

County-Level Trends in Vaccination Coverage Among Children Aged 19–35 Months — United States, 1995–2008



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Front cover photo: Toddler receives a vaccination (Photo/CDC).

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County-Level Trends in Vaccination Coverage Among Children Aged 19–35 Months — United States, 1995–2008

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Abstract

Problem/Condition: Estimated trends in county-level vaccination coverage compared with national health objectives and associated with other variables (e.g., access to care, economic conditions, and demographic characteristics) have not been reported previously.

Reporting Period: 1995–2008.

Description of System: The National Immunization Survey (NIS) is an ongoing, random-digit-dialed telephone survey that gathers vaccination coverage data from households with children aged 19–35 months in 50 states and selected urban areas and territories.

Results: During 1995–2008, 185,336 children aged 19–35 months sampled by NIS had adequate provider data and lived in one of the 257 counties where the combined sample size for at least one of the seven biennial periods during 1995–2008 was ≥ 35 . Statistically significant increases in estimated vaccination coverage occurred in 27 of 233 counties (12%) with ≥ 4 doses of diphtheria and tetanus toxoids and acellular pertussis (DTaP); for 38 of 233 counties (16%) with ≥ 3 doses of polio vaccine; eight of 233 counties (3%) with ≥ 1 dose of measles, mumps, and rubella (MMR); nine of 233 counties (4%) with ≥ 3 doses of *Haemophilus influenzae* type B (Hib) vaccine; 193 of 233 counties (83%) with ≥ 3 doses of hepatitis B vaccine; 228 of 232 counties (98%) with ≥ 1 dose of varicella vaccine; and 187 of 192 counties (97%) with ≥ 4 doses of 7-valent pneumococcal conjugate vaccine (PCV7). Six of 233 (2%) counties had significant decreases in vaccination coverage for Hib. During the 2007–2008 biennial period, the percentage of 193 counties with estimated vaccine coverage that achieved the *Healthy People 2010* objective of 90% vaccination coverage was 8% for DTaP/DTP vaccines, 93% for polio vaccine, 86% for MMR vaccine, 71% Hib vaccine, 94% for hepatitis B vaccine, 50% for varicella vaccine, and $< 1\%$ for PCV7. Among 104 counties, the estimated percentage of children aged 6–23 months who were administered ≥ 1 dose of the seasonal influenza vaccine during the 2007–2008 influenza vaccination season was 39.0% (range: 22.2%–68.8%). For most vaccines and vaccine series, higher levels of county-level vaccination coverage correlated with a higher number of pediatricians per capita, a higher number of people living in group quarters (e.g., college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, correctional facilities, workers' dormitories, and facilities for persons experiencing homelessness) per capita, higher per capita income, a higher number of Hispanics per capita, and having a service-dependent economy. Lower levels of county-level vaccination coverage correlated with higher number of persons in poverty per capita, a higher percentage of black children among children aged < 5 years, higher levels of housing stress (i.e., $\geq 30\%$ income for rent or mortgage and certain inadequate housing characteristics), a higher number of pediatric intensive care beds per capita, and designation as a nonmetropolitan county with an economy dependent on recreation activities.

Interpretation: During 1995–2008, significant increases in vaccination coverage for individual vaccines occurred in many counties for the newly recommended vaccines, varicella and PCV7.

Public Health Actions: In counties that did not meet the *Healthy People 2010* vaccination coverage objectives, states should evaluate strategies to achieve these objectives. *The Guide to Community Preventive Services* provides a summary of interventions that increase community vaccination coverage, including provider reminder-recall systems that remind parents to return to clinics to administer missed doses to children and assessment and feedback on the performance of vaccination providers. In counties where significant decreases in Hib vaccination coverage occurred, additional research is warranted to determine whether the recent shortage in the Hib vaccine was the sole cause of these decreases. In counties with a high proportion of children living in

poverty, interventions to increase vaccination coverage among these children are needed. Additional research is required to understand potential barriers to increased coverage with these vaccines, the role of vaccination providers and their resource constraints, and factors associated with access to health care among children.

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Introduction

County-level vaccination coverage estimates are important, both because public health issues often originate in small geographic areas and because certain public health actions are most effective at the local level. For example, a study conducted during 1996–2001 in inner-city locations in Atlanta, Georgia, found a high rate of unvaccinated children among racial/ethnic minorities living in the surveyed neighborhoods (1). In Sullivan County, New York, an investigation by the New York State Department of Health identified a mumps outbreak of among 31 persons (nine not vaccinated, 16 administered 2 doses, four administered 1 dose, two with unknown vaccination history) in a population with 96% vaccination coverage (2). Clusters of children who did not receive any vaccine doses were found in specific geographic areas, with the largest numbers of unvaccinated children living in counties in California, Illinois, New York, Washington, Pennsylvania, Texas, Oklahoma, Colorado, Utah, and Michigan (3). In Ashland, Oregon, 12.3% of all children attending public schools and 18.8% of children attending day-care facilities in 2002 claimed an exemption from mandatory vaccination laws, compared with 2.4% for the entire state (4,5).

Children of parents who refuse vaccine doses have an increased risk for acquiring and transmitting measles and pertussis (6), and in small geographic areas with a preponderance of children whose parents have refused vaccine doses, an increased risk for pertussis and measles exists among members in the community (6–8). In 2008, the index cases for three of four measles outbreaks in small geographic areas were in children whose parents had refused vaccine doses (9,10). Measles is not endemic in the United States, and index cases in the measles outbreaks were imported from other counties.

Although a particular state estimate of vaccination coverage might be high overall, geographic areas with underimmunized children can exist within a state when unvaccinated children or children with lower vaccination coverage live in the same geographical location. In this case, vaccination coverage in those areas might not be sufficient to inhibit the widespread transmission of a vaccine-preventable disease (11).

To characterize trends in estimated vaccination coverage among children aged 19–35 months in 257 selected U. S. counties, CDC analyzed 1995–2008 data from the National Immunization Survey (NIS) to determine achievement of *Healthy People 2010* objectives of 90% vaccination coverage for individual vaccines and 80% for vaccine series of certain routinely recommended childhood vaccines (12). Data were analyzed to identify increases and decreases in vaccination coverage among children aged 19–35 months in selected counties and associations between county-level vaccination coverage

rates and county-level indices of access to care, economic conditions, and demographic composition. Estimated trends in vaccination coverage in small geographic areas such as counties might assist local public health officials with determining the current and past level of vaccination coverage and whether the coverage is likely to increase or decrease if current trends persist. This type of information might help local public health officials improve vaccination coverage.

