacks and Hispanics than for Whites (199.6 and 67.2 per 100,000 population, respectively). Rates were lower for APIs compared with Whites (28.5 vs. 39.1 per 100,000 population).
- In 2012, in all income groups , rates of avoidable admission for hypertension were higher for Blacks than Whites. In the first, second, and third income quartiles, Hispanics had higher rates than Whites. In the fourth income quartile, APIs had a lower rate than Whites.
- From 2005 to 2012, the rate of admissions with hypertension got worse for residents of large fringe metropolitan, medium metropolitan, and small metropolitan areas (data not shown).

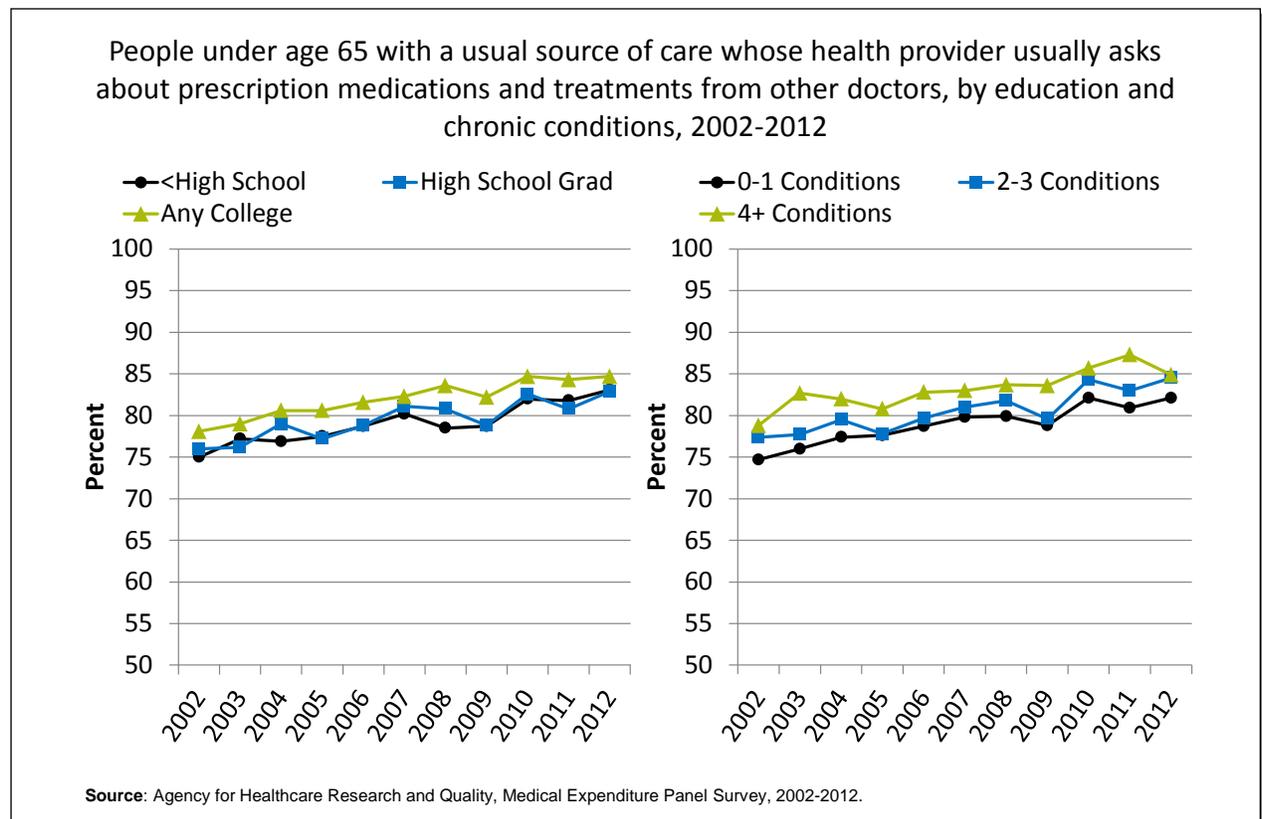
## Integration of Medication Information

- Communication between providers and between providers and patients, within and across care settings, has been identified as a source of medication error.
- Improving communication is a key aspect of decreasing medication errors and improving patient safety (Kitson, et al., 2013).
- Disparities in access to health information, services, and technology can result in less use of preventive services, poorer chronic disease management, higher hospitalization rates, and poorer reported health status (Berkman, et al., 2004).
- Patients need to understand their medication (indications, administration, adverse effects) to safely and effectively use it. But evidence shows that important medication information is given to patients in a haphazard way (Persell, 2013).

## Integration of Medication Information Measures

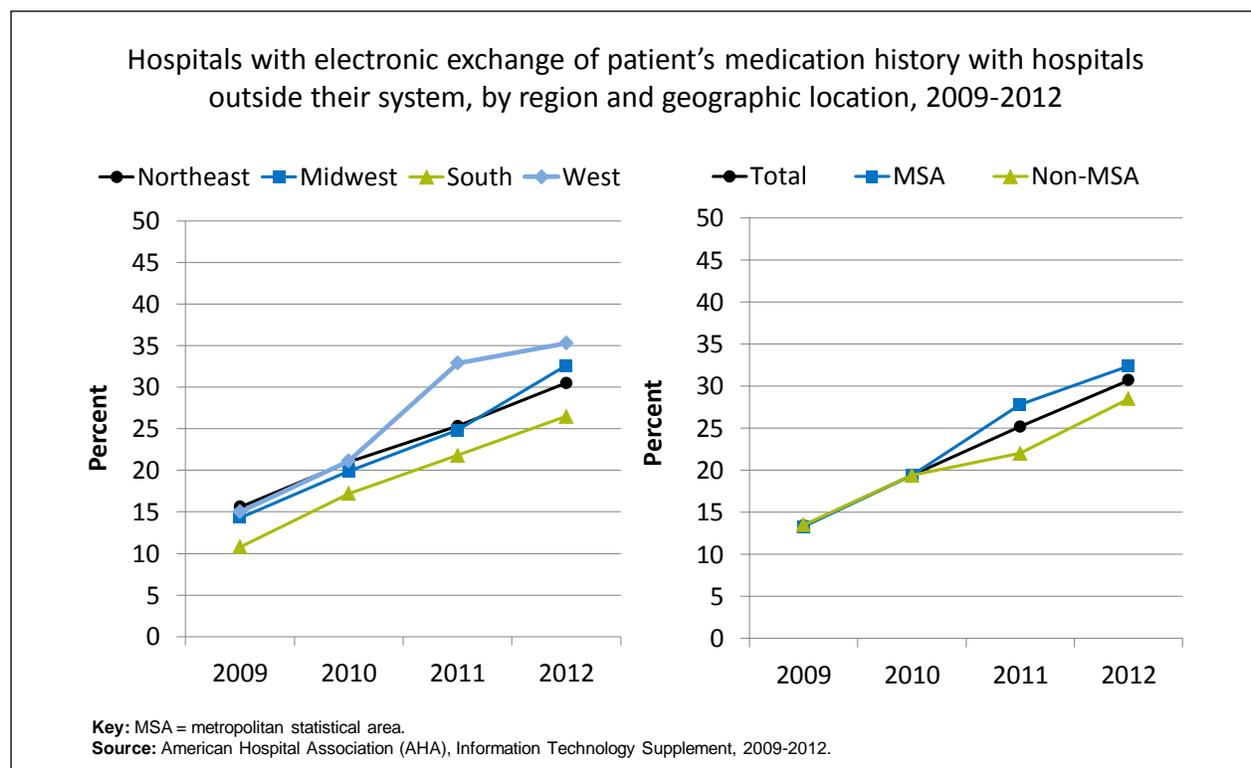
- Measures of integration of medication information include:
  - People under age 65 with a usual source of care whose health provider usually asks about prescription medications and treatments from other doctors
  - Hospitals with electronic exchange of patient medication history with hospitals outside their system
  - Hospitals with electronic exchange of patient medication history with ambulatory providers outside their system

