

## Maternal and Child Health Care

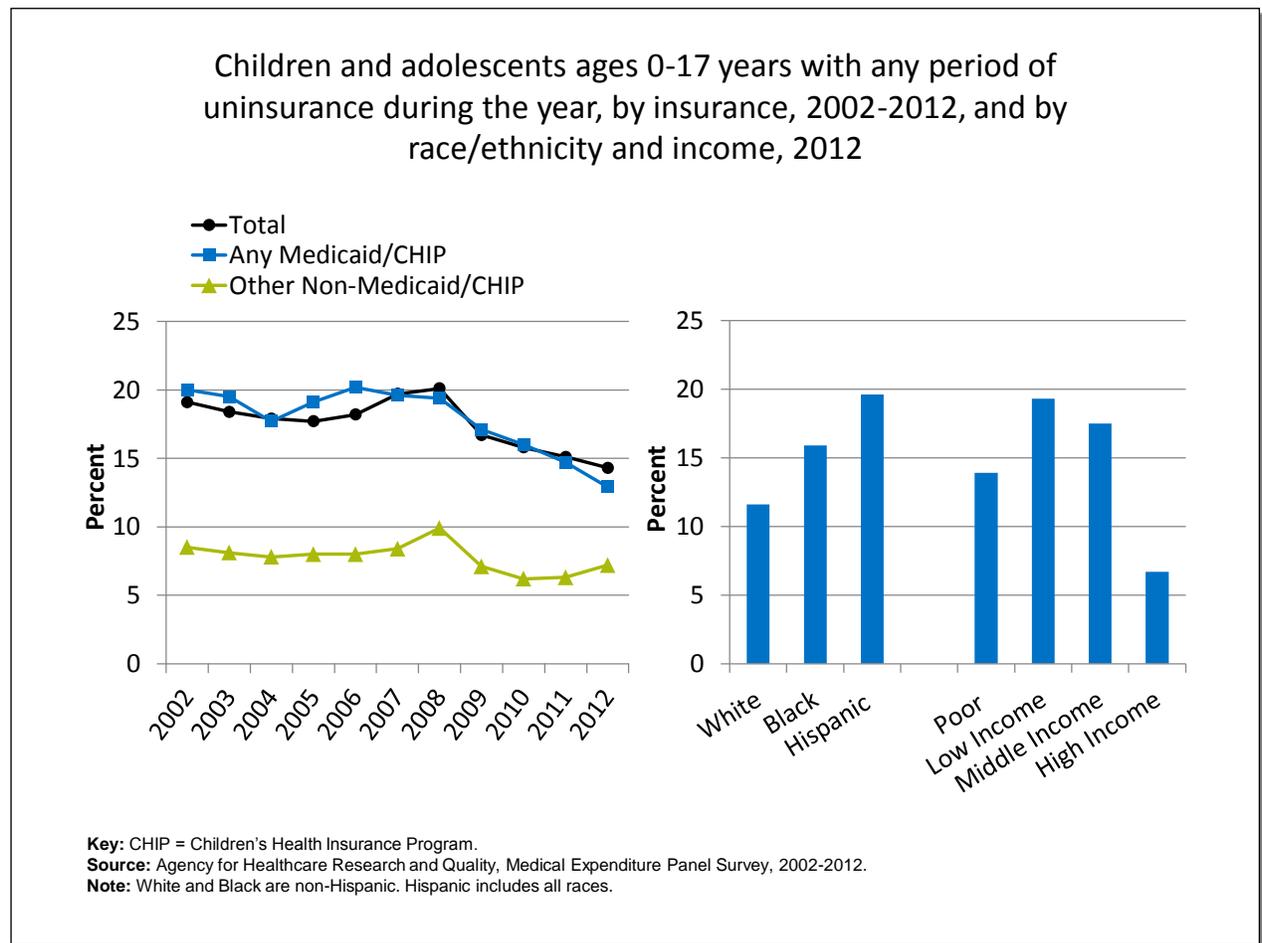
### Maternal and Child Health Care Measures

- Access
  - Periods of uninsurance
- Effectiveness
  - Prenatal care
  - Receipt of recommended immunizations by young children
  - Children’s vision screening
  - Well-child visits in the last year
  - Receipt of meningococcal vaccine by adolescents
  - Receipt of human papillomavirus (HPV) vaccination by adolescents
- Person-Centered Care
  - Children who had a doctor’s office or clinic visit in the last 12 months who reported poor communication with health providers
- Patient Safety
  - Birth trauma—injury to neonates
- Care Coordination
  - Children and adolescents whose health provider usually asks about prescription medications and treatments from other doctors
  - Emergency department (ED) visits with a principal diagnosis related to mental health, alcohol, or substance abuse
  - ED visits for asthma

### Access: Children and Adolescents With Periods of Uninsurance

- Coverage gaps (“uninsurance”) are a significant factor in children’s access to and use of care, as well as their health outcomes.<sup>1-3</sup>
- Resources through the Children’s Health Insurance Program Reauthorization Act (CHIPRA) are designed to increase Medicaid/CHIP enrollment:
  - Outreach programs
  - Simplified enrollment strategies<sup>4</sup>
- Coverage gaps are still found for as many as 40 percent of new CHIP enrollees<sup>5</sup> despite changes in State enrollment, renewal, and outreach processes.

**Children and Adolescents Without Insurance**



• **Trends:**

- The overall percentage of children and adolescents ages 0-17 years with any period of uninsurance during the year declined from 19.1% in 2002 to 14.3% in 2012.
- Among children and adolescents with any Medicaid or CHIP insurance, the percentage with any period of uninsurance during the year declined from 20.0% in 2002 to 12.9% in 2012.
- Among children and adolescents with other insurance alone, the percentage with any period of uninsurance during the year declined to a statistically nonsignificant degree, falling from 8.5% in 2002 to 7.2% in 2012.

• **Groups With Disparities:**

- In 2012, White children (11.6%) were less likely to have a period of uninsurance than both Blacks (15.9%) and Hispanics (19.6%).
- In 2012, children in families with high incomes (i.e., those  $\geq 400\%$  of the Federal poverty level) were less likely than children in every other income category (poor, low income, middle income) to have experienced a period of uninsurance (6.7% versus 13.9%, 19.3%, and 17.5%, respectively).

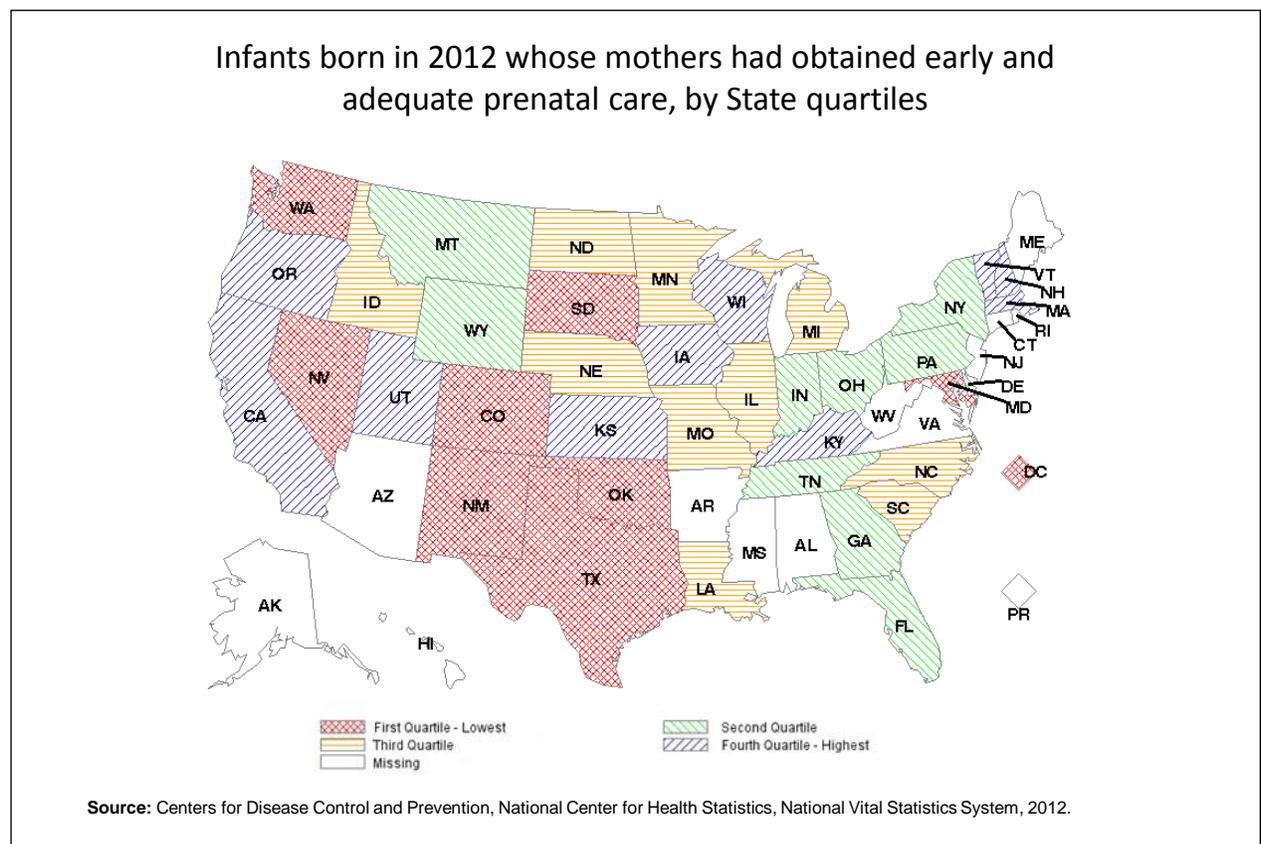
## Effectiveness Measures

- Early and adequate prenatal care
- Receipt of recommended immunizations by young children
- Children’s vision screening
- Well-child visits in the last year
- Receipt of meningococcal vaccine by adolescents
- Receipt of human papillomavirus (HPV) vaccination by adolescents