Methods

NIS is an annual survey conducted by CDC to monitor vaccination coverage rates among U.S. children aged 19–35 months. During 1995–2008, NIS was conducted in all 50 states and the District of Columbia and selected urban areas. Data are collected in NIS in two phases. The first phase is a list-assisted random-digit-dialed telephone survey of households with landline telephones and an age-eligible child (aged 19–35 months). At the conclusion of the interview, the interviewer requests parental permission to contact the children's vaccination providers. The second phase is a mail survey of doctors and other vaccination providers named by the respondent when permission is given. In all survey years during 1995–2008, provider-reported vaccination histories obtained from the mailed survey were used to evaluate vaccination status. During 1995–2008, the response rate (13) of the telephone survey of NIS ranged from 65% to 76%, and the percentages of sampled children with complete telephone interviews having a sufficiently detailed vaccination history returned from vaccination providers to accept as a complete report ranged from 62% to 73%. The response rate of the telephone portion of NIS is the product of the percentage of telephone numbers sampled from NIS list-assisted sampling frame that were determined to be working residential telephone numbers, the percentage of sampled residential telephone numbers that were successfully screened to determine whether the household had children aged 19–25 months, and the percentage of sampled households with children aged 19–35 months that had completed the NIS telephone interview. Detailed descriptions of the statistical methods used by NIS have been published previously (14,15).

Measures of Childhood Vaccination Status

In 2009, 10 vaccines were recommended for routine use among children aged 0–24 months (16). The Advisory Committee on Immunization Practices (ACIP) recommendations for routine administration of childhood vaccines were used to evaluate the vaccination status of sampled children for all seven biennial periods during 1995–2008, regardless of

vaccine shortages during which ACIP issued interim recommendations (Box 1). Sampled children were determined to be up to date with respect to selected vaccines if, by the date of the NIS telephone interview, they had been administered ≥ 4 doses of diphtheria and tetanus toxoids and acellular pertussis or diphtheria and tetanus toxoids and pertussis (DTaP/DTP) vaccine; ≥ 3 doses of polio vaccine; ≥ 1 dose of measles, mumps, and rubella (MMR) vaccine; ≥ 3 doses of *Haemophilus influenzae* type B (Hib) vaccine; ≥ 3 doses of hepatitis B vaccine; ≥ 1 dose of varicella vaccine; ≥ 2 doses of hepatitis A vaccine; and ≥ 4 doses of the 7-valent pneumococcal conjugate vaccine (PCV7) (Box 2). For a given survey year, sampled children aged 6–23 months were considered to be up to date for the seasonal influenza vaccine if they were administered 1 dose of the seasonal influenza vaccine during the most recent seasonal influenza season, unless they were not administered an influenza vaccine dose before the most recent influenza season, in which case they required 2 doses of the vaccine during the most recent influenza season (17). Other measures of vaccination coverage that were evaluated include ≥ 3 doses of DTaP/DTP, ≥ 3 doses of PCV7, ≥ 1 dose of the seasonal influenza vaccine, and ≥ 1 dose of hepatitis A vaccine.

Sample Sizes and Number of Counties with Coverage Estimates

To ensure the confidentiality of survey information during each of the seven biennial periods (1995–1996, 1997–1998, 1999–2000, 2001–2002, 2003–2004, 2005–2006, and 2007–2008), vaccination coverage was estimated only for counties where the sample size of children with sufficient vaccination and health-care provider data from the mailed survey portion of NIS was ≥ 35 for the combined survey years during the biennial period and ≥ 14 for each year during the biennial period.

For each of the 257 counties (among the 3,141 counties in the United States) that met the sample size requirement for at least one biennial period, an averaged estimate over the biennial period was calculated. The estimate of the number of children aged 19–35 months as of July 1, 2007, living in the 257 counties was determined from U.S. Census data (18), as well as the rank of those 257 counties according to their population of children aged 19–35 months as of July 1, 2007 (Table 1). In addition, the number of counties for which estimates were reported for each biennial period and vaccine or vaccine series type were calculated (Table 2). Because the sample size in counties fluctuated from year to year, not all counties met the sample size requirement in every biennial period. If not achieved for a biennial period, estimates were reported for fewer than 257 counties (Table 2). During 1995–2008, 185,336 children

BOX 1. Biennial periods in which recommended childhood vaccines were included in the National Immunization Survey during 1995–2008

DTP/DTaP: 1995–2008*
Polio: 1995–2008
MMR: 1995–2008
Hib: 1995–2008
Hepatitis B: 1995–2008
Varicella†: 1997–2008
PCV7‡: 2003–2008
Seasonal influenza¶: 2003–2008
Hepatitis A:** 2003–2008

* Includes the following biennial periods: 1995–1996, 1997–1998, 1999–2000, 2001–2002, 2003–2004, 2005–2006, and 2007–2008.

† Varicella vaccine was recommended by ACIP in 1996. (Source: CDC. Prevention of varicella: recommendations of the Advisory Committee on Immunization Practices [ACIP]. MMWR 1996;45[No. RR-11].)

‡ PCV7 was recommended by ACIP in 2000. (Source: CDC. Preventing pneumococcal disease among infants and young children: recommendations of the Advisory Committee on Immunization Practices [ACIP]. MMWR 2000;49[No. RR-9].)

¶ The initial 2002 ACIP recommendation for routine administration during the 2001–2003 season with 1 or 2 doses of influenza vaccine for children aged 6–23 months encouraged vaccination of this age group when feasible. (Source: CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices [ACIP]. MMWR 2002;51[No. RR-3].) In 2004, ACIP recommended 1 or 2 doses of influenza vaccination for children aged 6–23 months. (Source: CDC. Prevention and control of influenza: recommendations of the Advisory Committee on Immunization Practices [ACIP]. MMWR 2004;53[No. RR-6].) Influenza vaccination coverage estimates in each biennial period represent an average of two influenza seasons (e.g., the 2003–2004 biennial period represents an average of the 2002–03 and 2003–04 influenza seasons as estimated by the 2003 and 2004 NIS data, respectively).

** Hepatitis A vaccine was recommended by ACIP for routine administration in 2006. (Source: CDC. Prevention of hepatitis A through active or passive immunization: recommendations of the Advisory Committee on Immunization Practices [ACIP]. MMWR 2006;55[No. RR-7].)