## Providers Asking About Medications and Treatments From Other Doctors

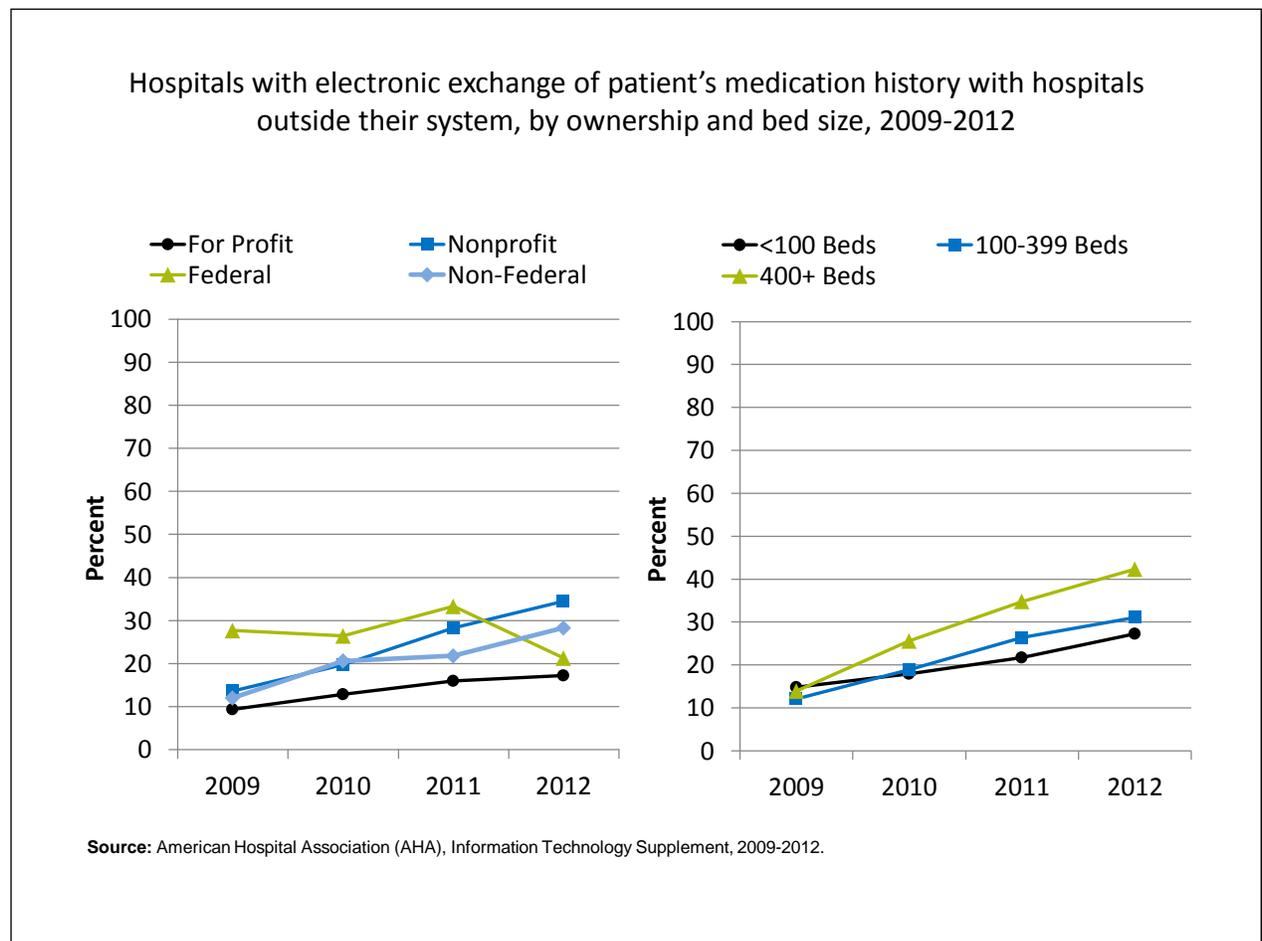


- From 2002 to 2011, the percentage of people with a usual source of care whose health provider usually asked about prescription medications and treatments from other doctors improved from 75.1% to 82.7%.
- In 9 of 11 years, people with 0-1 chronic conditions were less likely than people with four or more chronic conditions to be asked about prescription medications and treatments from other doctors.
- In 7 of 10 years, people with less than a high school education were less likely than people with any college to be asked about prescription medications and treatments from other doctors.

### Hospitals With Electronic Exchange of Patient Medication History With Other Hospitals and Providers

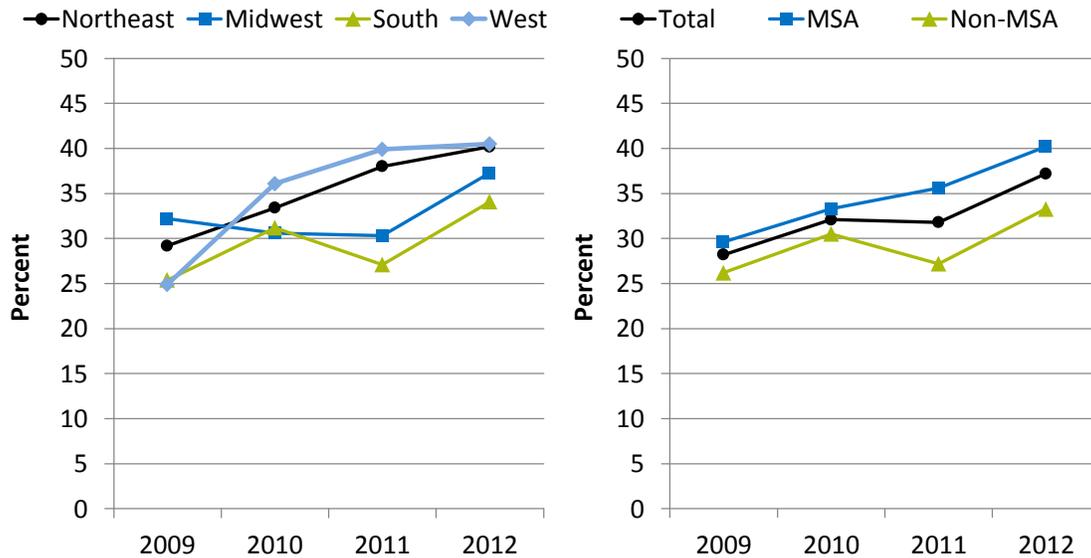


- In 2012, 30.7% of hospitals electronically exchanged patient information on medication history with hospitals outside their system, up from 13.4% in 2009.
- From 2009 to 2012, the percentage of hospitals that electronically exchange patient medication history with hospitals outside their system significantly increased for all regions by more than 50%.
- In 2012, hospitals in the West were most likely to have electronic exchange with hospitals outside their system, followed by the Midwest, Northeast, and South (35.3%, 32.6%, 30.5%, and 26.5%, respectively).
- From 2009 to 2012, the percentage of metropolitan hospitals that electronically exchanged patient medication history with hospitals outside their system significantly increased from 13.3% to 32.4%. The percentage of nonmetropolitan hospitals that electronically exchanged medication history increased from 13.5% to 28.5%.



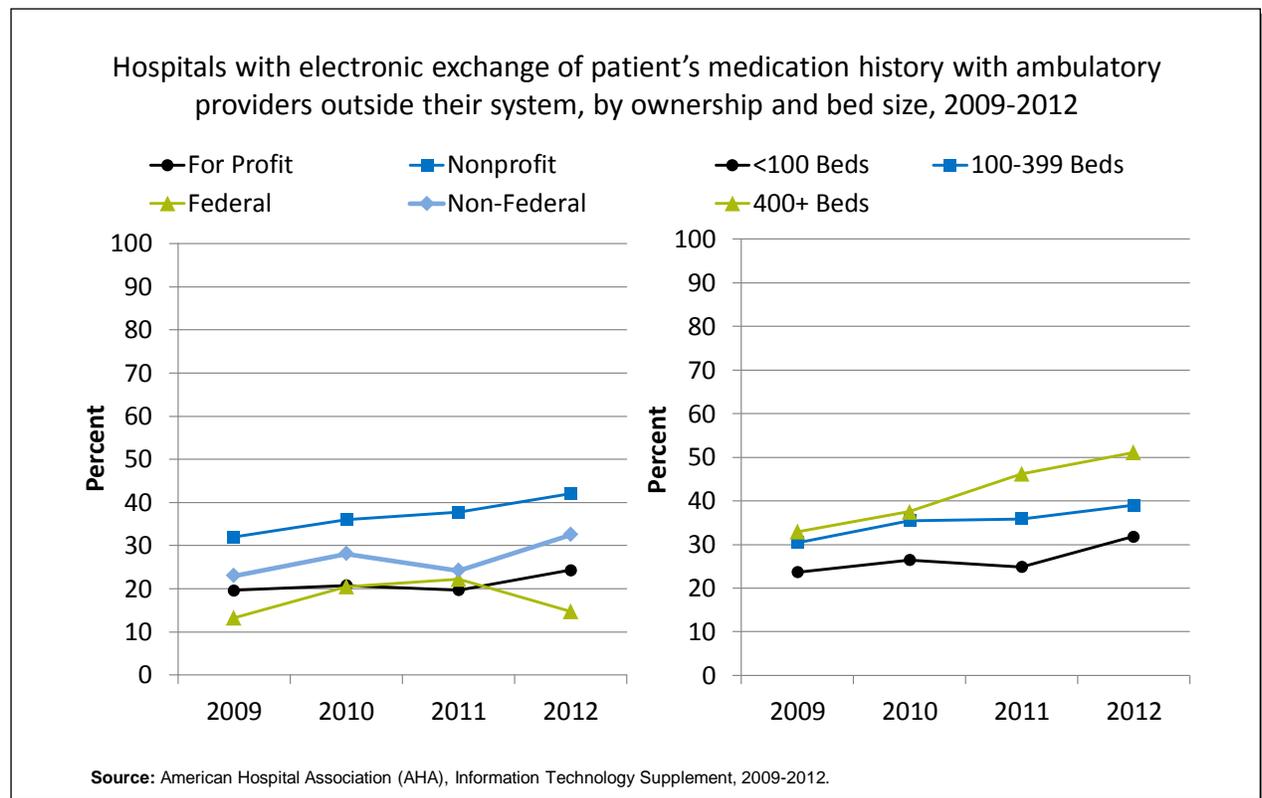
- In 2012, nonprofit hospitals were most likely to have electronic exchange with hospitals outside their system, followed by non-Federal, Federal, and for profit (investor owned) (34.5%, 28.3%, 21.3%, and 17.2%, respectively).
- In 2012, hospitals with <100 or 100-399 beds were less likely than large hospitals (400+ beds) to exchange information with hospitals outside their system.
- From 2009 to 2012, hospitals with 400 or more beds that electronically exchanged medication history with hospitals outside their system increased from 13.9% to 42.3%, hospitals with 100-399 beds increased from 12.1% to 31.1%, and hospitals with <100 beds increased from 14.8% to 27.3%.