### Prevention: Early and Adequate Prenatal Care

- A Healthy People 2020 objective is for 77.6% of pregnant women to receive early and adequate prenatal care:
  - Based on Adequacy of Prenatal Care Utilization Index
  - For a given pregnancy, target number of prenatal visits considered adequate determined by prenatal care start date and infant’s gestational age at birth

### Infants Whose Mothers Had Adequate Prenatal Care



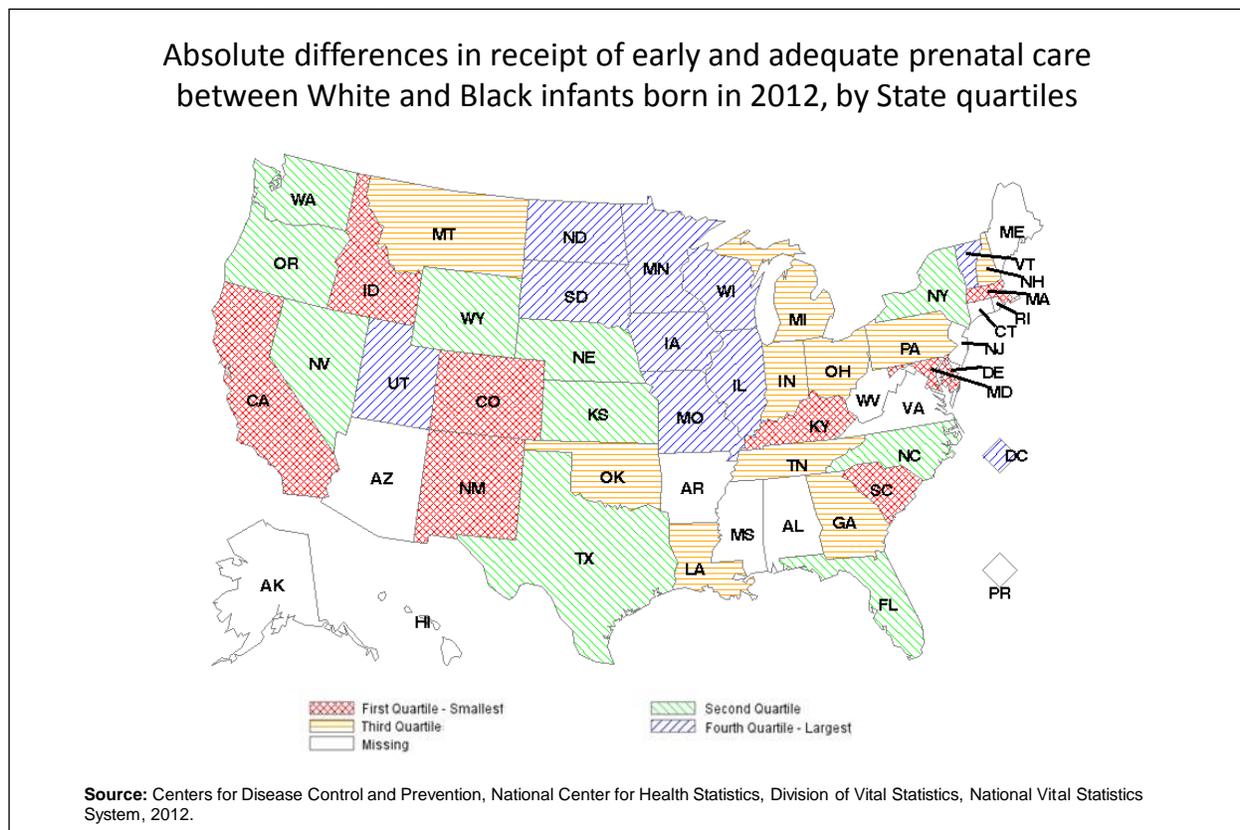
**Note:** Because of changes between the 1998 and 2003 versions of birth certificates, prenatal care timing and adequacy were evaluated only for the District of Columbia and the 38 States using the 2003 standard birth certificate for all of 2012. Data for 2012 were only available for these 39 State-equivalent jurisdictions, so national estimates were not generated. However, these 39 jurisdictions accounted for more than 86% of live births in the United States in 2012. The State-

equivalent jurisdictions (AK, AL, AR, AZ, CT, HI, ME, MS, NJ, PR, RI, VA, and WV) not using the 2003 version of the birth certificate did not have data available for this measure and are categorized as “missing” on the map.

To classify the adequacy of prenatal care services, the reported number of visits is compared to the expected number of visits for the period between when care began and the delivery date. Completeness of reporting varies by item and State. Two States were missing responses on more than 10% of the birth certificates (GA-13.4%; NV-17.2%). The impact of the comparatively high level of unknown data is not clear. Comparisons that include information from these States should be made with caution. More detailed information is available in the 2012 Natality Data Users Guide: [ftp://ftp.cdc.gov/pub/Health\\_Statistics/NCHS/Dataset\\_Documentation/DVS/natality/UserGuide2012.pdf](ftp://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/DVS/natality/UserGuide2012.pdf).

- **Overall:** This map shows overall rankings by quartiles in the percentage of infants born to women who received early and adequate prenatal care in 2012, for Washington, DC, and 38 States. Values ranged from 63.5% to 87.2%.
- **Differences by State:** Interquartile ranges follow:
  - First quartile (worst): 63.5%-69.8% (CO, DC, MD, NM, NV, OK, SD, TX, WA)
  - Second quartile (second worst): 70.1%-73.0% (DE, FL, GA, IN, MT, NY, OH, PA, TN, WY)
  - Third quartile (second best): 73.4%-77.8% (ID, IL, LA, MI, MN, MO, NC, ND, NE, SC)
  - Fourth quartile (best): 78.0%-87.2% (CA, IA, KS, KY, MA, NH, OR, UT, VT, WI)

**Disparities in Receipt of Adequate Prenatal Care**



**Note:** Because of changes between the 1998 and 2003 versions of birth certificates, prenatal care timing and adequacy were evaluated only for the District of Columbia and the 38 States using the 2003 standard birth certificate for all of 2012. Data for 2012 were only available for these 39 State-equivalent jurisdictions, so national estimates were not generated. However, these 39 jurisdictions accounted for more than 86% of live births in the United States in 2012. The State-equivalent jurisdictions (AK, AL, AR, AZ, CT, HI, ME, MS, NJ, PR, RI, VA, and WV) not using the 2003 version of the birth certificate did not have data available for this measure and are categorized as “missing” on the map.

- **Overall:** This map shows overall State-equivalent rankings by quartiles for the absolute differences between percentages of White and Black infants born in 2012 whose mothers obtained early and adequate prenatal care.
- **Differences by State:** Interquartile ranges follow:
  - First quartile (smallest absolute difference): 2.6%-7.8% (CA, CO, DE, ID, KY, MA, MD, NM, SC)
  - Second quartile: 8.6%-10.0% (FL, KS, NC, NE, NV, NY, OR, TX, WA, WY)
  - Third quartile: 10.1%-14.9% (GA, IN, LA, MI, MT, NH, OH, OK, PA, TN)
  - Fourth quartile (largest absolute difference): 16.6%-24.8% (DC, IA, IL, MN, MO, ND, SD, UT, VT, WI)

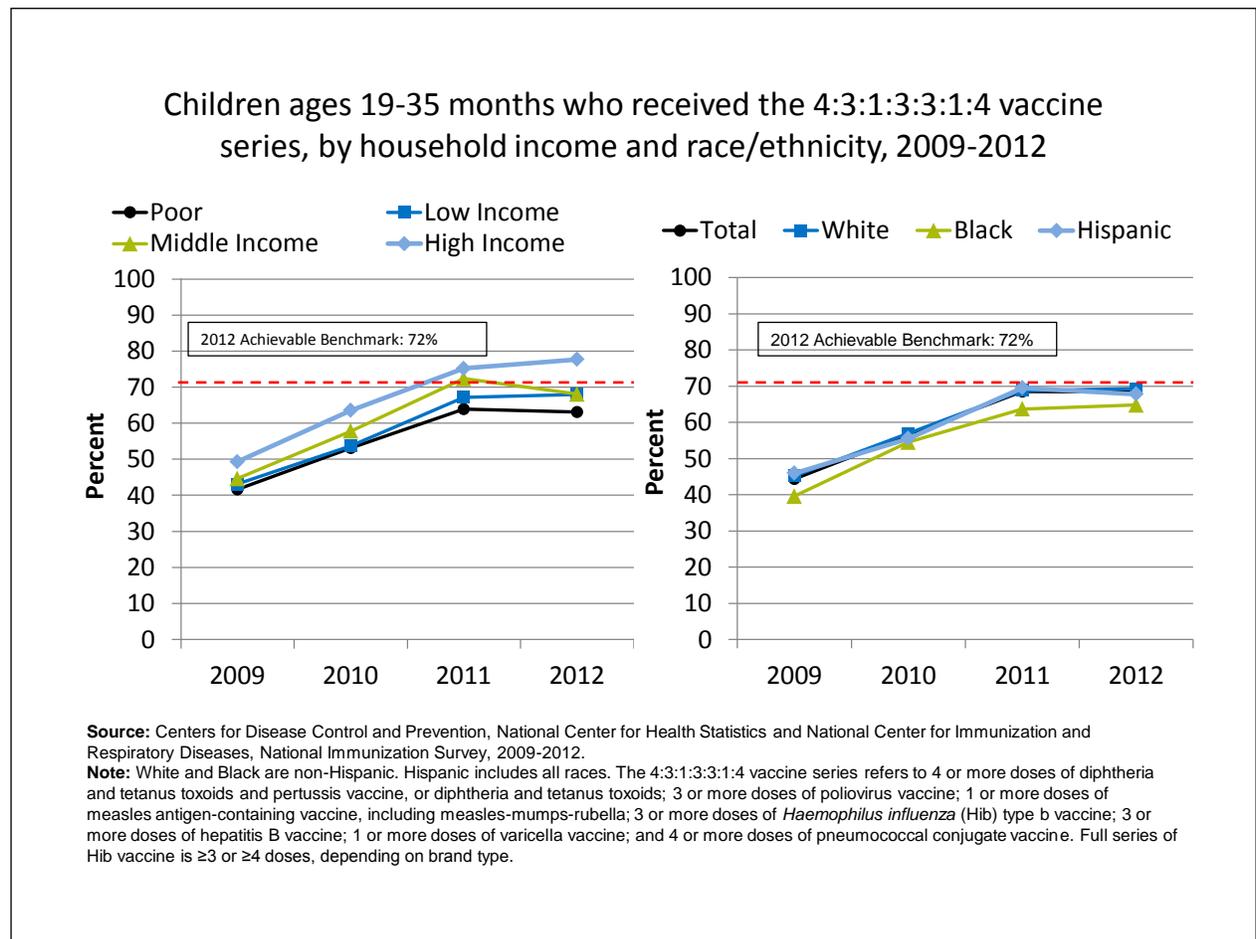
#### **Prevention: Receipt of Recommended Vaccinations by Young Children**

- Immunizations reduce mortality and morbidity by:
  - Protecting recipients from illness and
  - Protecting others in the community who are not vaccinated.
- Beginning in 2007, seven vaccines were recommended to be completed by ages 19-35 months:
  - Diphtheria-tetanus-pertussis vaccine,
  - Polio vaccine,
  - Measles-mumps-rubella vaccine,
  - *Haemophilus influenzae* type B vaccine,
  - Hepatitis B vaccine,
  - Varicella vaccine, and
  - Pneumococcal conjugate vaccine.

