Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People.™
Morbidity and Mortality Weekly Report (*MMWR*)

Reduction of Racial/Ethnic Disparities in Vaccination Coverage, 1995–2011

Supplements
April 18, 2014 / 63(01);7-12

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Summary

The Presidential Childhood Immunization Initiative was developed in 1993 to address major gaps in childhood vaccination coverage in the United States. Eliminating the cost of vaccines as a barrier to vaccination was one strategy of the Childhood Immunization Initiative; it led to Congressional legislation that authorized creation of the Vaccines for Children program (VFC) in 1994. CDC analyzed National Immunization Survey data for 1995–2011 to evaluate trends in disparities in vaccination coverage rates between non-Hispanic white children and children of other racial/ethnic groups. VFC has been effective in ireducing disparities in vaccination coverage among U.S. children. CDC's Office of Minority Health and Health Equity selected the intervention analysis and discussion that follows to provide an example of a program that has been effective in reducing childhood vaccination coverage-related disparities in the United States.

At its inception in 1994, VFC was implemented in 78 Immunization Action Plan areas that covered the entire United States; within each area, concerted efforts were made to improve childhood vaccination coverage. The findings in this report demonstrate that there have been no racial/ethnic disparities in vaccine coverage for measles-mumps-rubella and poliovirus in the United States since 2005. Disparities in coverage for the diphtheria-tetanus-pertussis/diphtheria-tetanus-acellular pertussis vaccine were absent, declining, or inconsistent during this period, depending on the racial/ethnic group examined. The results in this report highlight the effectiveness of VFC.

Introduction and Background

During 1989–1991, a resurgence of measles in the United States resulted in 55,622 reported cases, approximately 11,000 reported hospitalizations, and 123 reported deaths (*1*–*5*). Affected children were disproportionately inner city or were American Indian, Hispanic, non-Hispanic black, and low-income children aged <5 years who had not been vaccinated (*6*–*11*). Racial/ethnic minority children were at three to 16 times greater risk for measles than were non-Hispanic white children (*10*).

In response to the measles resurgence, the Childhood Immunization Initiative was developed in 1993 to address the major gaps in vaccination coverage among young children in the United States (*12,13*). Eliminating the cost of vaccines as a barrier to vaccination was one strategy of the initiative; it led to creation of the Vaccines for Children program (VFC) in 1994 (*13*). VFC is the largest entitlement program managed by CDC and, since 1994, has provided vaccines at no cost to children who might not otherwise be vaccinated because of inability to pay the cost of vaccines. CDC buys vaccines at a discount and distributes them at no charge to private physicians' offices and public health clinics registered as VFC providers for use in eligible children.

Healthy People 2010 and *Healthy People 2020* (*14*) objectives included a target of 90% vaccination coverage for U.S. children aged 19–35 months for diphtheria, tetanus, and acellular pertussis (DTaP) 4-dose series; poliovirus 3-dose series; 1-dose measles-mumps-rubella vaccine (MMR); *Haemophilus influenzae* type b completed 3-dose series; hepatitis B completed 3-dose series; varicella vaccine; and completed 4-dose series of pneumococcal conjugate vaccines (*14*). Reducing or eliminating health disparities was an overarching goal of *Healthy People 2010* and remains an overarching goal for *Healthy People 2020*. Reducing disparities in childhood vaccination is a key component in achieving the vaccination objectives.

Healthy People 2020 defines a health disparity as "a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage" (*15*). This report uses the *Healthy People 2020* definition of health disparities (*15*). Health disparities adversely affect groups of persons who have systematically experienced greater obstacles to health because of their racial/ethnic group; religion; socioeconomic status; sex; age; mental health; cognitive, sensory, or physical disability; sexual orientation or sex identity; geographic location; or other characteristics historically linked to discrimination or exclusion (*15*). This report describes progress in reducing racial/ethnic disparities in vaccination coverage among children aged 19–35 months, focusing on vaccines recommended before the Childhood Immunization Initiative and the inception of VFC.