BOX 2. Vaccine components of selected vaccine series

4:3:1 series: ≥ 4 doses DTaP/DTP vaccine, ≥ 3 doses of polio vaccine, ≥ 1 dose of MMR vaccine
4:3:1:3 series: 4:3:1 plus ≥ 3 doses Hib vaccine
4:3:1:3:3 series: 4:3:1:3 plus ≥ 3 doses of hepatitis B vaccine
4:3:1:3:3:1 series: 4:3:1:3:3 plus ≥ 1 dose of varicella vaccine
4:3:1:3:3:1:4 series: 4:3:1:3:3:1 plus ≥ 4 doses of PCV7

aged 19–35 months sampled by NIS had adequate provider data and lived in one of the 257 counties where the combined sample size for at least one of the seven biennial periods during 1995–2008 was ≥ 35 .

Statistical Analysis

Coverage rates for the seven biennial periods were estimated using James-Stein statistical methods (19) to obtain estimates with greater precision. James-Stein estimates of vaccination coverage were obtained for each vaccine and vaccine series by averaging the two county-level annual estimates for each biennial period and then, for each biennial period, modeling the averaged estimates using multivariable regression as a function of 35 variables derived from the U.S. Department of Health and Human Services Area Resource File. Estimates were compared with the *Healthy People 2010* vaccination coverage objectives of 90% vaccination coverage for individual vaccines and 80% for vaccine series to determine which counties achieved the *Healthy People 2010* objectives.

Variables from the Area Resource File, including county-level indices of access to care, economic conditions, and demographic composition (Table 2), were used to evaluate the association between averaged county-level vaccination coverage rates and county-level indices of access to care, economic conditions, and demographic composition. Forward stepwise regression was used to select predictors among the 35 variables to explain variation in the log odds of averaged county estimates.

Among the 257 counties that achieved the sample size requirement for at least two biennial periods, trends were evaluated across time by comparing the difference of the James-Stein composite estimate for the earliest biennial period with the most recent biennial period. A *p* value of < 0.05 from a one-sided statistical *z* score test was considered statistically significant.

Although comparison of the 1995–1996 and 2007–2008 biennial periods was preferred, certain counties did not have large enough sample sizes to protect the confidentiality of survey respondents during these periods. Therefore, the trend analysis included counties that met the sample size requirement for at least two biennial periods at any time during 1995–2008 (comparing the earliest and most recent periods), and the overall number of counties used to examine trends differed from the number of counties studied (Table 3).

Results

Representation of Selected Counties

During the 2007–2008 biennial period, a total of 20,552 children aged 19–35 months who were sampled by NIS had 1) sufficient provider data returned from the mail survey sent to the vaccination providers of the sampled children and 2) lived in the 193 counties where the sample size was ≥ 35 for the combined years and ≥ 14 for each survey year. During the 2007–2008 biennial period, the percentage of children aged 19–35 months living in these 193 counties comprised 49% of all children aged 19–35 months living in the United States. County-level estimates from the 2007–2008 biennial period includes 106 of the 150 counties with the greatest number of children aged 19–35 months as of July 1, 2007, as estimated from U.S. Census data.

Estimated County-Level Vaccination Coverage for Individual Vaccines During 2007–2008

During the 2007–2008 biennial period, estimated vaccination coverage ranges were as follows for individual vaccines: ≥ 3 doses of DTaP/DTP ranged from 91.1% in Clark County, Nevada, to 97.4% in New York County, New York (Table 4); ≥ 4 doses of DTaP/DTP ranged from 72.2% in Clark County, Nevada, to 95.6% in Grafton County, New Hampshire (Table 5); ≥ 3 doses of polio ranged from 86.8% in Pierce County, Washington, to 96.8% in Washington County, Rhode Island (Table 6); ≥ 1 dose of MMR ranged from 86.4% in Clark County, Nevada, to 96.6% in Suffolk County, Massachusetts (Table 7); ≥ 3 doses of Hib ranged from 79.2% in San Juan County, New Mexico, to 96.5% in Suffolk County, Massachusetts (Table 8); ≥ 3 doses of hepatitis B vaccine ranged from 85.8% in Clark County, Nevada, to 96.2% in New Castle, Delaware (Table 9); ≥ 1 dose of varicella vaccine ranged from 74.9% in Flathead County, Montana, to 95.0% in Hartford County, Connecticut (Table 10); ≥ 4 doses of PCV7 ranged from 57.8% in Hinds County, Mississippi, to 91.0% in Howard County, Maryland (≥ 3 doses also was measured) (Tables 11 and 12); ≥ 1 dose of the seasonal influenza vaccine ranged from 22.2% in El Paso County, Texas, to 68.8% in New York County, New York (Table 13); the required number of doses to be up-to-date on the seasonal influenza vaccine ranged from 10.2% in El Paso County, Texas, to 55.7% in New York, New York (Table 14); ≥ 1 dose of hepatitis A vaccine ranged from 24.2% in Gallatin County, Montana, to 88.6% in Dona Ana County, New Mexico (Table 15); and ≥ 2 doses of hepatitis

A vaccine ranged from 17.5% in Sedgwick County, Kansas, to 47.6% in El Paso County, Texas (Table 16).

County-Level Trends

During the first and last biennial periods for which James-Stein estimates were available, statistically significant increases in estimated vaccination coverage occurred in 27 of 233 counties (12%) with ≥ 4 doses of DTaP; 38 of 233 counties (16%) with ≥ 3 doses of polio vaccine; eight of 233 counties (3%) with ≥ 1 dose of MMR; nine of 233 counties (4%) with ≥ 3 doses of Hib; 193 of 233 counties (83%) with ≥ 3 doses of hepatitis B vaccine; 228 of 232 counties (98%) with ≥ 1 dose of varicella vaccine; and 187 of 192 counties (97%) with ≥ 4 doses of PCV7. For the vaccination series, statistically significant increases occurred in 29 of 233 counties (12%) with 4:3:1; in 30 of 233 counties (13%) with 4:3:1:3; in 159 of 233 counties (68%) with 4:3:1:3:3; in 139 of 213 counties (65%) with 4:3:1:3:3:1; and in 181 of 192 counties (94%) with 4:3:1:3:3:1:4.