These vaccines constitute the 4:3:1:3:3:1:4 vaccine series tracked in Healthy People 2020.

- The Healthy People 2020 target is 80% coverage in the population ages 19-35 months.
- The U.S. Surgeon General, Dr. Vivek H. Murthy, and Elmo want everyone to stay healthy and get vaccinated! <https://youtu.be/viS1ps0r4K0>

Children Who Received the 4:3:1:3:3:1:4 Vaccine Series



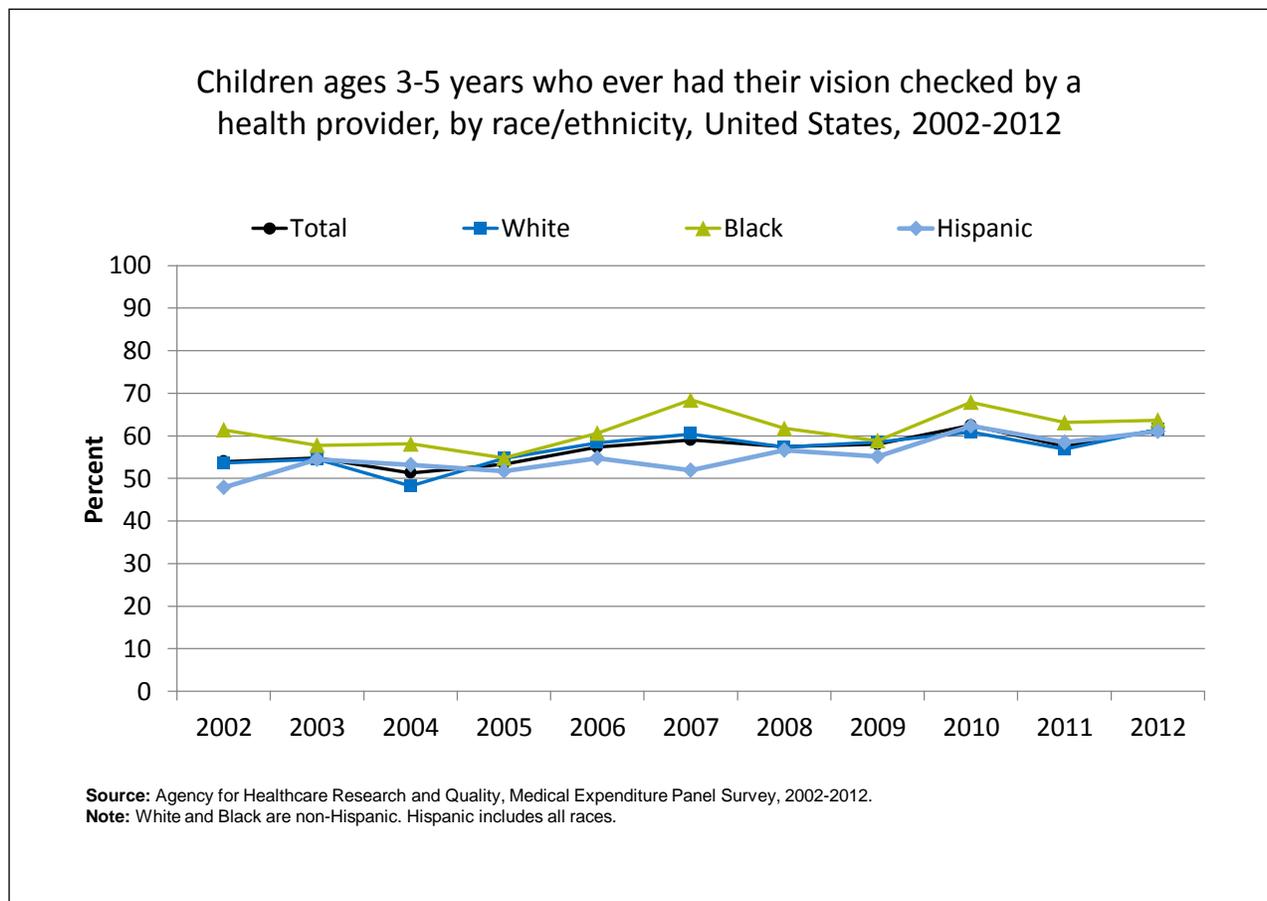
- **Trends:** From 2009 to 2012, the percentage of children ages 19-35 months who received the 4:3:1:3:3:1:4 vaccination series improved from 44.3% to 68.4%.
- **Groups With Disparities:**
  - From 2009 to 2012, the percentage of children who received all recommended vaccinations improved for high-income households (49.3% to 77.7%), middle-income households (44.6% to 68.1%), low-income households (43.1% to 68%), and poor households (41.6% to 63.1%).
  - In 2012, children from high-income households were more likely to receive all the recommended vaccinations than those from poor, low-income, and middle-income households.
  - From 2009 to 2012, the percentage of children who received all recommended vaccinations improved for Blacks (39.6% to 64.8%), Hispanics (45.9% to 67.8%), and Whites (45.2% to 69.3%).
  - In 2012, there were no statistically significant differences between Hispanic children and White children in the percentage who received all recommended vaccines, while Black children were less likely than White children to receive all recommended vaccines.

- The 2012 top 5 State achievable benchmark was 72%. The top 5 States that contributed to the achievable benchmark are Louisiana, Maryland, Massachusetts, New Hampshire, and Ohio.
- Children from high-income households have achieved the benchmark.
- Children from poor, low-income, and middle-income households could achieve the benchmark in approximately a year. White, Black, and Hispanic children also could achieve the benchmark within a year.

**Prevention: Children’s Vision Screening**

- Vision checks for children may detect problems of which children and their parents were previously unaware.<sup>6</sup>
- Early detection also improves the chances that corrective treatments will be effective.<sup>6</sup>

**Children Who Had Their Vision Checked**



● **Trends:**

- From 2002 to 2012, the percentage of children ages 3-5 years who had ever received a vision check by a health provider increased from 53.9% to 61.4%.
- Among White children ages 3-5 years, the percentage who had ever received a vision check by a health provider increased from 53.6% in 2002 to 61.5% in 2012. The percentage also increased for Hispanic children from 47.9% in 2002 to 61.1% in 2012.

However, there was no statistically significant increase for Black children (61.4% in 2002 and 63.7% in 2012).

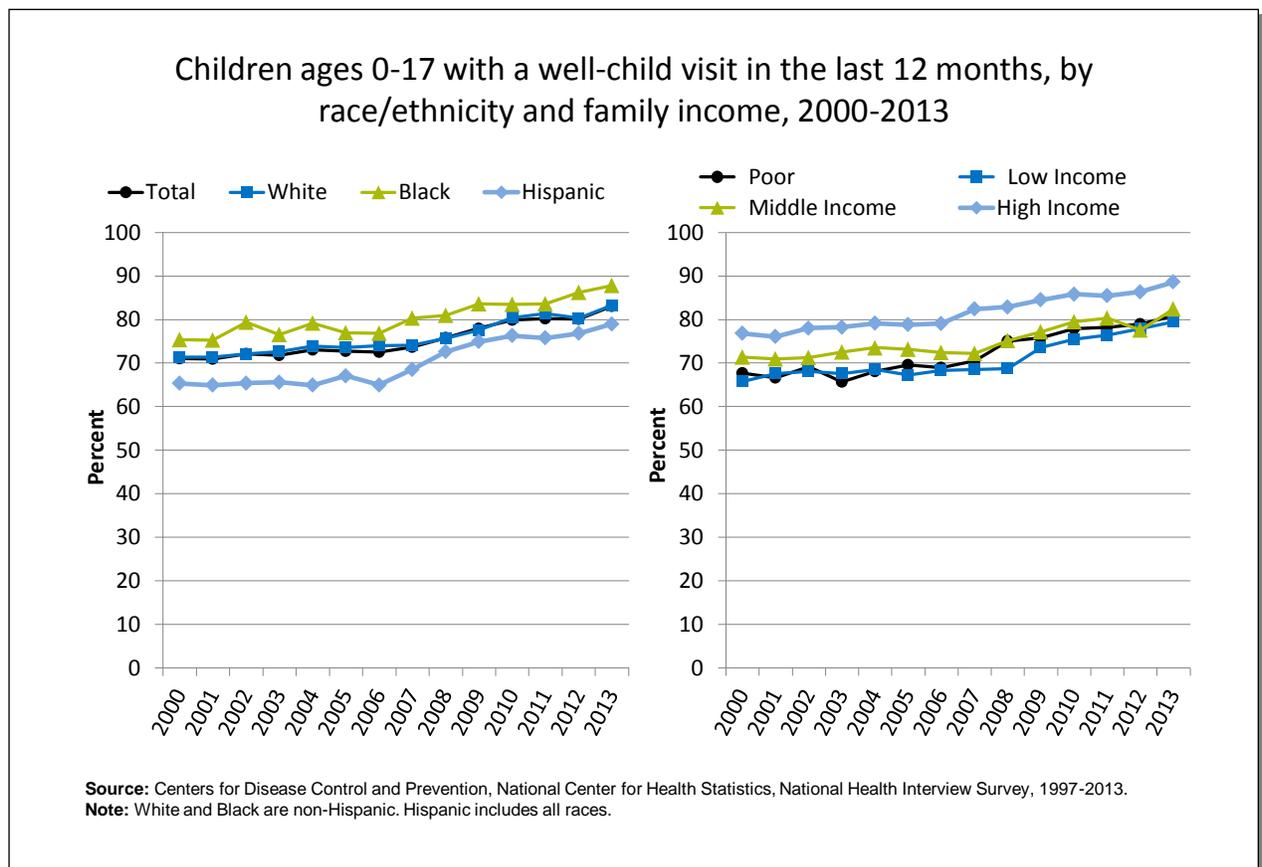
• **Groups With Disparities:**

- In 2012, there were no statistically significant differences between White, Black, and Hispanic children in the percentage who had ever received a vision check (61.5%, 63.7%, and 61.1%, respectively).