CDC's Office of Minority Health and Health Equity selected the intervention analysis and discussion that follows to provide an example of a program that has been effective in reducing vaccination-related disparities in the United States. Criteria for selecting this program are described in the Background and Rationale for this supplement (*16*).

Intervention

VFC is a policy and programmatic intervention. Children aged ≤18 years are entitled to receive VFC vaccines through their VFC-enrolled provider if they are 1) Medicaid-eligible, 2) uninsured (i.e., not covered by any health insurance that pays for doctor visits and hospital stays), 3) American Indian/Alaska Native, or 4) underinsured (i.e., covered by private health insurance that does not cover the costs of all recommended vaccines) and vaccinated at a Federally Qualified Health Center (FQHC) or a Rural Health Clinic (RHC) (*13*).

CDC supports implementation of VFC, which allocates funds to Section 317 for immunization and infrastructure and disburses them to state health departments to administer vaccination programs in the 50 states, the District of Columbia, five urban areas, and eight U.S.-affiliated jurisdictions (*17*). Among the key activities of the state and local-level federally funded vaccination programs are recruitment and training of private providers for VFC to ensure their compliance with VFC requirements, oversight of vaccine ordering activities, and assurance of proper handling and storage of vaccines purchased through VFC. These activities form the foundation of a VFC goal to facilitate VFC-entitled children's and adolescents' consistent use of a primary care "medical home" where all recommended vaccines can be administered and other primary care can comprehensively and consistently be provided (*18*).

This report highlights racial/ethnic disparities for MMR; poliovirus; and diphtheria, tetanus and pertussis–containing vaccines (i.e., DTP/DTaP) because these vaccines were recommended before VFC

was established in 1994. Disparities in coverage for those vaccines are reported in percentage-point differences in estimated vaccination coverage between selected racial/ethnic groups and non-Hispanic whites. Annual coverage estimates are based on the recommendations for routine administration of those vaccines (*19*) that specify one or more doses of MMR, three or more doses of poliovirus vaccine, and four or more doses of DTP/DTaP.

Methods

To assess progress over time in reducing racial/ethnic disparities in childhood vaccination coverage, annual estimated coverage levels for children aged 19–35 months were compared from 1995 to 2011 by using data from the National Immunization Survey (NIS). NIS was established in 1994 as a result of VFC legislation to provide annual population-based estimates of vaccination coverage for each state and for urban areas that, at that time, corresponded to VFC Immunization Action Plan areas.

NIS is conducted annually and uses random-digit–dialed samples of landline telephone numbers to reach households with children aged 19–35 months for the 50 states and selected local areas and U.S.-affiliated jurisdictions, followed by a mail survey to the children's vaccination providers. Vaccination coverage estimates reported using data from the NIS are based on the provider-reported vaccination histories (*20*).

During 1995–2011, the response rate (*21*) of the landline telephone survey of NIS ranged from 62% to 76%, and the percentages of sampled children for whom vaccine providers provided a vaccination history with sufficient detail to accept as a complete report ranged from 62% to 73% (*21*). To address the increasing use of cellular telephones, in 2011 the NIS began including data from an independent sample of households that were contacted by random-digit-dialing of cellular telephone numbers. In 2011, the response rate of the cellular telephone survey was 25%, and the percentage of sampled children for whom vaccine providers provided a vaccination history with sufficient detail to accept as a complete report was 66%. For each survey year, NIS data were weighted to represent the population of children aged 19–35 months, with adjustments to the survey weights that accounted for household nonresponse, nonresponse of physicians to the mail survey, and other factors (*20*).

In this report, estimated vaccination coverage rates were compared for children who were reported as being Hispanic, non-Hispanic white, non-Hispanic black, non-Hispanic American Indian/Alaska Native, and non-Hispanic Asian. Children with other or multiple reported races are not included in this report because of small sample sizes. Estimated percentage point differences in vaccination coverage between a racial/ethnic group and non-Hispanic whites were considered statistically significant if a statistical *z* test comparing coverage rates had a p value <0.05. Differences were considered to be disparities when they were statistically significant and the vaccination coverage rate of a minority racial/ethnic group was lower than that of non-Hispanic whites.