In six of 233 counties, statistically significant decreases occurred in the estimated percentage of administered doses or vaccination coverage rate for certain vaccines and vaccine series: ≥ 4 doses of the DTaP/DTP vaccine (one county: Collin County, Texas); ≥ 3 doses of the Hib vaccine (five counties: Hartford County, Connecticut; Pennington County, South Dakota; King County, Washington; Laramie County, Wyoming; Sweetwater County, Wyoming); the 4:3:1 series (one county: Collin County, Texas); and the 4:3:1:3 series (one county: Collin County, Texas).

Achievement of *Healthy People 2010* Objectives During 2007–2008

For individual vaccines recommended during the 2007–2008 biennial period, the number of counties that achieved the *Healthy People 2010* objective of 90% coverage for individual vaccines were as follows: 15 of 193 counties (8%) for ≥ 4 doses of DTaP (Table 5), 179 of 193 counties (93%) for ≥ 3 doses of polio vaccine (Table 6), 166 of 193 counties (86%) for ≥ 1 dose of MMR (Table 7), 137 of 193 counties (71%) for ≥ 3 doses of Hib (Table 8), 182 of 193 counties (94%) for ≥ 3 doses of hepatitis B vaccine (Table 9), 97 of 193 counties (50%) for ≥ 1 dose of varicella vaccine (Table 10), and one of 193 counties (<1%) for ≥ 4 doses of PCV7 (Table 12). Among the counties that did not achieve the *Healthy People 2010* vaccination coverage objective of 90% coverage for DTaP, the estimated coverage rates ranged from <1 to 9.9 percentage points lower than the coverage objective; for MMR, coverage ranged from <1 to 3.6 percentage points lower than the objective; for Hib,

coverage ranged from <1 to 7.6 percentage points lower than the objective; for hepatitis B vaccine, coverage ranged from <1 to 4.2 percentage points lower than the objective; and for varicella vaccine, coverage ranged from <1 to 9.0 percentage points lower than the objective.

County-level estimates of the 3:3:1 series (Table 17) provide an estimate of what coverage would be in those counties had all children who received 3 doses of DTaP also received the recommended fourth dose. For vaccine series recommended during the most recent 2007–2008 biennial period, the number of counties achieving the *Healthy People 2010* objective of 80% coverage was 151 of 193 counties (77%) for the 4:3:1 series (Table 18), 113 of 193 counties (58%) for the 4:3:1:3 series (Table 19), 77 of 193 counties (40%) for the 4:3:1:3:3 series (Table 20), 30 of 193 counties (16%) for the 4:3:1:3:3:1 series (Table 21), and two of 193 counties (1%) for the 4:3:1:3:3:1:4 series (Table 22). Among the counties that did not achieve the *Healthy People 2010* objective for the 4:3:1 series, vaccination coverage rates ranged from <1 to 9.2 percentage points lower than the coverage objective; for the 4:3:1:3 series, coverage ranged from <1 to 9.2 percentage points lower than the objective; for the 4:3:1:3:3 series, coverage ranged from <1 to 9.5 percentage points lower than the coverage objective; and for the 4:3:1:3:3:1 series, coverage ranged from <1 to 9.8 percentage points below the coverage objective.

Association of County-Level Factors with Estimated County-Level Vaccination Coverage Rates During 2007–2008

In fitting the forward stepwise regressions to obtain modeled estimates of the log-odds of county-level vaccination coverage rates for the James-Stein estimates, counties with lower estimated vaccination coverage rates had higher per capita persons in poverty, had higher percentages of black children among children aged <5 years, had a higher number of pediatric intensive care beds per capita, were designated as a nonmetropolitan county with an economy dependent on recreation activities, or were designated as experiencing housing stress (Table 2). Counties with housing stress are defined by the U.S. Department of Agriculture Economic Research Service (USDA ERS) as those in which $\geq 30\%$ of households meet one or more of the following housing conditions: lack of complete plumbing, lack of complete kitchen, pay $\geq 30\%$ percent of income for owner costs or rent, or more than one person per room (20). In general, counties with higher estimated vaccination coverage rates were designated as having a higher number of pediatricians per capita, having higher per capita income, having a higher number of Hispanic persons per capita, being designated as having a service-dependent economy, or having

a higher number of persons per capita living in group quarters (e.g., college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, correctional facilities, workers' dormitories, and facilities for persons experiencing homelessness) (Table 2).

Discussion

During 2007–2008, the 193 counties included in this report included 49.0% of the population of children aged 19–35 months in the United States and 106 of the 150 most populous counties. With the exception of the hepatitis A vaccine (for which estimates of county-level vaccination coverage were available for only one biennial period), significant increases in county-level estimated vaccination coverage occurred for all the individual vaccines and vaccine series from the earliest and latest biennial periods for which estimates were available. County-level increases for individual vaccines ranged from 3.6% for MMR to 71.4% for varicella vaccine. The percentage of counties with significant increases in county-level vaccination coverage rates was greater for the more recently recommended vaccines, varicella and PCV7, and for the vaccine series that included varicella vaccine and PCV7. However, significant increases in estimated county-level vaccination coverage rates occurred in a moderate number of counties for individual vaccines that were recommended before 1995.

The *Healthy People 2010* vaccination coverage objective of 90% for individual vaccines was achieved for a majority of the 193 selected counties during the 2007–2008 biennial period for the recommended number of doses for polio, MMR, Hib, hepatitis B, and varicella vaccines. In December 2007, a shortage of the Hib vaccine began and continued until mid-2009 (21,22). Research is underway to evaluate the extent to which Hib coverage decreased during the shortage.

Since licensure of hepatitis A vaccine during 1995–1996, the hepatitis A childhood immunization strategy has been implemented incrementally, beginning with the 1996 recommendation to vaccinate children living in communities with the highest disease rates, continuing in 1999 with recommendations for vaccination of children living in states, counties, and communities with consistently high hepatitis A rates, and culminating in 2006 with the recommendation for routine hepatitis A vaccination of children nationwide (23). *Healthy People 2010* vaccination coverage objectives were not specified for hepatitis A vaccine. However, a vaccination coverage objective of 60% has been proposed for the *Healthy People 2020* objective (24) for national hepatitis A vaccine coverage.