**Prevention: Well-Child Visits in the Last Year**

- Annual preventive health care visits for all children are recommended by American Academy of Pediatrics.<sup>7</sup>
- Insurance plans are required by Affordable Care Act to cover well-child visits with no copayments or deductibles.<sup>8</sup>
- Current (2014) recommendations:
  - 7 well-child visits before 12 months of age,
  - 6 well-child visits between 12 and 36 months of age, and
  - 1 well-child visit per year from ages 3 to 21 years.
- A Healthy People 2020 goal is to improve the rate of adolescent well visits.<sup>9</sup>

**Children With a Well-Child Visit**



- **Trends:**

- Overall, the percentage of children ages 0-17 years who had a well-child visit (as distinct from a symptom-driven visit) in the last 12 months increased from 71% in 2000 to 83% in 2013.
- From 2000 to 2013, the percentage of children who had a well-child visit increased significantly for Whites (71.3% to 83.3%), Blacks (75.4% to 87.8%), and Hispanics (65.3% to 79%).
- The percentage of children who had a well-child visit also increased for all income groups. From 2000 to 2013, the percentage of children with a well-child visit increased from 67.7% to 80.8% for poor families; from 65.8% to 79.5% for low-income families; from 71.3% to 82.5% for middle-income families; and from 76.8% to 88.6% for high-income families.

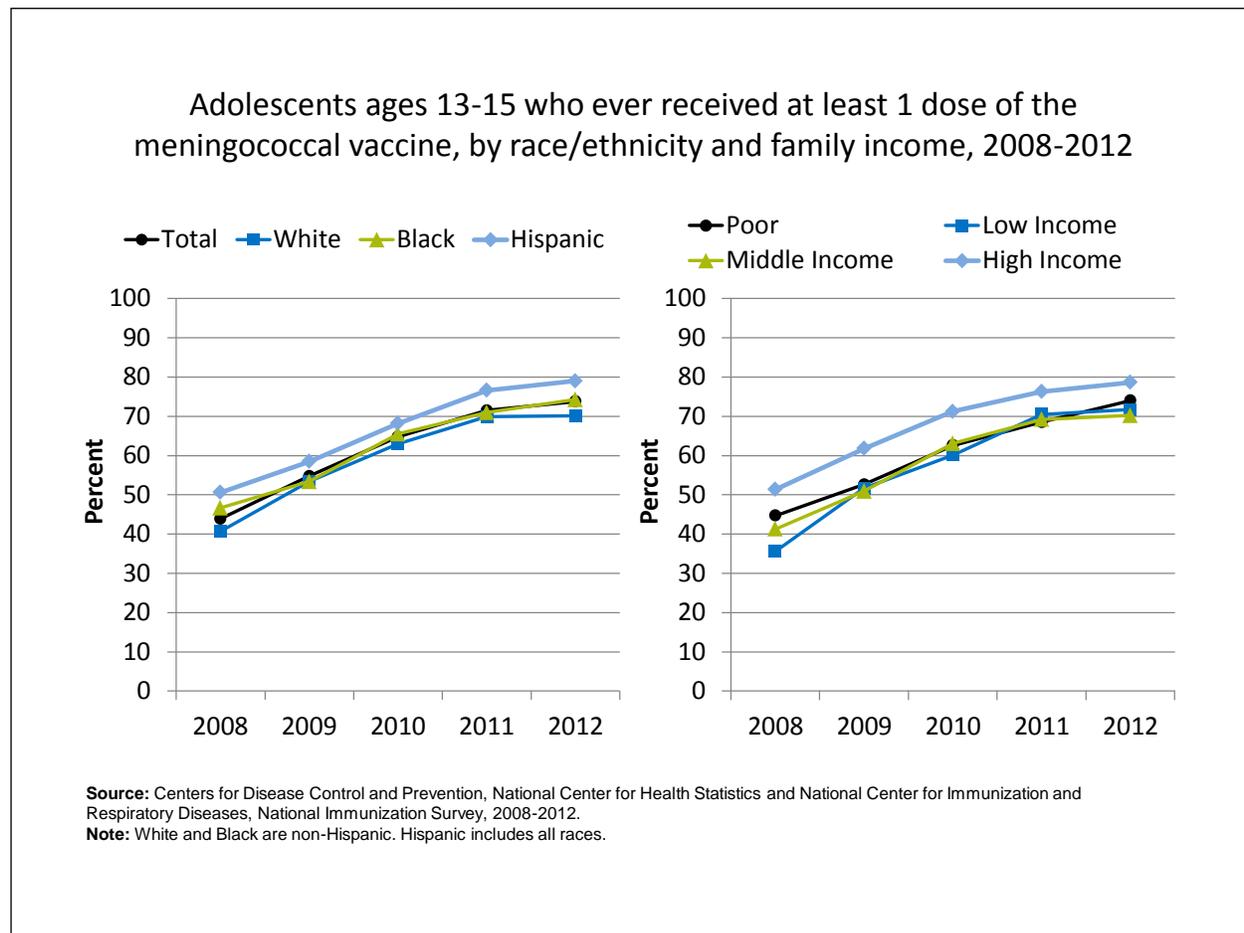
- **Groups With Disparities:**

- In 2013, Black children were more likely than White children to have at least one well-child visit (87.8% vs. 83.3%).
- White children were more likely than Hispanic children to have had at least one well-child visit during the year (83.3% vs. 79.0%).
- In 2013, children in high-income families were more likely than children in poor, low-income, and middle-income families to have had at least one well-child visit during the year (88.6% vs. 80.8%, 79.5%, and 82.5%, respectively).
- In addition, in 2013, children in middle-income families (82.5%) were more likely than children in poor families (80.8%) to have had a well-child visit.
- There were no statistically significant changes in disparities over time by race/ethnicity or income.

### Prevention: Adolescent Meningitis Vaccine

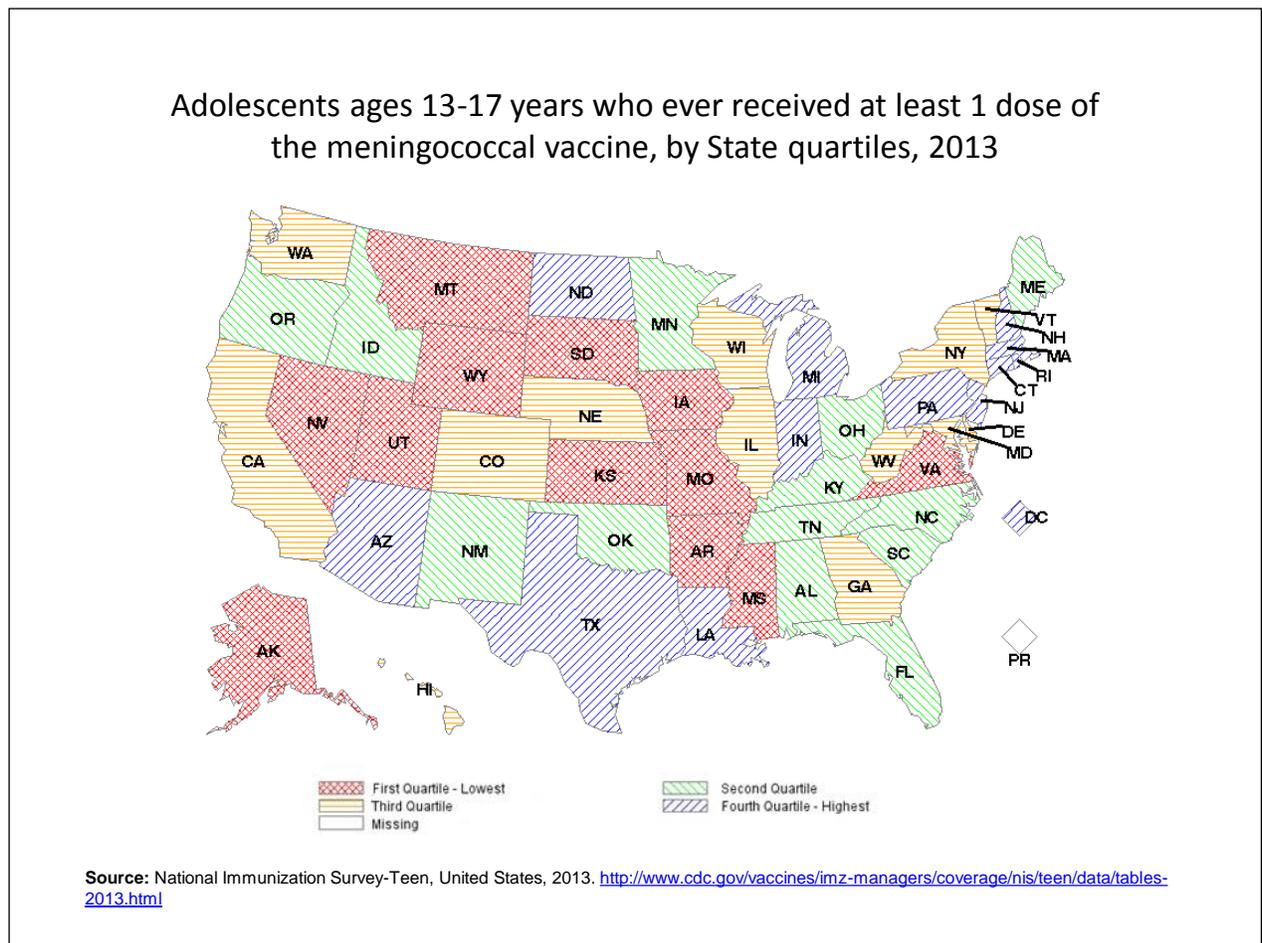
- In 2010, children ages 10-14 years made up 6.7% of the U.S. population, and teens ages 15-19 made up 7.1%.<sup>10</sup>
- Youth ages 10-19 years are at risk of contracting meningitis, a possibly fatal<sup>11</sup> infection.
- Meningococcal diseases are infections caused by the bacteria *Neisseria meningitidis*:
  - Causes various infections but most important as a potential cause of meningitis.<sup>12</sup>
  - Can also cause meningococemia, a bloodstream infection.<sup>12</sup>
- The meningococcal vaccine can prevent most cases of meningitis caused by *Neisseria meningitidis*:
  - Recommended for all children ages 11-12 years
  - Effective January 2011, a second dose recommended at age 16.<sup>13</sup>