Hospitals with electronic exchange of patient’s medication history with ambulatory providers outside their system, by region and geographic location, 2009-2012



Key: MSA = metropolitan statistical area.  
 Source: American Hospital Association (AHA), Information Technology Supplement, 2009-2012.

- In 2012, 37.2% of hospitals exchanged information with ambulatory providers outside their system, which was up from 28.2% in 2009.
- In 2012, hospitals in the West (40.5%) were the most likely to exchange information with ambulatory providers outside their system, followed by hospitals in the Northeast (40.2%), Midwest (37.3%), and South (34.1%).
- In 2012, hospitals in MSAs (40.2%) were more likely to exchange information with ambulatory providers outside their system than hospitals in non-MSAs (33.3%).



- In 2012, large hospitals also were more likely than medium and small hospitals (51.1%, 39.0%, and 31.8%, respectively) to have electronic exchange with ambulatory providers outside their system.
- In 2012, nonprofit hospitals (42.0%) were most likely to have electronic exchange with ambulatory providers outside their system, followed by non-Federal (32.5%), for profit (24.3%), and Federal (14.7%).
- In all years, not-for-profit hospitals were more likely to have electronic exchange with ambulatory providers outside their system than for-profit, Federal, and non-Federal hospitals

## Use of Electronic Health Records

- Electronic health records (EHRs) have the potential to improve the quality and safety of health care.

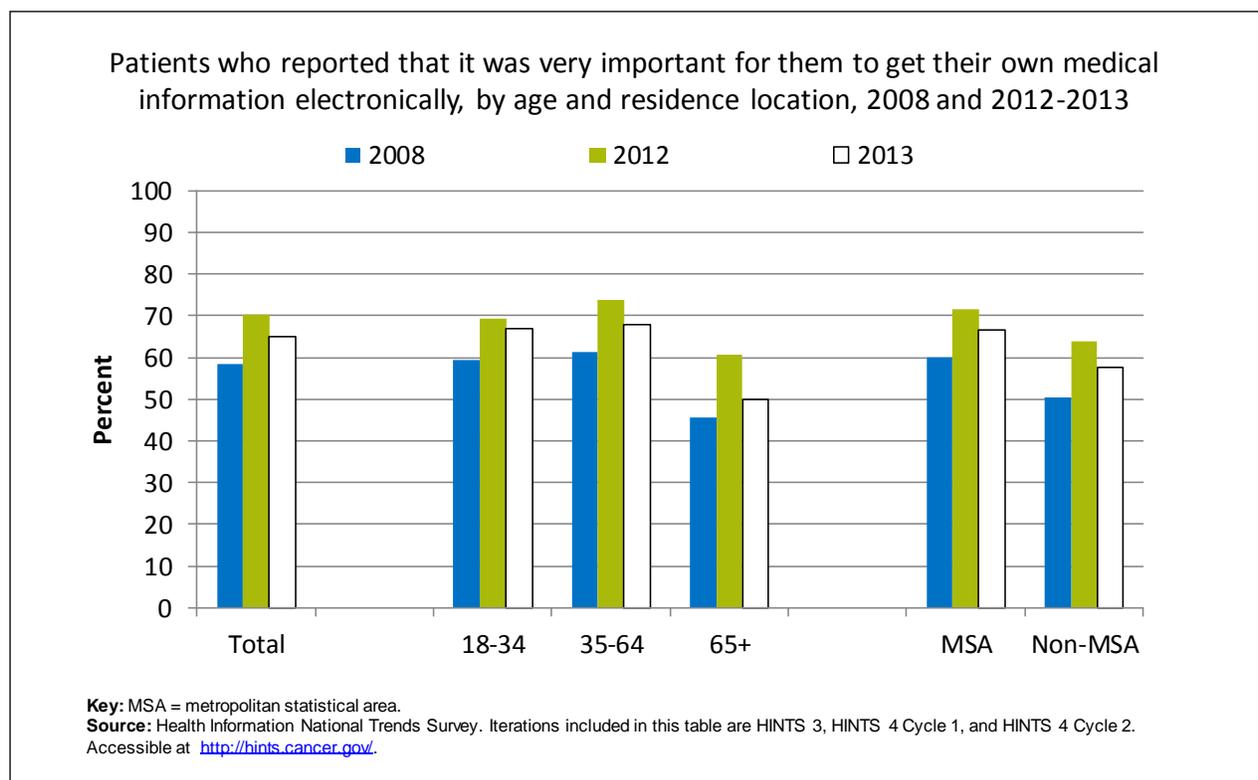
## Benefits of Electronic Health Records

- Evidence has shown that the adoption and effective use of health information technology can:
  - Help reduce medical errors and adverse events,
  - Enable better documentation and file organization,
  - Provide patients with information that assists their adherence to medication regimens and scheduled appointments, and
  - Assist doctors in tracking their treatment protocols (IOM, 2010).

## Electronic Health Record Measures

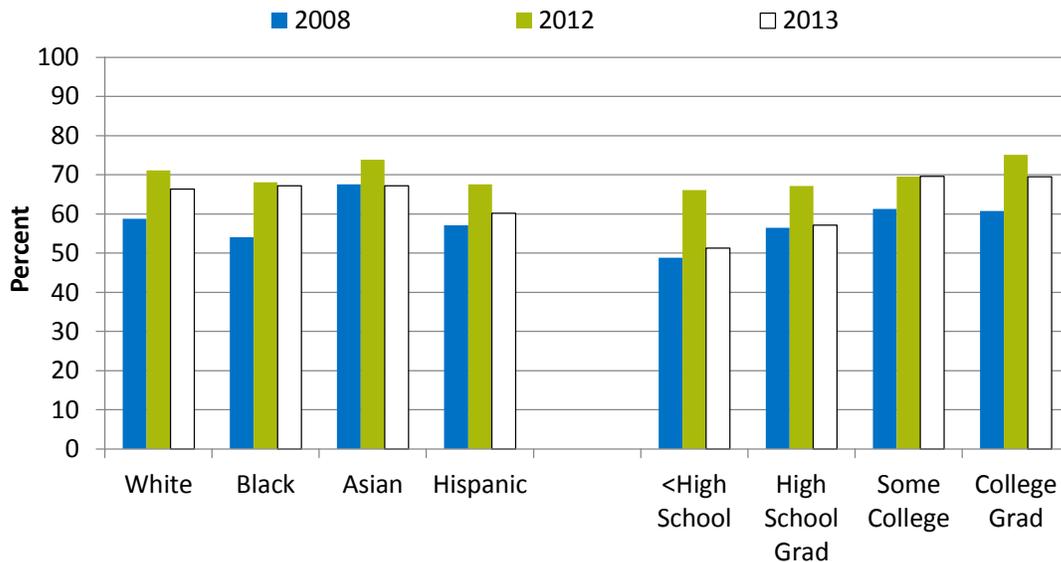
- Measures of the use of electronic health records include:
  - Patients who reported that it was very important for them to get their own medical information electronically
  - Patients who reported that it was very important that doctors and other health providers be able to share their medical information with other providers electronically
  - Hospitals with fully implemented electronic medical record system
  - Hospitals with computerized systems that allow for electronic clinical documentation
  - Hospitals with computerized systems that allow for results viewing
  - Hospitals with computerized systems that allow for decision support
  - Hospitals with computerized systems that allow for computerized provider order entry (CPOE)

### Patients Who Said It Was Important To Get Their Medical Information Electronically



- In 2013, 64.9% of patients reported that it was very important for them to get their own medical information electronically, a significant increase from 58.3% in 2008.
- In all 3 years, patients age 65 and over were less likely than patients ages 18-34 to report that it was very important for them to get their own medical information electronically.
- In all years, residents of nonmetropolitan areas were less likely than residents of metropolitan areas to report that it was very important for them to get their own medical information electronically.