The findings in this report indicate that higher county-level estimated vaccination coverage is associated with greater

access to primary care (e.g., more pediatricians per capita). In addition, high county-level vaccination coverage rates were found to be positively associated with per capita living in group quarters. Because the per capita living in group quarters variable used measures the extent to which a county provides housing, custodial, medical, and other services to residents who live in group quarters, the variable might provide an indirect measure of the extent to which the infrastructure of a county is organized to provide access to other medical services for other county residents (e.g., primary care services to infants). At the county level, per capita income was found to be positively associated with higher vaccination coverage rates. In other research, family income has been found to be a significant predictor of whether individual children have received all recommended childhood vaccines (25,26).

County-level factors associated with lower county-level estimated vaccination coverage include correlates of poverty. In particular, lower county-level vaccination coverage rates were found to be associated with higher levels of housing stress. Because the housing stress variable measures the extent to which $\geq 30\%$ of the residents in a county live in substandard housing conditions or pay a disproportionate amount of their income for rent or mortgage, the variable can be considered an indicator of county-level poverty. Poverty is significantly correlated with lower levels of vaccination coverage (25,26). In counties where housing stress is pervasive, lower county-level estimates of vaccination coverage among infants are likely (27).

Lower county-level coverage also was associated with a higher number of pediatric intensive care beds per capita. This finding might be a result of counties allocating resources for care at hospitals rather than for primary care at medical facilities where vaccinations are administered.

The Vaccines for Children Program, implemented during 1994, was designed to mitigate the effect of the cost of childhood vaccines by providing vaccines at no cost to children entitled to the program. In 2009, VFC children had vaccination coverage levels that were similar to but slightly below coverage levels attained by fully insured children. However, determining what the coverage level would be without the VFC program is not possible.

Because the data in this report were obtained from a large national survey, the data were pooled for 2 consecutive years, and the James-Stein estimation method was used, precise estimates of vaccination coverage for many counties were obtained, making increasing trends in counties easier to detect with higher statistical power (27). In addition, ACIP definitions were used for up-to-date vaccination status for routine vaccine administration. During a vaccine shortage, ACIP usually suspends its recommendations for the routinely recommended number of

doses and issues interim recommendations that require fewer doses. Therefore, the up-to-date status of children in this report was determined using ACIP routine recommendations that are used when no shortages exist, rather than ACIP interim recommendations that temporarily decrease the number of vaccine doses until a shortage has been resolved.

The findings in this report are subject to at least five limitations. First, NIS has moderate response rates, and nonresponse bias might have resulted in an overestimation of vaccination coverage. However, the statistical methods of NIS (15) are designed to reduce potential nonresponse bias, and some research suggests that the bias in NIS might be small (28). Second, NIS is a survey of children living in households with landline telephones. Therefore, the results in this report might not be generalizable to children who live in households with no telephone service or in households with cellular telephones but no landline. However, recent evidence suggests that bias in surveys that only sample households with landline telephones might be small (29,30). Third, counties with $\geq 90\%$ vaccination coverage for individual vaccines and $\geq 80\%$ vaccination coverage for vaccine series were categorized as meeting the *Healthy People 2010* vaccination coverage objectives. In some counties, the results have wide confidence intervals, which indicates that those estimates are less precise. Fourth, because the county coverage estimates for a biennial period are reported only when the sample size during the biennial period is ≥ 35 , the number of biennial periods used to track trends in coverage varied from county to county. From two to seven biennial estimates are available to track trends depending on the sample size for each biennial period. Because the number of estimates available for a trend analysis was small, a simple method for evaluating whether coverage had increased or decreased over the time period covered by those biennial estimates was used, in which the two biennial estimates at the beginning and end of that period were compared. Those two biennial estimates do not necessarily correspond to the first and last biennial periods during 1995–2008. As additional years of NIS data become available, more sophisticated trend analyses might be conducted to allow the evaluation of differential trends between counties for the same vaccine and to assess whether vaccination coverage increased at certain points but decreased thereafter. Finally, of the approximately 2,300 of 3,141 counties in the United States that were sampled by NIS during the 2007–2008 biennial period, only 193 counties met the sample size requirement. However, those counties represented approximately 49% of all children aged 19–35 months in the United States, and the estimates of vaccination coverage among children living in all of those counties were very close to the estimated vaccination coverage for the United States. However, a more careful analysis of counties that did not meet

the sample size requirement is merited when sufficient sample size has accrued over time.

A goal of a vaccination program is to maintain a sufficiently high level of vaccination coverage to minimize the effects of vaccine-preventable diseases. The *Healthy People 2010* and *Healthy People 2020* (31) vaccination coverage objectives are milestones toward achieving high levels of vaccination coverage. Those milestones must be achieved in small areas (e.g., counties and communities) to eventually achieve high levels of vaccination coverage for all 50 states and the District of Columbia. Surveillance of vaccination coverage in small geographic areas might be useful for local health authorities to identify areas with low vaccination coverage and in need of policy or program intervention and might further decrease actual and potential morbidity from vaccine-preventable diseases. County estimates from NIS can supplement other local area methods of assessment, including Immunization Information Systems, retrospective school assessment surveys, and area-specific telephone or household surveys. *The Guide to Community Preventive Services* (32) provides a summary of interventions that have been evaluated to increase community vaccination coverage. Interventions that have been found to be effective include provider reminder-recall systems that recall parents to clinics to administer missed doses to children, assessment and feedback for vaccination providers that retrospectively evaluates the performance of providers in delivering one or more vaccinations to a client population, and use of Immunization Information Systems at the point of clinical care and to aid in surveillance and investigations of vaccination coverage (33).

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TABLE 1. Counties with vaccination coverage estimates (N = 257), by number of children aged 19–35 months and population rank — United States, 1995–2008