## Adolescents Who Received Meningococcal Vaccine



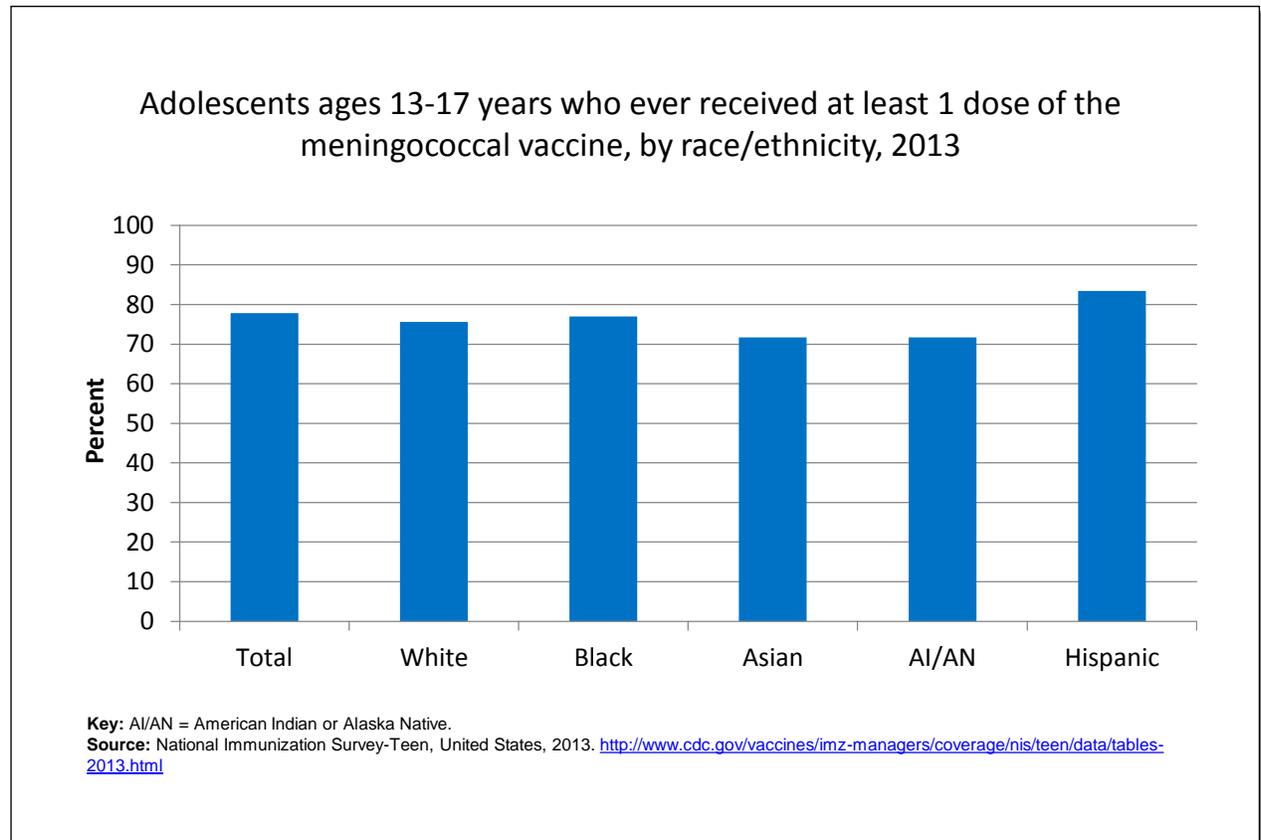
- **Trends:** The percentage of adolescents ages 13-15 who ever received at least 1 dose of the meningococcal vaccine improved from 43.9% in 2008 to 73.8% in 2012.
- **Groups With Disparities:**
  - In 2008 and from 2010 to 2012, Hispanic adolescents were more likely to receive the meningococcal vaccine than White adolescents.
  - From 2009 to 2012, there were no statistically significant differences between Blacks and Whites in the percentage of adolescents who received the vaccine.
  - In all years, adolescents from high-income households were more likely to receive the meningococcal vaccine than those from poor, low-income, and middle-income households.
  - From 2008 to 2012, there were no statistically significant differences in between males and females in the percentage of adolescents who received the meningococcal vaccine (data not shown).
  - In all years, adolescents ages 13-15 who lived in nonmetropolitan areas were less likely than those living in metropolitan areas to receive the meningococcal vaccine (data not shown).

### Adolescents Who Received Meningococcal Vaccine, by State



- **Overall:** This map shows estimated vaccination coverage with at least 1 dose of meningococcal vaccine among adolescents ages 13-17 years, by State. State values (including District of Columbia) ranged from 40.4% (Arkansas) to 93.7% (North Dakota).
- **Differences by State:** Interquartile ranges follow:
  - First quartile (lowest): 40.4%-64.2% (AK, AR, IA, KS, MO, MS, MT, NV, SD, UT, VA, WY)
  - Second quartile (second lowest): 65.3%-72.4% (AL, FL, ID, KY, ME, MN, NC, NM, OH, OK, OR, SC, TN)
  - Third quartile (second highest): 73.6%-83.3% (CA, CO, DE, GA, HI, IL, MD, NE, NY, VT, WA, WI, WV)
  - Fourth quartile (highest): 85.6%-93.7% (AZ, CT, DC, IN, LA, MA, MI, ND, NH, NJ, PA, RI, TX)

### Adolescents Who Received Meningococcal Vaccine, by Race/Ethnicity

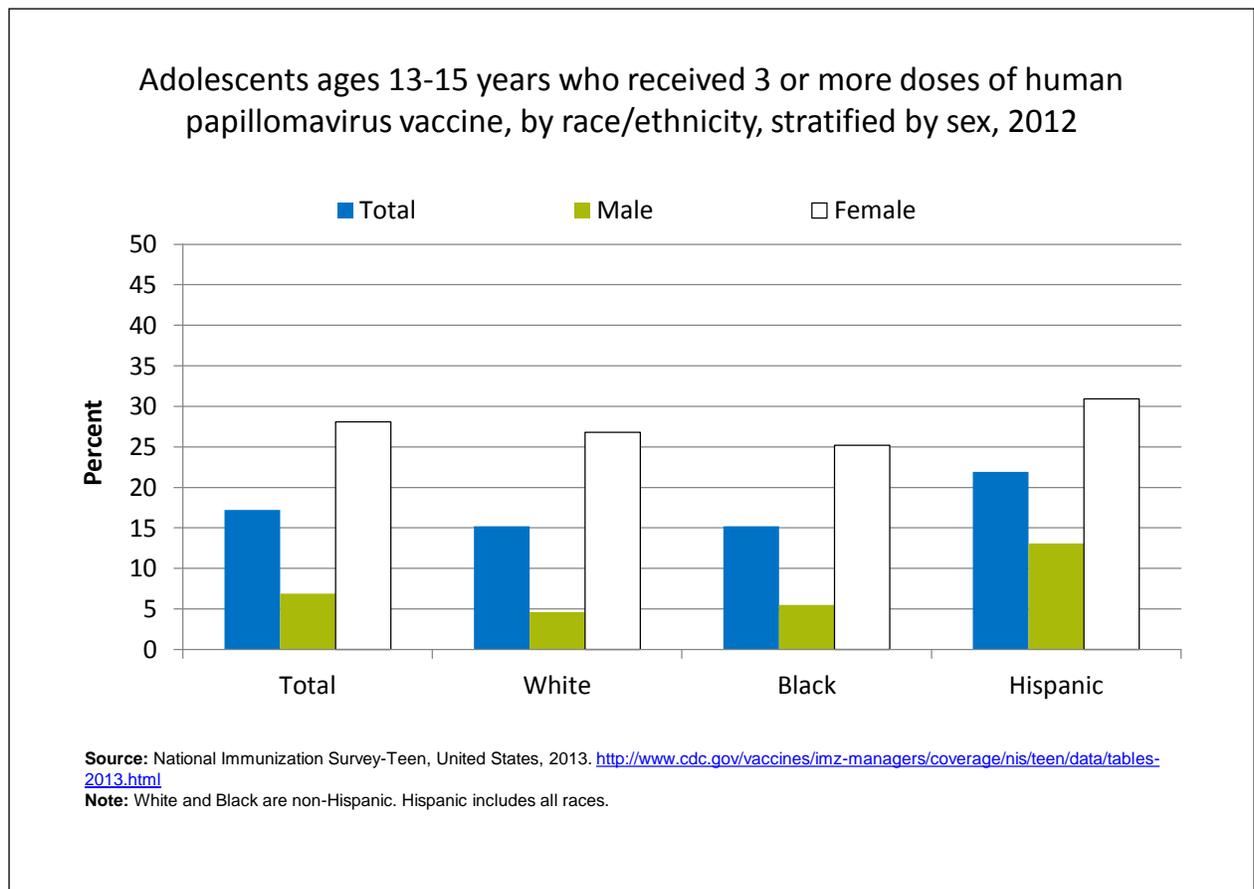


- **Overall Rate:** In 2013, the estimated vaccination coverage for the meningitis vaccine among all adolescents ages 13-17 was 77.8%.
- **Groups With Disparities:**
  - Hispanics had the highest coverage (83.4%).
  - American Indians and Alaska Natives (71.7%) and Asians (71.7%) had the lowest coverage.