To estimate trends in disparities in coverage rates between children belonging to racial/ethnic minority groups and non-Hispanic whites, a weighted linear regression was used to evaluate how the estimated differences in estimated coverage rates changed linearly over time. The disparity in estimated vaccination coverage rates was determined to have declined significantly over time if the slope of the linear regression was negative and a statistical z test of the estimated slope had a p value <0.05.

Results

VFC Eligibility

In 2011, a total of 54.3% (95% confidence interval [CI]: 53.6%–55.0%) of all children aged 19–35 months were VFC entitled according to the following potentially overlapping VFC entitlement categories: 48.3% (CI = 47.6%–49.0%) were Medicaid-eligible; 4.7% (CI = 4.4%–5.0%) were uninsured; 3.5% (CI = 3.2%–3.8%) were American Indian/Alaska Native; and 0.4% (CI = 0.3%–0.5%) were underinsured and received vaccine doses at an FQHC or RHC. Among all VFC-entitled children aged 19–35 months in

2011, 52.1% (CI = 50.8%–53.4%) were reported as belonging to a racial/ethnic group other than non-Hispanic white.

MMR

Disparities in vaccination coverage for Hispanic, non-Hispanic black, and American Indian/Alaska Native children compared with non-Hispanic white children have been absent for MMR since 2005 (Table 1). MMR coverage for Hispanic children increased from 87.9% in 1995 to 92.4% in 2011, and coverage for non-Hispanic white children remained ≥90% during the same period (Table 1). There were no statistically significant disparities in MMR vaccination coverage between non-Hispanic white and Hispanic children during 2003–2011 (MMR coverage was significantly higher for Hispanic children than for non-Hispanic white children in 2010). Disparities in MMR coverage between Hispanic children and non-Hispanic white children declined significantly at an average of 0.26 percentage points per year. In 1995, Hispanic children had 2.8% lower coverage than non-Hispanic white children; in 2011, MMR coverage was 1.3% higher in Hispanic children than in non-Hispanic white children (Table 1). MMR coverage for non-Hispanic black children increased from 87.1% in 1995 to 90.8% in 2011, and there was no disparity during 2005–2011 (Table 1). Disparities in MMR coverage between non-Hispanic black and non-Hispanic white children declined significantly by an average of 0.23 percentage points per year from 1995 to 2011. Only in 2002 was MMR coverage significantly lower for American Indian/Alaska Native children than for non-Hispanic white children, and MMR coverage was higher for American Indian/Alaska Native children than for non-Hispanic white children from 2007 to 2009 (Table 1). Vaccination coverage differed significantly between non-Hispanic Asian and non-Hispanic white children in 1995, 2003, and 2008, when MMR coverage was significantly higher for non-Hispanic Asian children but otherwise did not differ significantly in any other year. Estimates of MMR coverage have consistently met or exceeded the *Healthy People* target of 90% for most years since 2000 for all racial/ethnic groups (Table 1).

Poliovirus Vaccination

No disparities in poliovirus vaccination coverage between Hispanic children and non-Hispanic white children have been observed since 2003 (Table 2). Regression analysis indicated that the average coverage difference between Hispanic and non-Hispanic white children decreased from approximately 2 to 0 percentage points from 1995 to 2011. No significant disparities in poliovirus vaccination coverage between non-Hispanic black and non-Hispanic white children have been detected since 2006 (Table 2). The trend in disparity of poliovirus vaccination coverage between non-Hispanic black and non-Hispanic white children decreased significantly by an average of 0.22 percentage points per year. No disparities existed between non-Hispanic American Indian/Alaska Native and non-Hispanic white children. Poliovirus vaccination coverage estimates have consistently met or exceeded the *Healthy People* target of 90% for most years since 2000 for all racial/ethnic groups (Table 2).