County/Area	No. of children aged 19–35 months	Population rank*
Jefferson, Alabama	12,806	95
Madison, Alabama	5,662	215
Mobile, Alabama	8,361	148
Montgomery, Alabama	4,789	249
Shelby, Alabama	3,980	293
Anchorage, Alaska	6,126	196
Fairbanks North Star, Alaska	2,299	479
Kenai Peninsula, Alaska	900	963
Matanuska-Susitna, Alaska	1,675	616
Cochise, Arizona	2,543	439
Coconino, Arizona	2,703	413
Maricopa, Arizona	91,761	4
Mohave, Arizona	3,491	326
Pima, Arizona	19,022	48
Pinal, Arizona	6,516	188
Yavapai, Arizona	3,250	350
Yuma, Arizona	4,778	250
Benton, Arkansas	4,666	258
Pulaski, Arkansas	8,306	150
Washington, Arkansas	4,669	257
Alameda, California	28,378	23
Los Angeles, California	201,522	1
Orange, California	59,594	6
Riverside, California	46,871	9
San Bernardino, California	46,713	10
San Diego, California	62,746	5
San Mateo, California	13,338	88
Santa Clara, California	35,963	17
Adams, Colorado	10,768	114
Arapahoe, Colorado	11,617	104
Boulder, Colorado	4,875	242
Denver, Colorado	14,477	74
Douglas, Colorado	6,310	192
El Paso, Colorado	12,204	99
Jefferson, Colorado	8,711	139
Larimer, Colorado	4,914	239
Weld, Colorado	5,784	207
Fairfield, Connecticut	16,472	62
Hartford, Connecticut	15,008	71
New Haven, Connecticut	14,642	72
New London, Connecticut	4,439	270
Kent, Delaware	3,167	364
New Castle, Delaware	10,155	121
Sussex, Delaware	3,358	336
District of Columbia	10,261	120
Broward, Florida	32,234	19
Duval, Florida	18,435	52
Hillsborough, Florida	23,907	30
Dade, Florida	44,556	11
Orange, Florida	23,094	31
Palm Beach, Florida	21,582	36
Pinellas, Florida	12,998	91
Cobb, Georgia	15,421	68
DeKalb, Georgia	15,527	67
Fulton, Georgia	20,310	43
Gwinnett, Georgia	19,582	46
Hawaii, Hawaii	3,196	358
Honolulu, Hawaii	17,649	54
Maui, Hawaii	2,596	432
Ada, Idaho	8,081	157

See table footnotes on page 11.

TABLE 1. (Continued) Counties with vaccination coverage estimates (N = 257), by number of children aged 19–35 months and population rank — United States, 1995–2008

County/Area	No. of children aged 19–35 months	Population rank*
Bannock, Idaho	2,044	527
Bonneville, Idaho	2,598	431
Canyon, Idaho	4,909	240
Kootenai, Idaho	2,423	462
Twin Falls, Idaho	1,641	623
Cook, Illinois	107,617	2
DuPage, Illinois	17,014	56
Lake, Illinois	14,551	73
Will, Illinois	15,174	70
Allen, Indiana	7,512	170
Hamilton, Indiana	5,831	204
Lake, Indiana	9,933	122
Marion, Indiana	20,522	40
Linn, Iowa	4,047	292
Polk, Iowa	9,434	131
Scott, Iowa	3,280	346
Johnson, Kansas	10,963	110
Sedgwick, Kansas	10,815	111
Shawnee, Kansas	3,530	324
Fayette, Kentucky	5,405	223
Jefferson, Kentucky	13,826	81
Caddo, Louisiana	5,162	228
East Baton Rouge, Louisiana	8,402	147
Jefferson, Louisiana	7,594	165
Lafayette, Louisiana	4,268	283
Orleans, Louisiana	3,570	317
St. Tammany, Louisiana	4,354	275
Androscoggin, Maine	1,915	552
Aroostook, Maine	982	905
Cumberland, Maine	4,373	272
Kennebec, Maine	1,767	585
Penobscot, Maine	2,290	480
York, Maine	3,025	372
Anne Arundel, Maryland	9,653	130
Baltimore, Maryland	13,665	84
Frederick, Maryland	4,473	267
Harford, Maryland	4,297	280
Howard, Maryland	4,946	237
Montgomery, Maryland	18,663	51
Prince George's, Maryland	17,071	55
City of Baltimore, Maryland	13,162	90
Bristol, Massachusetts	9,022	134
Essex, Massachusetts	12,848	93
Hampden, Massachusetts	7,995	160
Middlesex, Massachusetts	24,021	29
Norfolk, Massachusetts	10,804	113
Plymouth, Massachusetts	8,568	144
Suffolk, Massachusetts	12,342	96
Worcester, Massachusetts	13,673	83
Kent, Michigan	13,170	89
Macomb, Michigan	14,213	77
Oakland, Michigan	20,567	39
Wayne, Michigan	38,216	15
Anoka, Minnesota	6,312	190
Dakota, Minnesota	7,885	163
Hennepin, Minnesota	22,663	33
Ramsey, Minnesota	9,784	127
Washington, Minnesota	4,372	273
Harrison, Mississippi	3,596	316
Hinds, Mississippi	5,692	213

See table footnotes on page 11.

TABLE 1. (Continued) Counties with vaccination coverage estimates (N = 257), by number of children aged 19–35 months and population rank — United States, 1995–2008

County/Area	No. of children aged 19–35 months	Population rank*
Greene, Missouri	4,797	247
Jackson, Missouri	14,458	75
Jefferson, Missouri	4,111	288
St. Charles, Missouri	6,740	184
St. Louis, Missouri	16,829	59
City of St. Louis, Missouri	7,359	175
Cascade, Montana	1,614	628
Flathead, Montana	1,601	631
Gallatin, Montana	1,633	625
Lewis and Clark, Montana	1,019	873
Missoula, Montana	1,705	605
Yellowstone, Montana	2,691	418
Douglas, Nebraska	11,697	101
Lancaster, Nebraska	5,757	209
Sarpy, Nebraska	3,554	319
Clark, Nevada	41,370	13
Washoe, Nevada	8,198	154
Grafton, New Hampshire	1,161	790
Hillsborough, New Hampshire	7,215	177
Merrimack, New Hampshire	2,214	497
Rockingham, New Hampshire	4,982	235
Strafford, New Hampshire	2,017	532
Bergen, New Jersey	13,838	79
Burlington, New Jersey	7,537	166
Camden, New Jersey	9,812	125
Essex, New Jersey	16,173	63
Hudson, New Jersey	11,309	108
Middlesex, New Jersey	14,292	76
Monmouth, New Jersey	10,730	115
Morris, New Jersey	8,352	149
Ocean, New Jersey	10,807	112
Passaic, New Jersey	10,401	118
Union, New Jersey	10,384	119
Bernalillo, New Mexico	13,369	86
Dona Ana, New Mexico	4,791	248
Sandoval, New Mexico	2,257	485
San Juan, New Mexico	2,711	411
Santa Fe, New Mexico	2,340	472
Bronx, New York	30,960	20
Erie, New York	13,797	82
Kings, New York	53,672	8
Monroe, New York	11,837	100
Nassau, New York	20,696	38
New York, New York	27,666	24
Queens, New York	39,770	14
Suffolk, New York	26,079	25
Westchester, New York	16,936	58
Durham, North Carolina	5,787	206
Guilford, North Carolina	8,901	136
Mecklenburg, North Carolina	20,314	42
Wake, North Carolina	18,748	49
Burleigh, North Dakota	1,372	701
Cass, North Dakota	2,694	417
Grand Forks, North Dakota	1,198	773
Ward, North Dakota	1,282	736
Cuyahoga, Ohio	22,725	32
Franklin, Ohio	24,164	27
Hamilton, Ohio	16,011	64
Lucas, Ohio	8,696	140
Montgomery, Ohio	9,855	124

See table footnotes on page 11.