### Human Papillomavirus Vaccination Coverage for Adolescents

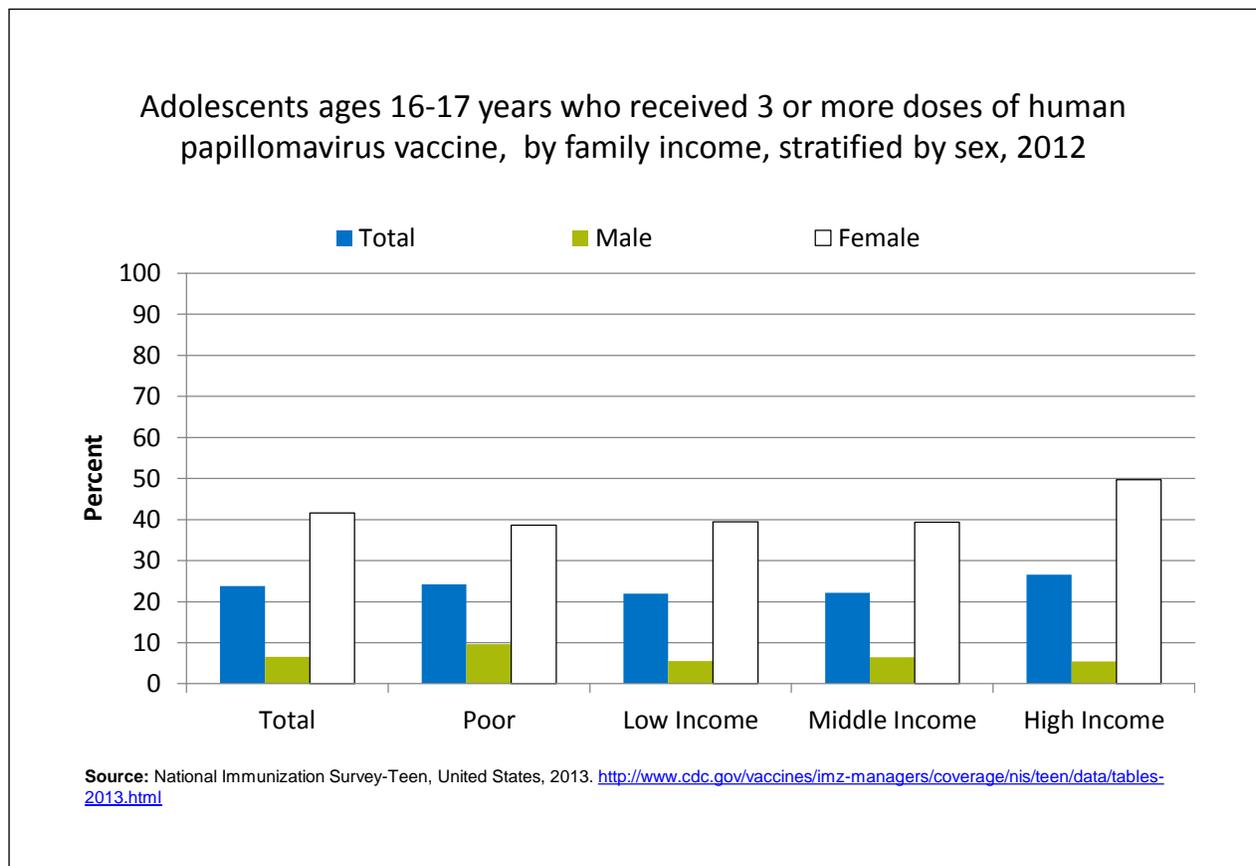
- A licensed HPV vaccine has been available since 2006. It is recommended by the Advisory Committee on Immunization Practices (ACIP) for routine vaccination of adolescent girls at age 11 or 12 years.<sup>14,15</sup>
- In 2011, ACIP recommended quadrivalent HPV (HPV4) for routine vaccination of adolescent boys at age 11 or 12 years.<sup>16</sup>
- The vaccine can be safely co-administered with other routinely recommended vaccines; administration of all age-appropriate vaccines during a single visit is recommended by ACIP.<sup>17</sup>

### Adolescents Ages 13-15 Who Received Human Papillomavirus Vaccine



- **Overall Rate:** In 2012, 17.2% of adolescents ages 13-15 years received 3 or more doses of the human papillomavirus (HPV) vaccine.
- **Groups With Disparities:**
  - There were no statistically significant differences by race/ethnicity in the percentage of adolescents ages 13-15 who received 3 or more doses of the HPV vaccine.
  - Female adolescents ages 13-15 were more likely than male adolescents to receive 3 or more doses of the vaccine.
  - There were no statistically significant differences by family income or geographic location (metropolitan vs. nonmetropolitan) in the percentage of adolescents ages 13-15 who received 3 or more doses of the HPV vaccine (data not shown).

### Adolescents Ages 16-17 Who Received Human Papillomavirus Vaccine

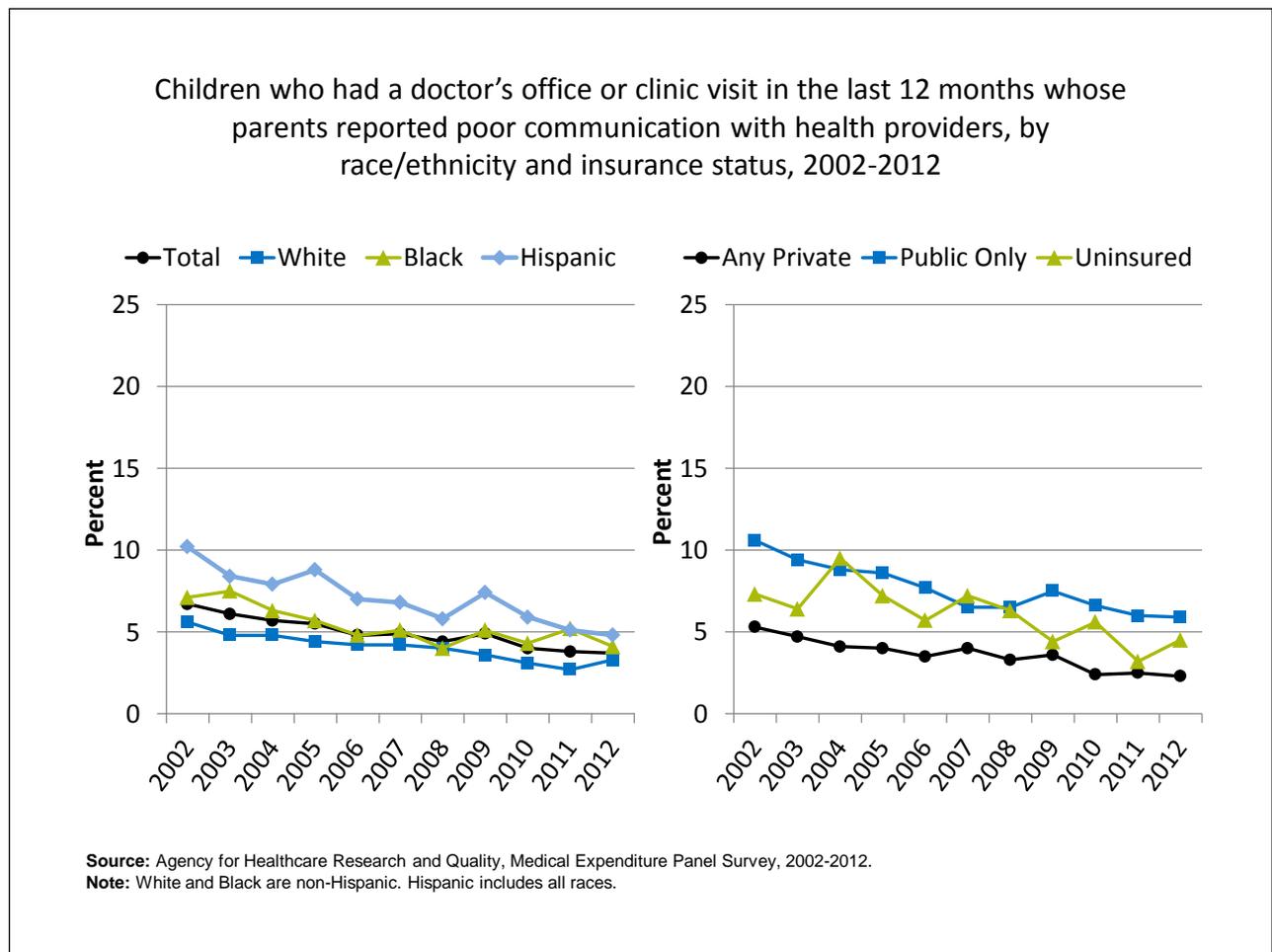


- **Overall Rate:** In 2012, 23.8% of adolescents ages 16-17 years received 3 or more doses of the HPV vaccine.
- **Groups With Disparities:**
  - Female adolescents ages 16-17 were more likely than male adolescents to receive 3 or more doses of the vaccine.
  - There were no statistically significant differences by income in the percentage of adolescents ages 16-17 who received 3 or more doses of the HPV vaccine.
  - There were no statistically significant differences between Asian, Black, and White adolescents ages 16-17 in the percentage who received 3 or more doses of the vaccine (data not shown).
  - There were no statistically significant differences between adolescents who lived in metropolitan areas and adolescents who lived in nonmetropolitan areas in the percentage who received 3 or more doses of the vaccine (data not shown).