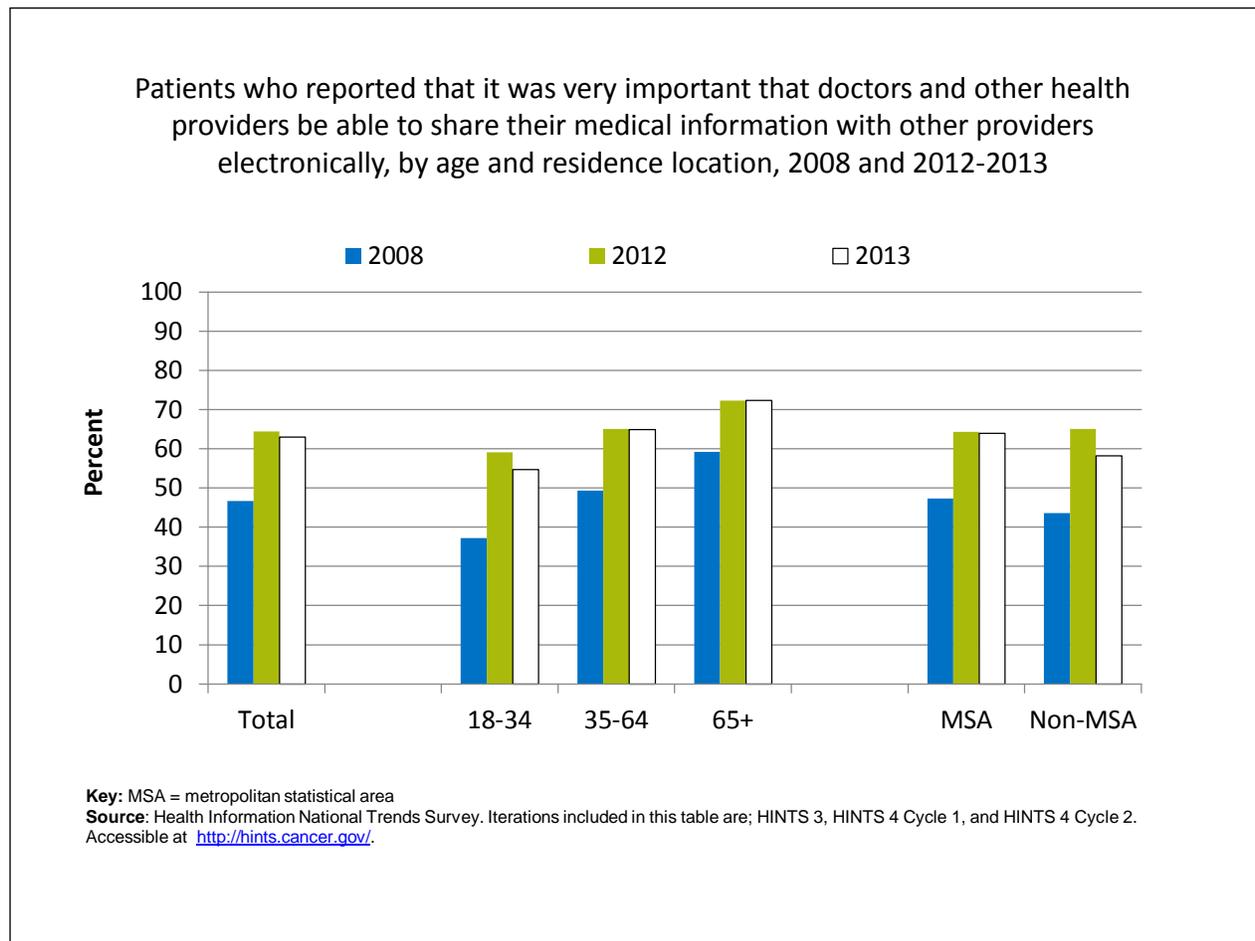
Patients who reported that it was very important for them to get their own medical information electronically, by ethnicity and education, 2008 and 2012-2013



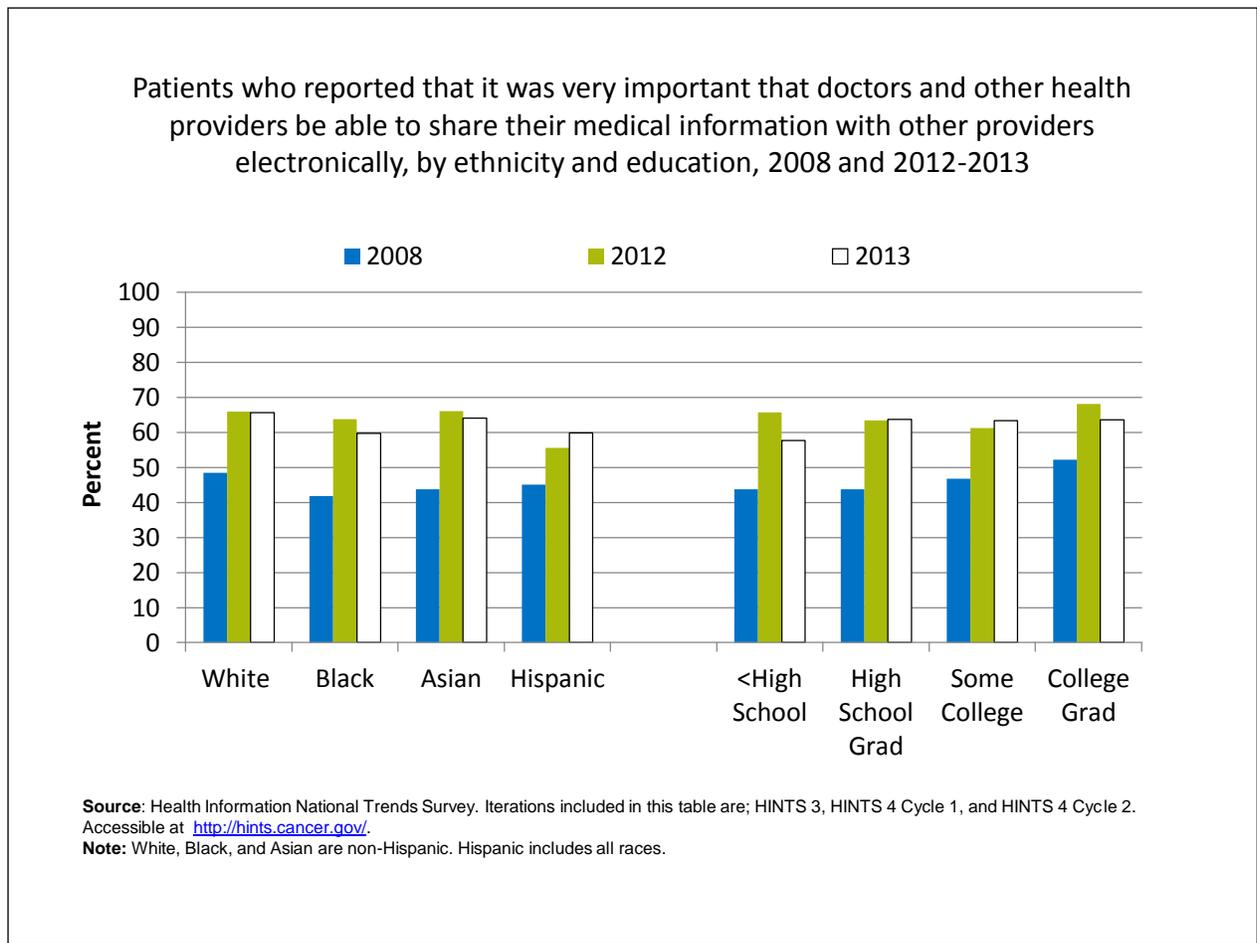
**Source:** Health Information National Trends Survey. Iterations included in this table are; HINTS 3, HINTS 4 Cycle 1, and HINTS 4 Cycle 2. Accessible at <http://hints.cancer.gov/>.  
**Note:** White, Black, and Asian are non-Hispanic. Hispanic includes all races.

- From 2008 to 2013, the percentage of patients who reported that it was very important to be able to get their medical information electronically increased from 54.1% to 67.2% for Blacks, from 58.8% to 66.4% for Whites, and from 57.1% to 60.2% for Hispanics.
- In all 3 years, patients who were college graduates were more likely than patients with less than a high school education and high school graduates to report that it was very important to be able to get their medical information electronically.