TABLE 1. (Continued) Counties with vaccination coverage estimates (N = 257), by number of children aged 19–35 months and population rank — United States, 1995–2008

County/Area	No. of children aged 19–35 months	Population rank*
Cleveland, Oklahoma	4,065	291
Oklahoma, Oklahoma	16,958	57
Tulsa, Oklahoma	13,393	85
Clackamas, Oregon	5,808	205
Lane, Oregon	5,128	231
Marion, Oregon	6,706	186
Multnomah, Oregon	13,828	80
Washington, Oregon	11,085	109
Allegheny, Pennsylvania	18,190	53
Delaware, Pennsylvania	9,674	129
Lancaster, Pennsylvania	9,747	128
Montgomery, Pennsylvania	13,350	87
Philadelphia, Pennsylvania	30,360	21
Kent, Rhode Island	2,476	453
Newport, Rhode Island	1,168	787
Providence, Rhode Island	11,386	106
Washington, Rhode Island	1,711	603
Charleston, South Carolina	6,712	185
Greenville, South Carolina	8,593	143
Horry, South Carolina	4,492	265
Richland, South Carolina	6,909	181
Spartanburg, South Carolina	5,148	230
York, South Carolina	4,107	289
Minnehaha, South Dakota	3,813	301
Pennington, South Dakota	2,128	508
Davidson, Tennessee	12,820	94
Hamilton, Tennessee	5,723	212
Knox, Tennessee	7,391	173
Shelby, Tennessee	20,004	45
Bexar, Texas	38,010	16
Collin, Texas	16,619	60
Dallas, Texas	59,454	7
El Paso, Texas	20,365	41
Harris, Texas	98,100	3
Hidalgo, Texas	24,153	28
Tarrant, Texas	41,645	12
Travis, Texas	22,315	35
Cache, Utah	3,283	345
Davis, Utah	8,171	156
Salt Lake, Utah	26,047	26
Utah, Utah	15,821	65
Weber, Utah	5,602	216
Addison, Vermont	521	1,452
Bennington, Vermont	516	1,457
Chittenden, Vermont	2,305	478
Franklin, Vermont	868	989
Lamoille, Vermont	408	1,685
Orange, Vermont	407	1,687
Rutland, Vermont	843	1,015
Washington, Vermont	851	1,008
Windham, Vermont	613	1,297
Windsor, Vermont	782	1,074
Fairfax, Virginia	19,255	47
Loudoun, Virginia	7,513	169
Virginia Beach, Virginia	8,603	142
Clark, Washington	8,195	155
King, Washington	32,833	18
Kitsap, Washington	4,104	290
Pierce, Washington	15,339	69
Snohomish, Washington	12,867	92

See table footnotes on page 11.

TABLE 1. (Continued) Counties with vaccination coverage estimates (N = 257), by number of children aged 19–35 months and population rank — United States, 1995–2008

County/Area	No. of children aged 19–35 months	Population rank*
Spokane, Washington	8,213	151
Thurston, Washington	3,965	294
Whatcom, Washington	3,106	368
Yakima, Washington	5,947	201
Kanawha, West Virginia	3,268	347
Brown, Wisconsin	4,696	255
Dane, Wisconsin	8,606	141
Milwaukee, Wisconsin	20,927	37
Outagamie, Wisconsin	3,263	348
Waukesha, Wisconsin	6,082	198
Albany, Wyoming	523	1,450
Campbell, Wyoming	911	953
Fremont, Wyoming	778	1,077
Laramie, Wyoming	1,810	576
Natrona, Wyoming	1,432	677
Sweetwater, Wyoming	908	957
Uinta, Wyoming	443	1,599

*Population rank among 3,141 counties in the United States according to the population of children aged 19–35 months as of July 1, 2007. Vaccination coverage was estimated for counties where the sample size of children with sufficient vaccination and health-care provider data from the mailed survey portion of the National Immunization Survey was ≥ 35 for the combined survey years during the biennial period and ≥ 14 for each year during the biennial period. For each of the 257 counties that met the sample size requirement for at least one biennial period, an averaged estimate over the biennial period was calculated.

TABLE 2. Predictors of low or high vaccination coverage, by vaccine and vaccine series*

Indices used as candidates for county-level predictors [§]	Predicted coverage levels [†] for vaccines and vaccine series						
	≥3 doses DTaP/DTP	≥4 doses DTaP/DTP	≥3 doses polio	≥1 dose MMR	≥3 doses Hib	≥3 doses hepatitis B	≥1 dose varicella
Indices of economic conditions							
Urban influence [¶]	—	—	—	—	—	—	—
Farming-dependent county	—	—	—	—	—	—	—
Mining-dependent county	—	—	—	—	—	—	—
Manufacturing-dependent county	—	—	—	—	—	—	—
Federal/state government-dependent county	—	—	—	—	—	—	—
Service-dependent county	—	—	High	—	High	—	—
Nonspecialized-dependent county	—	—	—	—	—	—	—
Housing stress ^{**}	Low	—	Low	—	—	Low	Low
Low education ^{††}	—	—	—	—	—	—	—
Persistent poverty ^{§§}	—	—	—	—	—	—	—
Population loss ^{¶¶}	—	—	—	—	—	—	—
Nonmetro recreation ^{***}	—	—	—	—	—	—	—
Retirement destination ^{†††}	—	—	—	—	—	—	—
Indices of access to care^{§§§}							
Per capita pediatricians	—	High	—	High	—	—	High
Per capita general practitioners	—	—	—	—	—	—	—
Per capita hospitals	—	—	—	—	—	—	—
Per capita children's hospitals	—	—	—	—	—	—	—
Per capita bassinets set up	—	—	—	—	—	—	—
Per capita pediatric intensive care beds set up	—	—	—	—	—	—	—
Indices of demographic composition^{§§§}							
Percentage white children among children aged <5 yrs	—	—	—	—	—	—	—
Percentage black children among children aged <5 yrs	—	—	—	—	—	—	—
Percentage American Indian children among children aged <5 yrs	—	—	—	—	—	—	—
Percent Asian children among children aged <5 yrs	—	—	—	—	—	—	—
Percentage Hispanic children among children aged <5 yrs	—	—	—	—	—	—	—
Per capita white population	—	—	—	—	—	—	—
Per capita black population	—	—	—	—	—	—	Low
Per capita American Indian population	—	—	—	—	Low	—	—
Per capita Asian population	—	—	—	—	—	—	—
Per capita Hispanic population	—	—	—	—	—	—	High
Per capita single-family households	—	—	—	—	—	—	—
Per capita living in group quarters ^{¶¶¶}	—	—	—	—	—	—	—
Average family size	—	—	—	—	—	—	—
Per capita female head of household	—	—	—	—	—	—	—
Per capita income	—	—	—	—	—	—	—
Per capita persons aged <18 yrs in poverty	—	Low	—	—	—	—	Low