DTP/DTaP

Disparities in DTP/DTaP vaccination coverage varied by racial/ethnic group during 1995–2011 for Hispanic, non-Hispanic black, and non-Hispanic American Indian/Alaska Native children (Table 3). Hispanic children had significantly lower DTP/DTaP 4-dose coverage than did non-Hispanic white children from 1995 to 2005, except in 2001 when the difference in coverage was not statistically significant between those groups. Since 2003, estimated coverage among Hispanic children has been >80%, and the number of statistically significant disparities in DTP/DTaP coverage has decreased since 2005. Coverage was significantly lower for non-Hispanic black children than for non-Hispanic white children in 16 of the 17 years during 1995–2011; the disparities in estimated DTP/DTaP coverage between non-Hispanic black and non-Hispanic white children did not decrease significantly during 1995–2011. DTP/DTaP coverage for non-Hispanic Asian children did not differ significantly from that of non-Hispanic white children, except in 2008 and 2011, when coverage was significantly higher for non-Hispanic Asian children (Table 3). Disparities in DTP/DTaP coverage between non-Hispanic American

Indian/Alaska Native and non-Hispanic white children were inconsistent and sporadic during 1995–2011, and those disparities did not decline significantly over those years. Estimated DTP/DTaP coverage did not reach the *Healthy People* target of 90% (within confidence limits) for any racial or ethnic group.

Discussion

Since 1995, annual estimates of MMR vaccination coverage and poliovirus vaccination coverage increased among all children aged 19–35 months, and since 2007, disparities between racial/ethnic minorities and non-Hispanic white children for these vaccines has been nonexistent. Disparities in coverage for the 4-dose DTP/DTaP series between racial/ethnic minority groups and non-Hispanic white children are absent (non-Hispanic Asian versus non-Hispanic white children), or not consistently present (non-Hispanic American Indian/Alaska Native), or have been decreasing (Hispanic and non-Hispanic black children). Furthermore, although the statistical analysis indicated disparities in 4-dose DTP/DTaP series coverage in 2011 in non-Hispanic black and non-Hispanic American Indian/Alaska Native children compared with non-Hispanic white children, a recent report indicates that after adjustment for poverty status, only the disparity between non-Hispanic American Indian/Alaska Native and non-Hispanic white children remained significant (*21*). Minority children are disproportionately poorer than non-Hispanic white children, (*22*) which might explain the 2011 disparity in vaccination coverage between non-Hispanic white and non-Hispanic black children.

High vaccination coverage needs to be maintained among all racial/ethnic groups to reduce vaccine-preventable diseases nationwide. The success of the U.S. immunization program, fostered by VFC, in sustaining high MMR coverage levels contributed to the end of endemic measles transmission in 2000, and sustained measles vaccination coverage >90% has helped prevent the return of endemic measles to the United States (*23,24*). Increasing access and eliminating cost as barriers to vaccination have expanded the impact of the VFC, as evidenced by the declines in disparities illustrated in this report.

The *Healthy People 2020* objective of achieving 90% vaccination coverage in children aged 19–35 months has been surpassed for MMR and polio vaccination in most racial/ethnic groups for most years since 1995. Although DTP/DTaP series coverage increased during 2005–2011 from coverage in previous years in all racial/ethnic groups, coverage remains below the *Healthy People 2020* target for all groups. Strategies can be implemented to promote increasing the fourth dose of DTP/DTaP and to maintain or improve coverage for the other vaccines for which *Healthy People 2020* vaccination coverage goals have not been achieved. These strategies would include reducing missed opportunities for vaccination during all visits to primary health care providers (25).

Limitations

The findings in this report are subject to at least two limitations. First, the moderate response rates of the telephone portion of the NIS provide the potential for selection response in estimates of vaccination coverage derived from the NIS. However, analyses of all sources of error associated with noncoverage of the target population of children aged 19–35-months found that this bias might be no more than approximately 1.7 percentage points (*26*). Second, certain vaccination providers of children with multiple vaccination providers might not have replied to the NIS mail survey. Although this record scattering does result in biased estimates of vaccination coverage, estimates of disparities in vaccination coverage are not affected (*27*).