### Patients Who Said It Was Important for Health Providers To Be Able To Share Patient Information With Other Providers Electronically

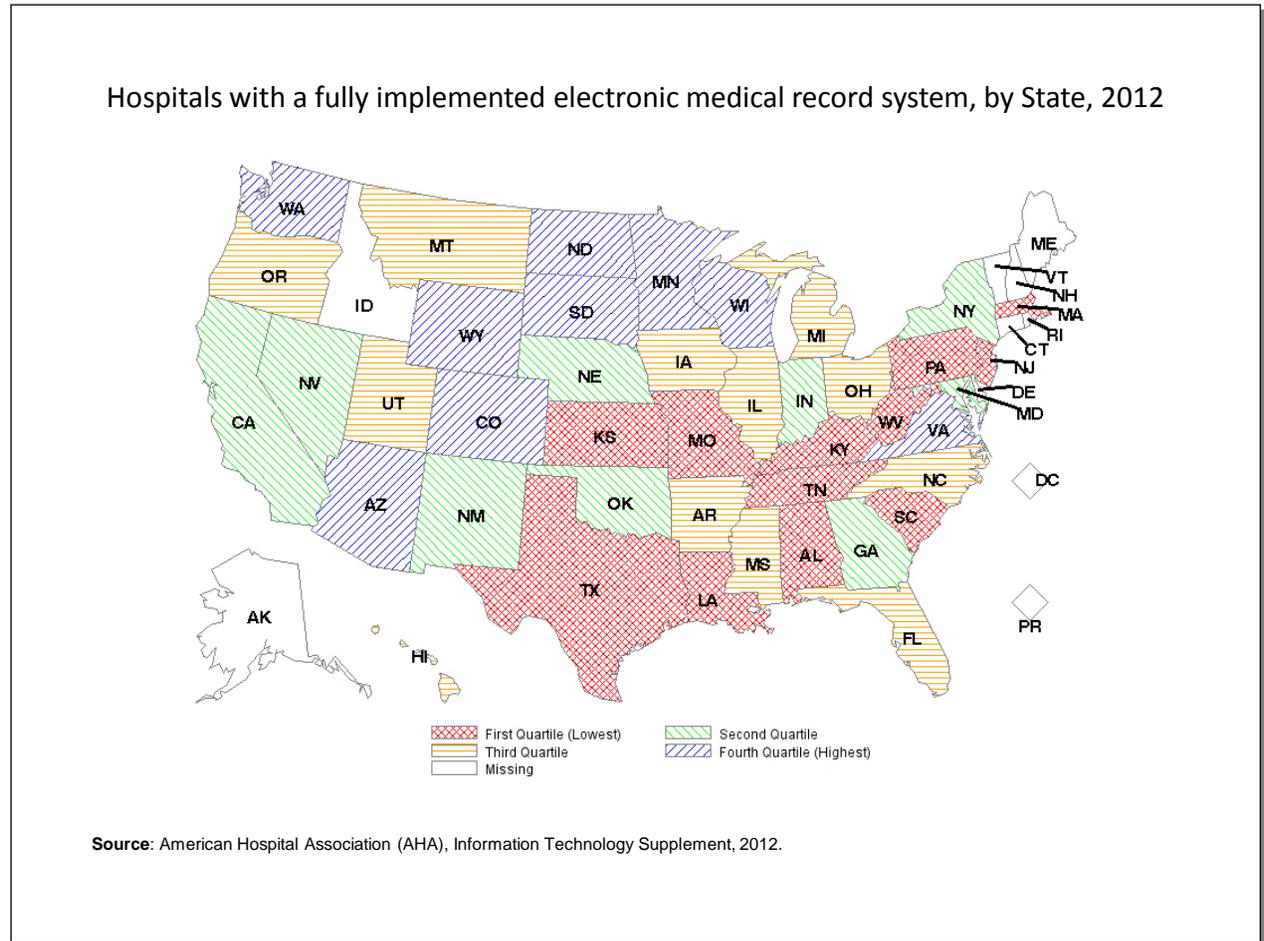


- In 2013, 63.0% of patients reported that it was very important that health care providers be able to share their medical information with other providers electronically, a significant increase from 46.7% in 2008.
- In all 3 years, patients age 65 and over were more likely than patients ages 18-34 to report that it was very important that health care providers be able to share their medical information electronically.
- From 2008 to 2013, the percentage of residents of both metropolitan and nonmetropolitan areas who reported that it was very important that health care providers be able to share their medical information electronically improved significantly.



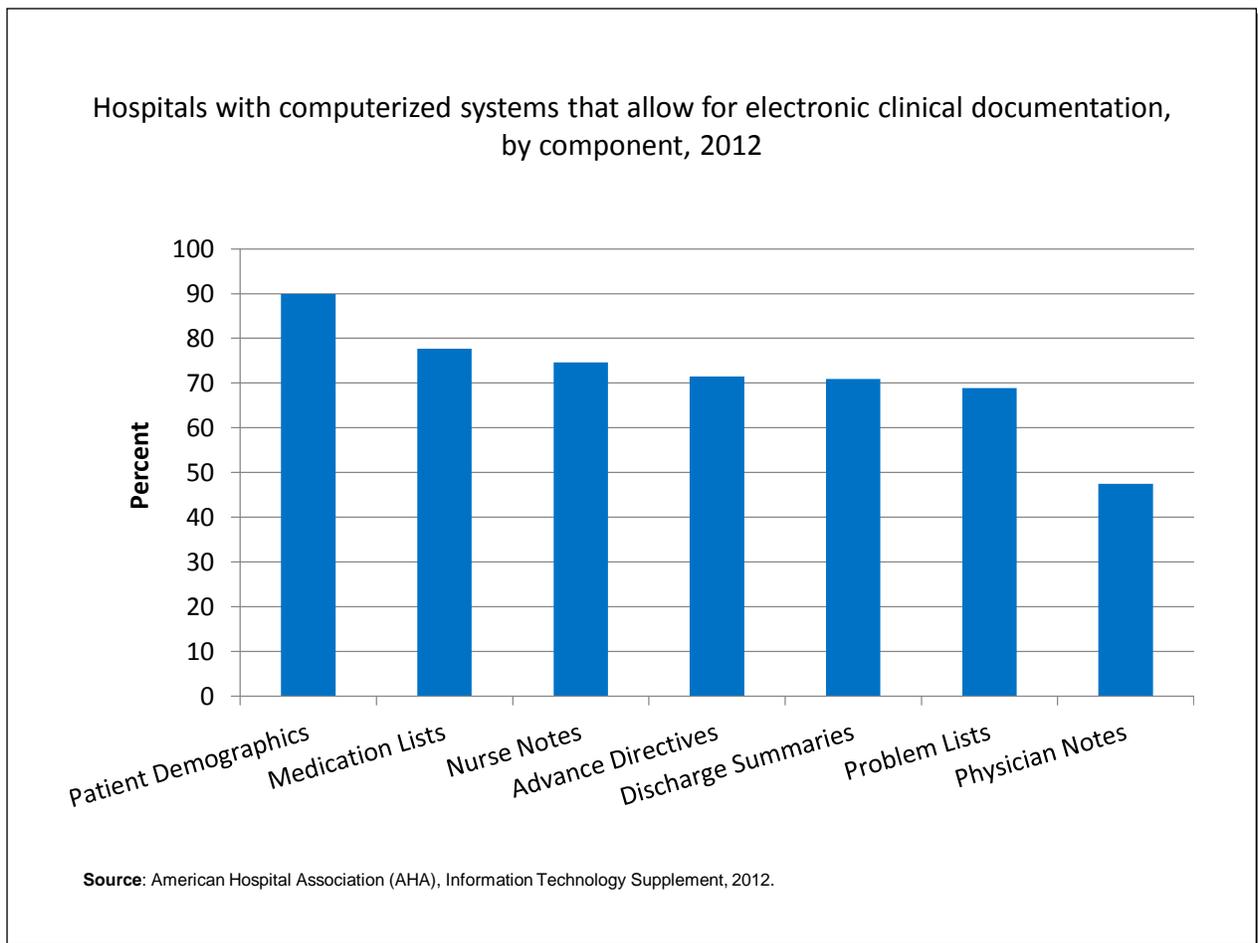
- From 2008 to 2013, the percentage of Black patients who reported that it was very important that providers be able to share their medical information with other providers electronically increased from 41.8% to 59.7%. White patients showed an increase from 48.4% to 65.6% and Hispanic patients increased from 45.1% to 59.9%.
- In 2013, White patients were more likely than Black patients to report that it was very important that providers be able to share their medical information electronically.
- From 2008 to 2013, the percentage of patients with less than a high school education who reported that it was very important that providers be able to share their medical information electronically increased from 43.7% to 57.7%, high school graduates increased from 43.7% to 63.7%, patients with some college increased from 46.8% to 63.3%, and college graduates increased from 52.2% to 63.6%.