### Person-Centered Care

- Person-centered care has taken a major place in quality measurement and improvement in the United States and elsewhere.<sup>18-21</sup>
- Good communication and demonstrations of respect are two critical aspects of person-centered care.<sup>22,23</sup>

**Children Whose Parents Reported Poor Communication With Health Providers**



**Measure Definition:** Among children 0-17 years of age who had a doctor’s office or clinic visit in the last 12 months, this measure reports the percentage who reported poor communication with health providers. Poor communication is defined as reporting that their health provider sometimes or never: listened carefully, explained things clearly, respected what they or their parents had to say, and spent enough time with them. Parents refers to parents or guardians.

- **Overall Rate:** In 2012, 3.7% of parents reported poor communication with their children’s health provider.
- **Trends:**
  - From 2002 to 2012, the percentage of children whose parents reported poor communication with their health providers decreased from 6.7% to 3.7%.
  - Between 2002 and 2012, the percentage of children whose parents reported poor communication decreased for all racial/ethnic groups.
  - The percentage of publicly insured children whose parents reported poor communication decreased 4.7%, from 10.6% in 2002 to 5.9% in 2012.
  - There were no statistically significant changes in the percentage of uninsured children whose parents reported poor communication.

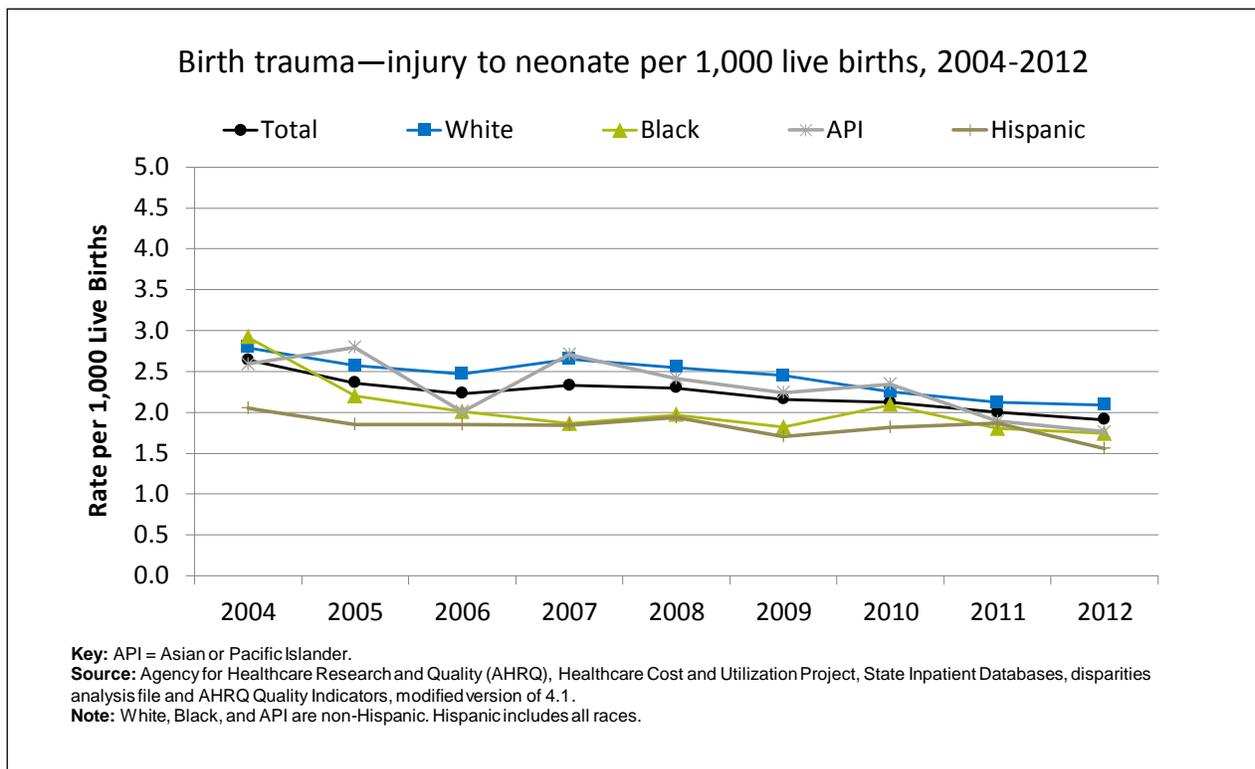
• **Groups With Disparities:**

- In 2012, there were no statistically significant differences between White children (3.3%) and Black children (4.1%) or between Black children (4.1%) and Hispanic children (4.8%) in the percentage with poor communication with their health providers. However, the percentage reporting poor communication with health providers was higher for Hispanic children (4.8%) than for White children (3.3%).
- A gap remained between privately insured and publicly insured children on this measure. In 2012, 2.3% of parents of privately insured children reported poor communication compared with 5.9% of parents of publicly insured children.

**Patient Safety: Birth Trauma**

- Cases included in birth trauma measure:
  - Hemorrhage below the scalp,
  - Cerebral hemorrhage at birth,
  - Spinal cord injury at birth,
  - Facial nerve injury at birth,
  - Bone injury not elsewhere classified at birth,
  - Nerve injury not elsewhere classified at birth, and
  - Birth trauma not elsewhere classified.<sup>24</sup>
- Many of these injuries to neonates may be preventable.<sup>25</sup>

**Birth Trauma**



- **Trends:**
  - Birth trauma-neonatal injury rates fell from 2.6 per 1,000 live births in 2004 to 1.9 per 1,000 live births in 2012.
  - Between 2004 and 2012, birth trauma-neonatal injury rates fell for all racial/ethnic groups, but the decrease for Asians and Pacific Islanders did not achieve statistical significance.
- **Groups With Disparities:**
  - In 2012, White neonates experienced an injury rate of 2.09 per 1,000 live births compared with 1.56 per 1,000 live births for Hispanic neonates. There were no other statistically significant differences between groups.

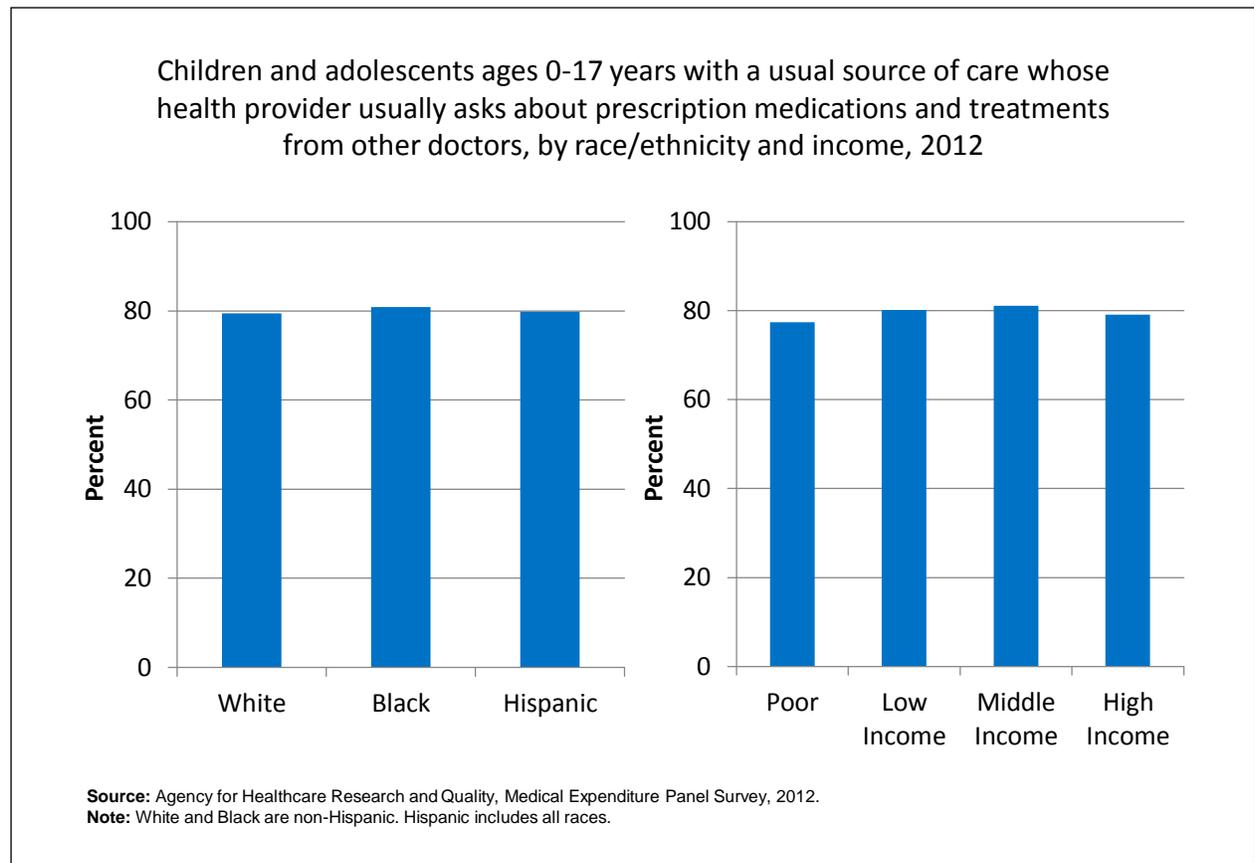
### Care Coordination Measures

- Children and adolescents whose health provider usually asks about prescription medications and treatments from other doctors
- Emergency department (ED) visits with a principal diagnosis related to mental health, alcohol, or substance abuse
- ED visits for asthma

### Communication About Prescription Medications and Treatments From Other Doctors

- Children are at risk for medication errors, including those due to polypharmacy, for several reasons:
  - Their size and physiologic variability and
  - Limited communication ability and other factors.<sup>26</sup>
- Good medical practice includes asking patients about all their medications,<sup>27</sup> which can prevent adverse events.
- Patients are urged by the Food and Drug Administration and others to tell health care providers about all their medications.<sup>28</sup>
- Health care systems are trying strategies to better communicate with patients about medications other health care professionals give them.<sup>29</sup>