Conclusion

Disparities in vaccination coverage between non-Hispanic white children and children of other racial/ethnic groups have declined for vaccines that have been routinely recommended since 1995. The many interventions and programs implemented during this period, including VFC, have built a successful infrastructure for vaccination services. Reduction of disparities for these vaccines demonstrates that the strengthening of the immunization program since 1994 does reach all groups of children, laying the foundation for equity in access to new vaccines introduced over the past decade. By

providing increased access to vaccination services, VFC has expanded protection of all children from vaccine-preventable diseases.

Acknowledgments

The authors acknowledge Anne Schuchat, MD; Shannon Stokely, MPH; James A. Singleton, PhD; and Megan C. Lindley, MPH, for their review of the drafts of this report.

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TABLE 1. Estimated measles, mumps, rubella (≥1 doses) vaccination coverage for children aged 19-35 months, by survey year and racial/ethnic category — National Immunization Survey, United States, 1995–2011

Year	Hispanic		Non-Hispanic white*		Non-Hispanic black		Non-Hispanic AI/AN		Non-Hispanic Asian	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
1995	87.9	(85.1–90.7)	90.7	(89.8–91.6)	87.1	(84.7–89.5)†	86.8	(80.2–93.4)	94.8	(91.7–97.9)†
1996	88.1	(86.1–90.1)†	91.1	(90.3–91.9)	89.4	(87.7–91.1)	88.5	(82.1–94.9)	93.0	(90.5–95.5)
1997	88.4	(86.4–90.4)†	91.1	(90.4–91.8)	88.7	(86.8–90.6)†	91.7	(87.8–95.6)	89.7	(86.1–93.3)
1998	91.0	(89.5–92.5)†	92.7	(92.0–93.4)	88.7	(86.8–90.6)†	91.3	(84.5–98.1)	92.0	(88.6–95.4)
1999	89.8	(88.0–91.6)†	91.9	(91.2–92.6)	89.2	(87.0–91.4)†	91.1	(86.8–95.4)	92.9	(90.3–95.5)
2000	89.3	(87.7–90.9)	91.0	(90.3–91.7)	87.9	(86.1–89.7)†	87.2	(82.1–92.3)	88.2	(81.6–94.8)
2001	92.1	(90.8–93.4)	91.3	(90.5–92.1)	88.8	(86.9–90.7)†	95.1	(91.8–98.4)†	89.7	(86.1–93.3)
2002	90.5	(88.8–92.2)†	92.6	(91.8–93.4)	90.3	(88.4–92.2)†	84.3	(76.6–92.0)†	94.6	(92.3–96.9)
2003	92.7	(91.3–94.1)	93.2	(92.4–94.0)	92.1	(90.4–93.8)	91.8	(86.5–97.1)	96.0	(94.2–97.8)†
2004	93.2	(92.0–94.4)	93.5	(92.8–94.2)	90.7	(88.7–92.7)†	88.8	(82.6–95.0)	94.1	(91.4–96.8)
2005	91.1	(89.6–	91.4	(90.5–92.3)	91.9	(90.2–93.6)	89.6	(83.0–96.2)	91.9	(87.7–96.1)

		92.6)								
2006	92.0	(90.5–93.5)	92.8	(92.1–93.5)	90.9	(89.0–92.8)	89.3	(83.9–94.7)	94.7	(92.0–97.4)
2007	92.6	(91.0–94.2)	92.1	(91.3–92.9)	91.5	(89.5–93.5)	96.2	(93.0–99.4)†	93.9	(90.4–97.4)
2008	92.8	(91.4–94.2)	91.3	(90.3–92.3)	92.0	(90.1–93.9)	95.8	(93.1–98.5)†	94.7	(92.2–97.2)†
2009	89.3	(87.3–91.3)	90.8	(89.9–91.7)	88.2	(85.5–90.9)	94.9	(91.8–98.0)†	90.7	(86.4–95.0)
2010	92.9	(91.3–94.5)†	90.6	(89.7–91.5)	92.1	(90.2–94.0)	93.4	(87.1–99.7)	91.7	(88.1–95.3)
2011	92.4	(90.6–94.2)	91.1	(90.2–92.0)	90.8	(88.6–93.0)	94.8	(90.0–99.6)	93.9	(91.1–96.7)

Abbreviations: AI/AN = American Indian/Alaska Native; CI = confidence interval.