### Hospitals With Electronic Medical Record Systems



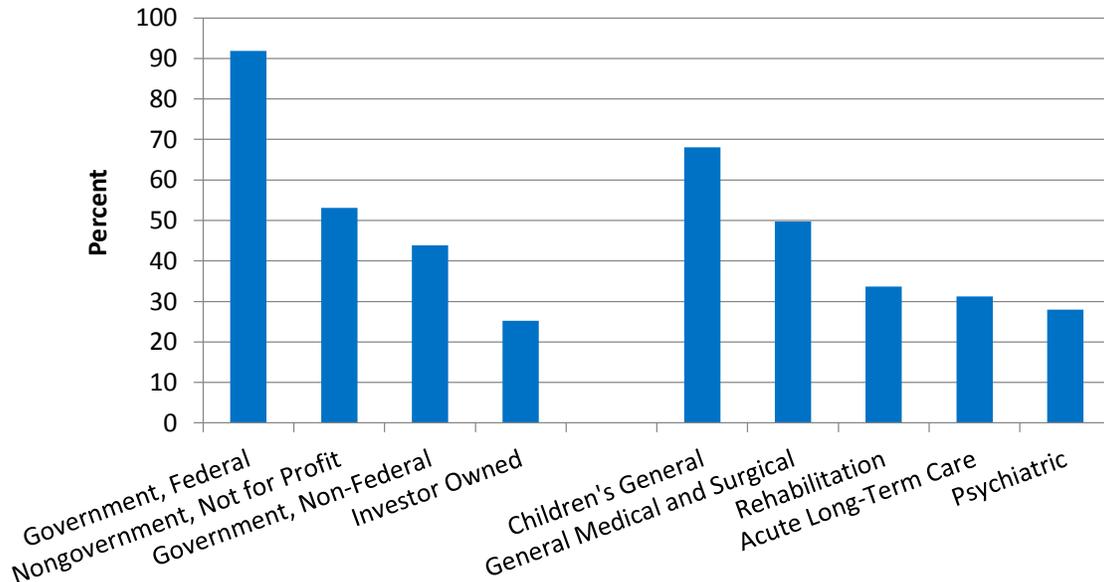
- In 2012, the percentage of hospitals with a fully implemented electronic medical record system was less than 34.2% in States in the lowest quartile and above 50.0% in States in the highest quartile.
- States in the South tended to be in the lower quartiles while States in the Midwest and West tended to be in the higher quartiles.

### Hospitals With Computerized Systems That Allow for Electronic Documentation



- In 2012, among hospitals with computerized systems that allow for electronic clinical documentation, the percentage with each component was as follows:
  - Patient demographics, 89.9%
  - Medication lists, 77.7%
  - Nursing notes, 74.6%
  - Advance directives, 71.5%
  - Discharge summaries, 70.9%
  - Problem lists, 68.9%
  - Physician notes, 47.5%

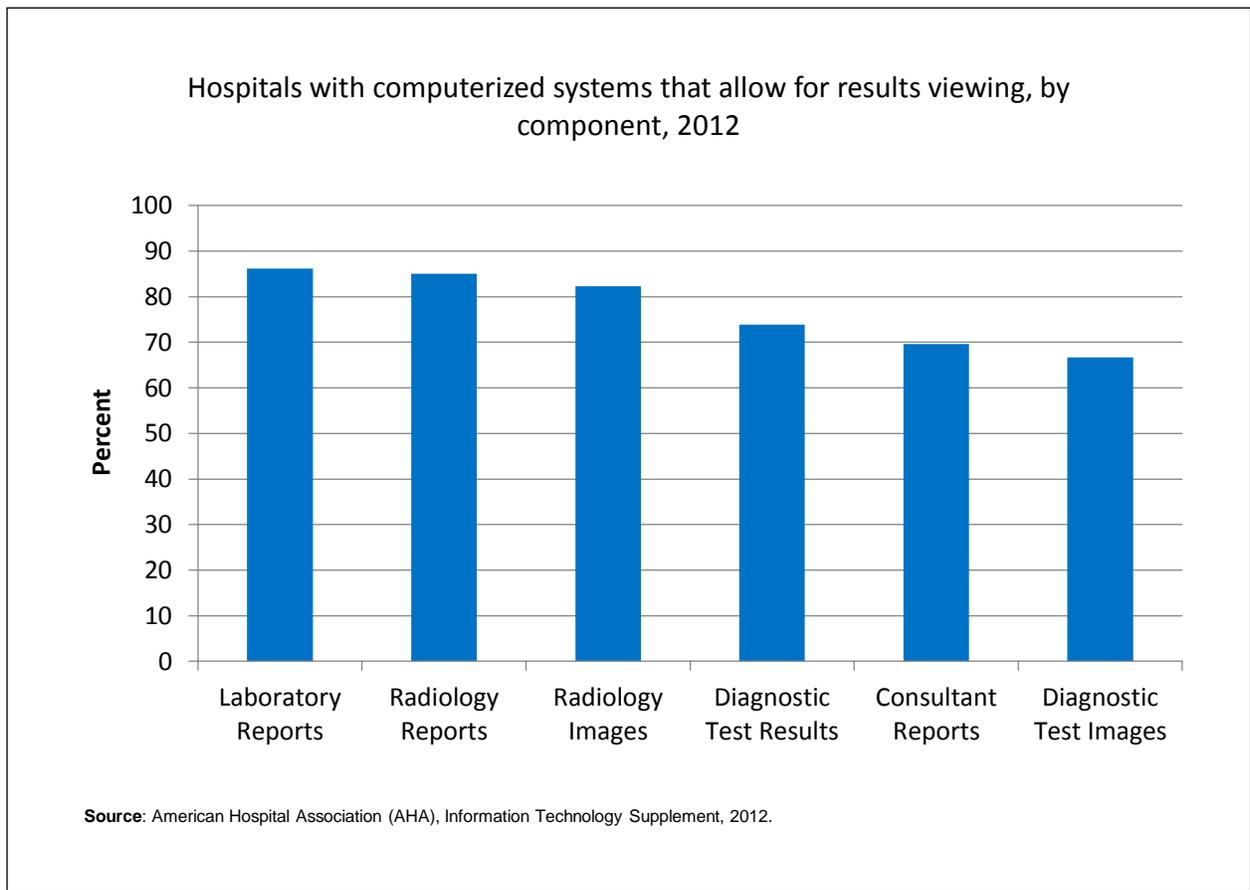
Hospitals with computerized systems that allow for electronic clinical documentation with a component for physician notes, by hospital control and hospital type, 2012



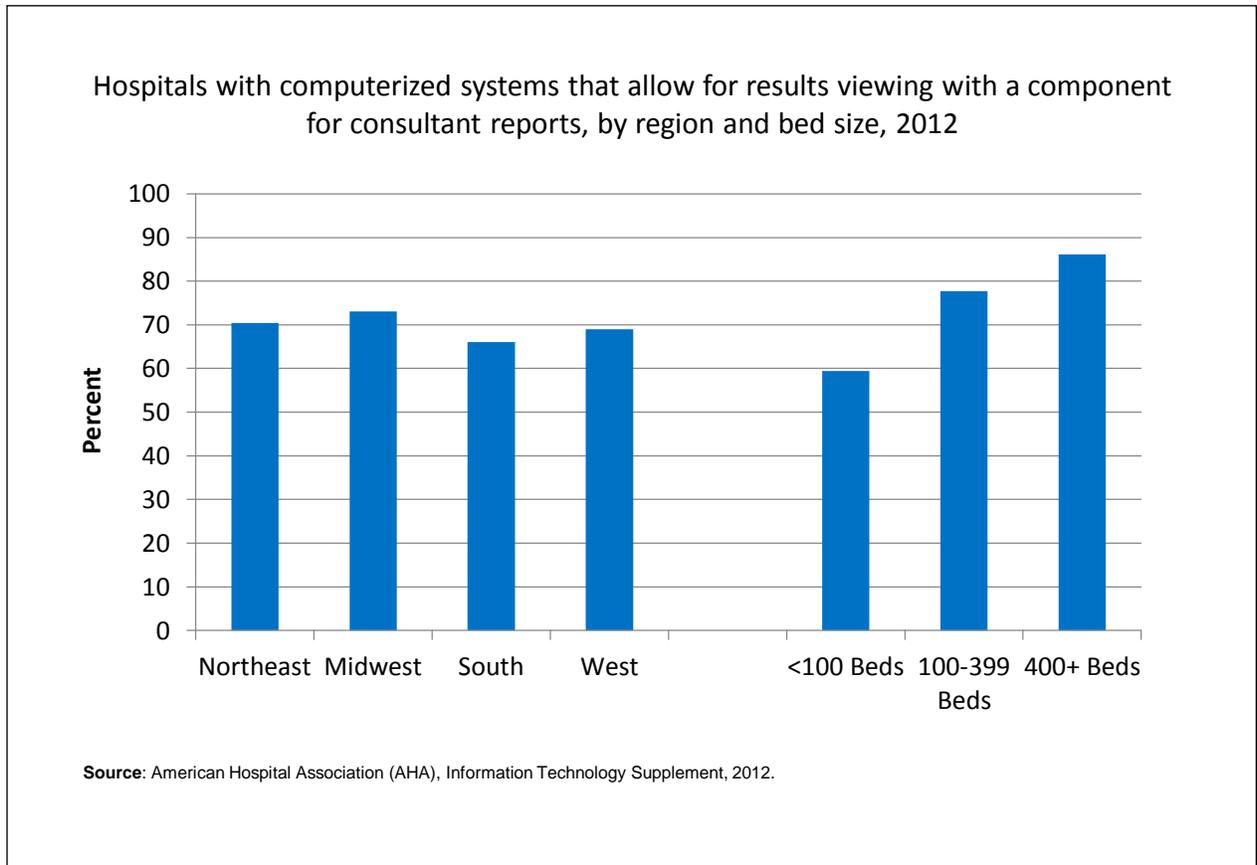
Source: American Hospital Association (AHA), Information Technology Supplement, 2012.