### Providers Asking About Prescription Medications and Treatments From Other Doctors



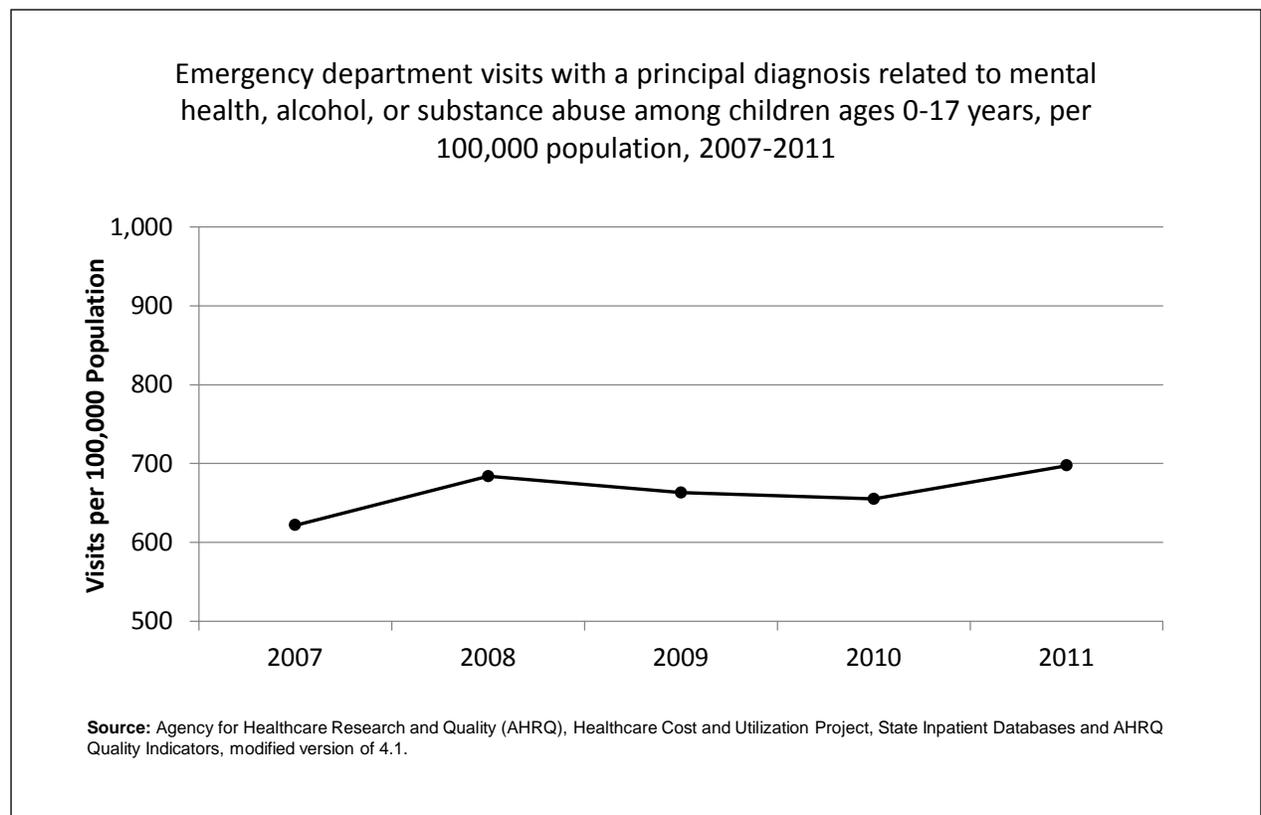
- **Trends:** From 2002 to 2012, the percentage of children and adolescents whose health provider usually asked about medications and treatments from other doctors increased significantly, from 71.1% to 79.5% (data not shown).
- **Groups With Disparities:**
  - In 2012, there were no statistically significant differences between Whites (79.5%), Blacks (80.9%), and Hispanics (79.8%) in the percentage of children whose health provider asked about medications and treatments from other doctors.
  - In 2012, there were no statistically significant differences by income:
    - ◆ Poor, 77.4%
    - ◆ Low income, 80.2%
    - ◆ Middle income, 81.1%
    - ◆ High income, 79.1%

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

- EDs are a common source of care for mental illness when high-quality mental health care is not available in the community.<sup>30</sup>
- Some ED use for mental health and substance abuse problems among young people is seen as preventable with appropriate ambulatory care.

- Mental, emotional, and behavioral health services are lacking for as many as 50 percent of children and adolescents with high needs.<sup>31</sup>
- EDs are often not staffed or equipped to provide optimal psychiatric care, leading to long wait times for appropriate care.<sup>32</sup>
- ED staff observing patients waiting for psychiatric care find it difficult to efficiently care for patients with other medical emergencies.<sup>33</sup>
- Efforts are underway to prevent avoidable ED use through strategies such as case management.<sup>34,35</sup>

### Emergency Department Visits With a Principal Diagnosis Related to Mental Health, Alcohol, or Substance Abuse



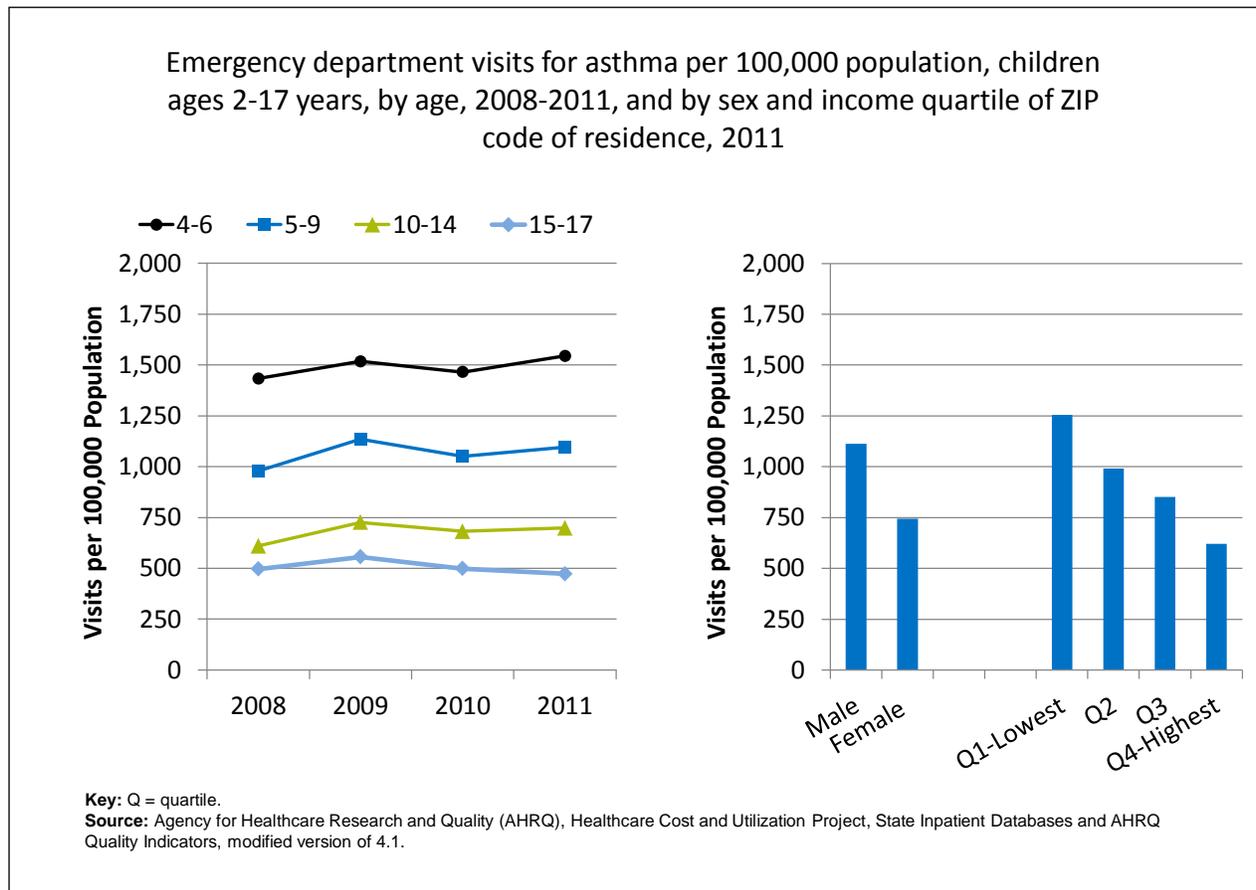
- **Overall:** In 2011, among children ages 0-17 years, there were 697.5 ED visits related to mental health, alcohol, or substance use per 100,000 population.
- **Trends:** There were no statistically significant changes in ED visit rates for children related to mental health, alcohol, or substance use between 2007 (621.8 per 100,000 population) and 2011 (697.5 per 100,000 population).

### Emergency Department Visits for Asthma

- Asthma is a common chronic disease among children.<sup>36</sup>
- ED visits for asthma are often preventable if a child receives high-quality ambulatory preventive and acute care.

- A recent review shows three strategies were most likely to improve provider adherence to asthma guidelines, which indicates high-quality care:
  - Decision support tools
  - Feedback and audit, and
  - Clinical pharmacy support<sup>37</sup>

**Emergency Department Visits for Asthma**



- **Overall Rate:** Emergency department utilization rates for asthma are lower for children ages 15-17 than for children in younger age groups.
- **Trends:** From 2008 to 2011, among children ages 2-17 years, there were no statistically significant changes in ED visit rates for asthma (851.9 per 100,000 population vs. 932.1; data not shown).
- **Groups With Disparities:**
  - In 2011, male children ages 2-17 were 1.5 times as likely as female children to experience an ED visit for asthma (1,112.8 per 100,000 population vs. 743.6).
  - Also in 2011, children whose ZIP code of residence was in the highest income quartile were less likely than children in the first (lowest), second, and third quartiles to have an ED visit for asthma (621.2 per 100,000 population vs. 1,254.5, 990.6, and 851.0, respectively).

## References

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