* Referent category.

† Significantly different from the estimated percentage for non-Hispanic whites for the specified survey year ($p<0.05$).

TABLE 2. Estimated poliovirus (≥3 doses) vaccination coverage for children aged 19-35 months, by survey year and racial/ethnic group — National Immunization Survey, United States, 1995-2011

Year	Hispanic		Non-Hispanic white*		Non-Hispanic black		Non-Hispanic AI/AN		Non-Hispanic Asian	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
1995	87.2	(84.5–89.9)	89.0	(88.1–89.9)	84.2	(81.4–87.0)†	86.5	(79.4–93.6)	90.0	(85.4–94.6)
1996	89.4	(87.6–91.2)†	91.6	(90.9–92.3)	89.8	(88.0–91.6)	90.2	(84.2–96.2)	89.8	(85.9–93.7)
1997	89.6	(87.9–91.3)	91.2	(90.5–91.9)	89.0	(87.3–90.7)†	89.5	(83.8–95.2)	88.5	(84.9–92.1)
1998	88.7	(86.8–90.6)†	91.8	(91.1–92.5)	87.7	(85.7–89.7)†	84.6	(76.1–93.1)	93.2	(90.3–96.1)
1999	89.1	(87.5–90.7)	89.9	(89.1–90.7)	85.9	(83.5–88.3)†	86.7	(78.3–95.1)	90.5	(87.5–93.5)
2000	87.2	(85.4–89.0)†	89.9	(89.0–90.8)	86.5	(84.4–88.6)†	89.5	(84.8–94.2)	93.0	(90.5–95.5)†

2001	90.8	(89.3–92.3)	89.6	(88.7–90.5)	84.2	(81.9–86.5)†	87.8	(79.7–95.9)	89.8	(86.5–93.1)
2002	90.4	(88.8–92.0)	91.2	(90.4–92.0)	87.4	(85.3–89.5)†	80.9	(69.9–91.9)	91.6	(88.5–94.7)
2003	90.1	(88.5–91.7)†	93.0	(92.3–93.7)	89.2	(87.3–91.1)†	91.3	(85.4–97.2)	91.3	(87.7–94.9)
2004	91.2	(89.7–92.7)	92.1	(91.3–92.9)	90.4	(88.6–92.2)	86.5	(78.9–94.1)	92.8	(90.0–95.6)
2005	92.3	(90.7–93.9)	91.4	(90.4–92.4)	91.1	(89.1–93.1)	83.7	(73.6–93.8)	92.9	(88.7–97.1)
2006	93.3	(92.2–94.4)	93.3	(92.6–94.0)	90.4	(88.5–92.3)†	91.0	(85.8–96.2)	92.4	(87.3–97.5)
2007	93.0	(91.4–94.6)	92.6	(91.7–93.5)	91.1	(89.0–93.2)	94.8	(89.3–100.0)	95.0	(92.4–97.6)
2008	94.3	(93.1–95.5)	93.6	(92.8–94.4)	91.5	(88.7–94.3)	90.6	(85.0–96.2)	96.5	(94.4–98.6)†
2009	92.5	(90.7–94.3)	93.3	(92.5–94.1)	90.9	(88.6–93.2)	92.2	(86.7–97.7)	94.0	(90.6–97.4)
2010	93.8	(92.2–95.4)	93.2	(92.4–94.0)	94.0	(92.4–95.6)	94.6	(91.1–98.1)	92.8	(89.3–96.3)
2011	93.8	(92.4–95.2)	93.9	(93.1–94.7)	93.9	(92.3–95.5)	88.1	(80.7–95.5)	96.5	(94.8–98.2)†

Abbreviations: AI/AN = American Indian/Alaska Native; CI = confidence interval.

* Referent category.