- In 2012, 91.9% of hospitals run by Federal Government, 53.1% of not-for-profit, 43.8% of non-Federal Government, and 25.2% of for-profit hospitals had a component for physician notes.
- In 2012, 68.1% of children's general, 49.7% of general medical and surgical, 33.7% of rehabilitation, 31.2% of acute long-term care, and 28% of psychiatric hospitals had a component for physician notes.

### Hospitals With Computerized Systems That Allow for Results Viewing

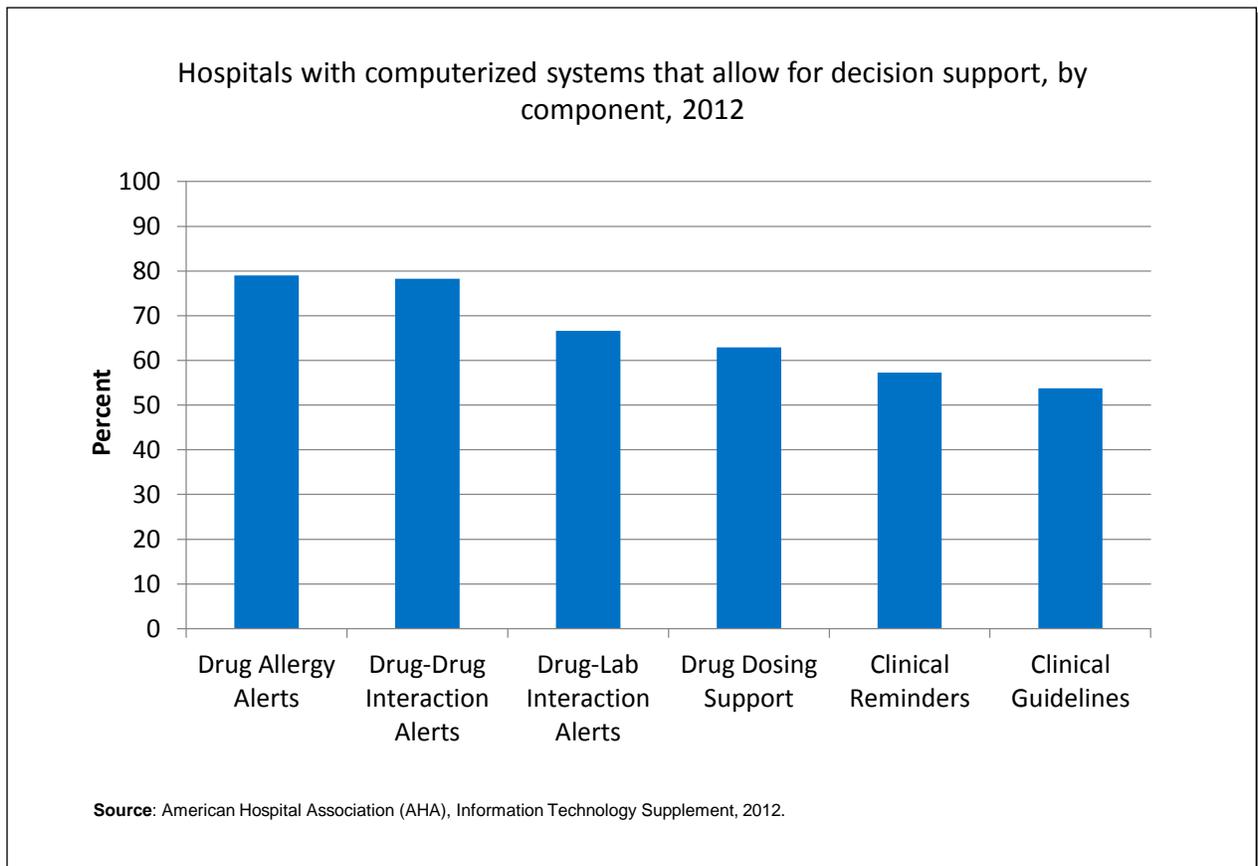


- In 2012, among hospitals with computerized systems that allow for results viewing, the percentage with each component was as follows:
  - Laboratory reports, 86.2%
  - Radiology reports, 85.0%
  - Radiology images, 82.3%
  - Diagnostic test results, 73.9%
  - Consultant reports, 69.6%
  - Diagnostic test images, 66.7%

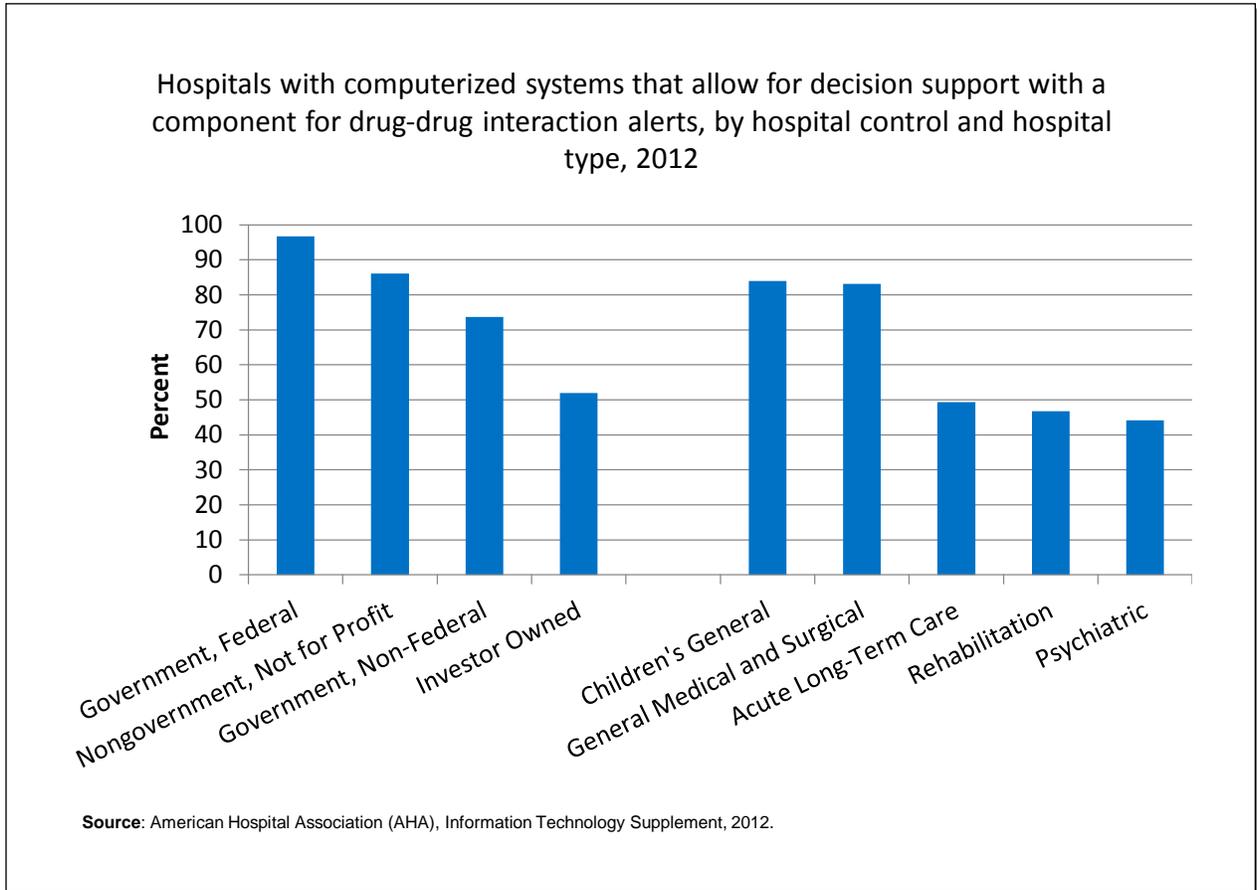


- In 2012, among hospitals with computerized systems that allow for results viewing, the percentage with a component for consultant reports was highest in the Midwest (73.1%). Seventy percent of hospitals in the Northeast, 69.0% of hospitals in the West, and 66.1% of hospitals in the South had a component for consultant reports.
- In 2012, 86.1% of hospitals with 400 or more beds, 77.7% of hospitals with 100-399 beds, and 59.4% of hospitals with less than 100 beds had a component for consultant reports.

### Hospitals With Computerized Systems That Allow for Decision Support

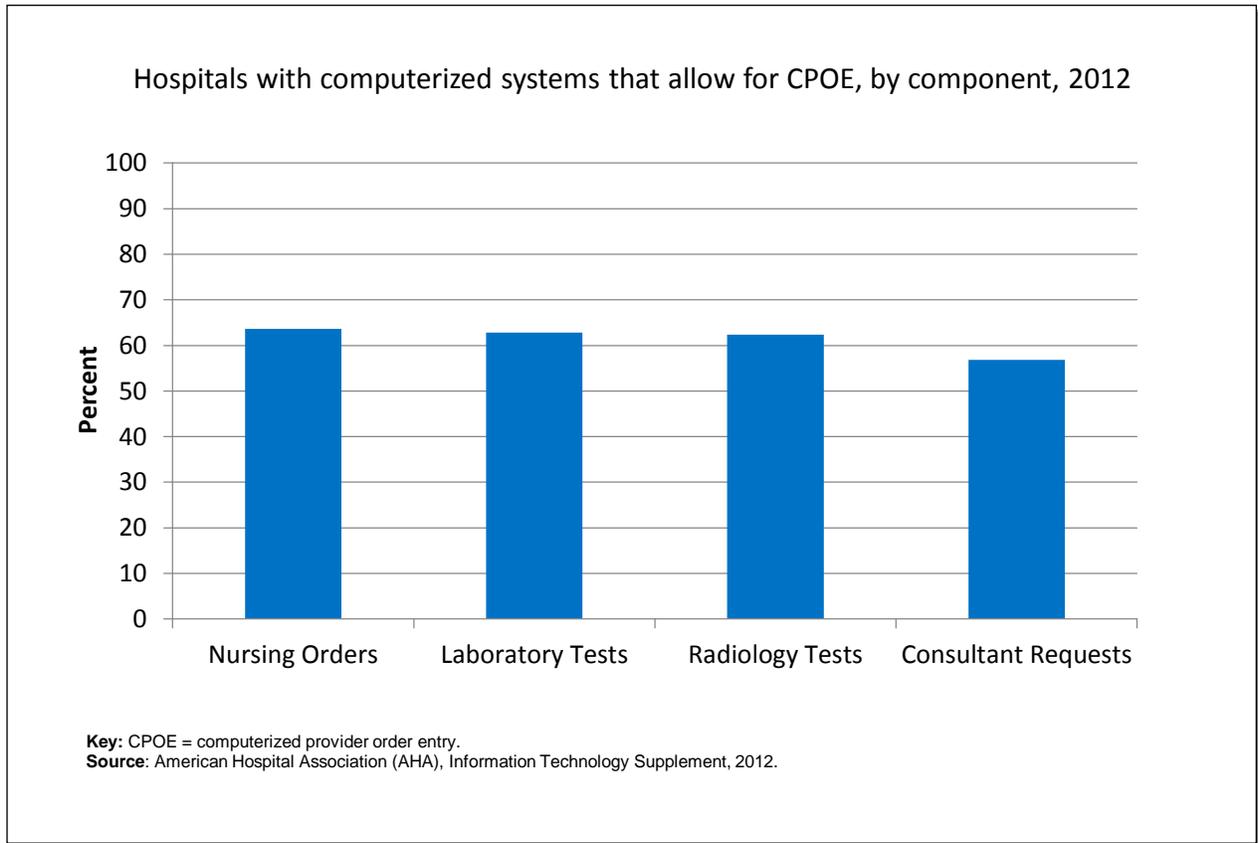


- In 2012, among hospitals with computerized systems that allow for decision support, the percentage with each component was as follows:
  - Drug allergy alerts, 79.0%
  - Drug-drug interaction alerts, 78.3%
  - Drug-lab interaction alerts, 66.6%
  - Drug dosing support, 62.9%
  - Clinical reminders, 57.3%
  - Clinical guidelines, 53.8%

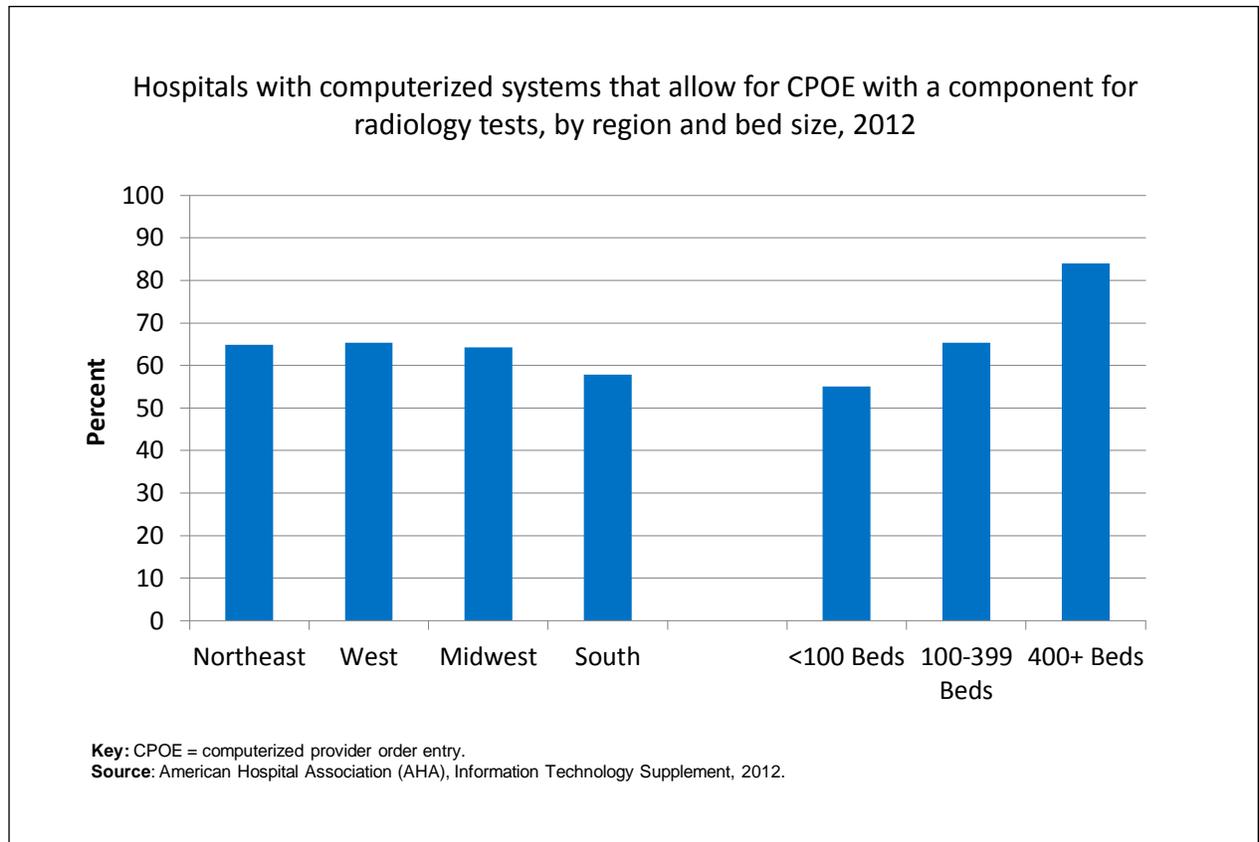


- In 2012, 96.7% of hospitals run by the Federal Government, 86.1% of not-for-profit, 73.7% of non-Federal Government, and 51.9% of for-profit hospitals had a component for drug-drug interaction alerts.
- In 2012, 84.0% of children’s general, 83.1% of general medical and surgical, 49.4% of acute long-term care, 46.8% of rehabilitation, and 44.2% of psychiatric hospitals had a component for drug-drug interaction alerts.

### Hospitals With Computerized Systems That Allow for CPOE



- In 2012, among hospitals with computerized systems that allow for computerized provider order entry, the percentage with each component was as follows:
  - Nursing orders, 63.6%
  - Laboratory tests, 62.8%
  - Radiology tests, 62.4%
  - Consultant requests, 56.8%



- In 2012, among hospitals with computerized systems that allow for CPOE, the West had the highest percentage with a component for radiology tests (65.4%). Approximately 65% of hospitals in the Northeast and Midwest and 57.9% of hospitals in the South had a component for radiology tests.
- In 2012, 84% of hospitals with 400 or more beds, 65.4% of hospitals with 100-399 beds, and 55.1% of hospitals with less than 100 beds had a component for radiology tests.

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