† Significantly different from the estimated percentage for non-Hispanic whites for the specified survey year ($p<0.05$).

TABLE 3. Estimated diphtheria, tetanus, acellular pertussis (≥4 doses) vaccination coverage for children aged 19-35 months, by survey year and racial/ethnic group — National Immunization Survey, United States, 1995–2011

Year	Hispanic		Non-Hispanic white*		Non-Hispanic black		Non-Hispanic AI/AN		Non-Hispanic Asian	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
1995	75.2	(71.7–78.7)†	80.6	(79.4–81.8)	74.8	(71.6–78.0)†	71.2	(62.0–80.4)†	83.9	(78.0–89.8)
1996	77.1	(74.6–	82.5	(81.5–83.5)	78.7	(76.3–81.1)†	84.6	(77.9–91.3)	84.2	(80.0–88.4)

		79.6)†						
1997	77.6	(75.1–80.1)†	83.6	(82.6–84.6)	77.2	(74.7–79.7)†	79.8	(72.8–86.8)	80.4	(75.8–85.0)
1998	80.3	(78.0–82.6)†	86.3	(85.4–87.2)	77.3	(74.8–79.8)†	82.8	(74.5–91.1)	89.3	(86.1–92.5)
1999	80.2	(78.1–82.3)†	85.1	(84.1–86.1)	78.7	(76.0–81.4)†	78.0	(68.7–87.3)	86.8	(83.1–90.5)
2000	78.5	(76.4–80.6)†	83.5	(82.5–84.5)	75.3	(72.6–78.0)†	74.7	(67.5–81.9)†	84.0	(80.0–88.0)
2001	82.8	(80.9–84.7)	83.0	(82.0–84.0)	75.4	(72.7–78.1)†	77.4	(68.4–86.4)	83.7	(79.6–87.8)
2002	79.2	(77.0–81.4)†	84.4	(83.4–85.4)	75.8	(72.9–78.7)†	65.9	(54.4–77.4)†	88.0	(84.5–91.5)
2003	81.9	(79.9–83.9)†	87.5	(86.6–88.4)	79.9	(77.2–82.6)†	80.1	(72.6–87.6)	88.5	(84.6–92.4)
2004	84.1	(82.2–86.0)†	87.7	(86.7–88.7)	79.5	(76.6–82.4)†	76.7	(68.2–85.2)†	89.6	(86.4–92.8)
2005	83.7	(81.4–86.0)†	87.1	(86.0–88.2)	84.1	(81.6–86.6)†	76.7	(66.3–87.1)	88.8	(84.2–93.4)
2006	84.5	(82.6–86.4)	86.6	(85.5–87.7)	81.2	(78.6–83.8)†	82.7	(74.5–90.9)	86.0	(80.5–91.5)
2007	83.8	(81.6–86.0)	85.3	(84.1–86.5)	82.3	(79.6–85.0)†	86.4	(79.3–93.5)	87.5	(83.5–91.5)
2008	84.9	(82.9–86.9)	85.0	(83.8–86.2)	80.1	(76.7–83.5)†	82.0	(74.8–89.2)	92.3	(88.6–96.0)†
2009	82.9	(80.4–85.4)†	85.8	(84.7–86.9)	78.6	(75.5–81.7)†	82.1	(74.0–90.2)	86.6	(81.1–92.1)
2010	84.4	(81.9–86.9)	84.5	(83.2–85.8)	83.7	(81.0–86.4)	81.8	(74.3–89.3)	88.3	(84.3–92.3)
2011	84.1	(81.9–86.3)	85.0	(83.7–86.3)	81.3	(78.4–84.2)†	72.7	(63.2–82.2)†	92.0	(89.5–94.5)†

Abbreviations: AI/AN = American Indian/Alaska Native; CI = confidence interval.

* Referent category.

† Significantly different from the estimated percentage for non-Hispanic whites for the specified survey year ($p<0.05$).

Page last reviewed: April 18, 2014
Page last updated: April 18, 2014
Content source: Centers for Disease Control and Prevention

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