See table footnotes on page 15.

TABLE 2. (Continued) Predictors of low or high vaccination coverage, by vaccine and vaccine series*

Indices used as candidates for county-level predictors [§]	Predicted coverage levels [†] for vaccines and vaccine series					
	≥3 doses PCV7	≥4 doses PCV7	≥1 dose seasonal influenza	Up to date on seasonal influenza	≥1 dose hepatitis A	≥2 doses hepatitis A
Indices of economic conditions						
Urban influence [¶]	—	—	—	—	—	—
Farming-dependent county	—	—	—	—	—	—
Mining-dependent county	—	—	—	—	—	—
Manufacturing-dependent county	—	—	—	—	—	—
Federal/state government-dependent county	—	—	—	—	—	—
Service-dependent county	—	—	—	—	—	—
Nonspecialized-dependent county	—	—	—	—	—	—
Housing stress ^{**}	Low	Low	Low	—	—	—
Low education ^{††}	—	—	—	—	—	—
Persistent poverty ^{§§}	—	—	—	—	—	—
Population loss ^{¶¶}	—	—	—	—	—	—
Nonmetro recreation ^{***}	—	—	—	—	Low	—
Retirement destination ^{†††}	—	—	—	—	—	—
Indices of access to care^{§§§}						
Per capita pediatricians	High	High	—	—	—	—
Per capita general practitioners	—	—	—	—	High	High
Per capita hospitals	—	—	—	—	—	—
Per capita children's hospitals	—	—	—	—	—	—
Per capita bassinets set up	—	—	—	—	—	—
Per capita pediatric intensive care beds set up	Low	Low	—	—	—	—
Indices of demographic composition^{§§§}						
Percentage white children among children aged <5 yrs	—	—	—	—	—	—
Percentage black children among children aged <5 yrs	—	—	Low	—	—	—
Percentage American Indian children among children aged <5 yrs	—	—	—	—	—	—
Percent Asian children among children aged <5 yrs	—	—	—	—	—	—
Percentage Hispanic children among children aged <5 yrs	—	—	—	—	High	High
Per capita white population	—	—	—	—	—	—
Per capita black population	—	—	—	—	—	—
Per capita American Indian population	—	—	—	—	—	—
Per capita Asian population	—	—	—	—	—	—
Per capita Hispanic population	—	—	—	—	—	—
Per capita single-family households	—	—	—	—	—	—
Per capita living in group quarters ^{¶¶¶}	—	—	High	High	—	—
Average family size	—	—	—	—	—	—
Per capita female head of household	—	—	—	—	—	—
Per capita income	—	—	High	High	—	—
Per capita persons aged <18 yrs in poverty	—	—	—	Low	—	—

See table footnotes on page 15.

TABLE 2. (Continued) Predictors of low or high vaccination coverage, by vaccine and vaccine series*

Indices used as candidates for county-level predictors [§]	Predicted coverage levels [†] for vaccines and vaccine series					
	3:3:1	4:3:1	4:3:1:3	4:3:1:3:3	4:3:1:3:3:1	4:3:1:3:3:1:4
Indices of economic conditions						
Urban influence [¶]	—	—	—	—	—	—
Farming-dependent county	—	—	—	—	—	—
Mining-dependent county	—	—	—	—	—	—
Manufacturing-dependent county	—	—	—	—	—	—
Federal/state government-dependent county	—	—	—	—	—	—
Service-dependent county	—	—	—	—	—	—
Nonspecialized-dependent county	—	—	—	—	—	—
Housing stress ^{**}	Low	Low	—	—	—	Low
Low education ^{††}	—	—	—	—	—	—
Persistent poverty ^{§§}	—	—	—	—	—	—
Population loss ^{¶¶}	—	—	—	—	—	—
Nonmetro recreation ^{***}	—	—	—	—	—	—
Retirement destination ^{†††}	—	—	—	—	—	—
Indices of access to care^{§§§}						
Per capita pediatricians	High	High	High	High	High	High
Per capita general practitioners	—	—	—	—	—	—
Per capita hospitals	—	—	—	—	—	—
Per capita children's hospitals	—	—	—	—	—	—
Per capita bassinets set up	—	—	—	—	—	—
Per capita pediatric intensive care beds set up	—	—	—	—	—	Low
Indices of demographic composition^{§§§}						
Percentage white children among children aged <5 yrs	—	—	—	—	—	—
Percentage black children among children aged <5 yrs	—	—	—	—	—	—
Percentage American Indian children among children aged <5 yrs	—	—	—	—	—	—
Percent Asian children among children aged <5 yrs	—	—	—	—	—	—
Percentage Hispanic children among children aged <5 yrs	—	—	—	—	—	—
Per capita white population	—	—	—	—	—	—
Per capita black population	—	—	—	—	—	—
Per capita American Indian population	—	—	—	—	—	—
Per capita Asian population	—	—	—	—	—	—
Per capita Hispanic population	—	—	—	—	—	—
Per capita single-family households	—	—	—	—	—	—
Per capita living in group quarters ^{¶¶¶}	—	—	—	—	—	—
Average family size	—	—	—	—	—	—
Per capita female head of household	—	—	—	—	—	—
Per capita income	—	—	—	—	—	—
Per capita persons aged <18 yrs in poverty	—	—	—	Low	—	—

See table footnotes on page 15.

Abbreviations: DTaP = diphtheria and tetanus toxoids and acellular pertussis; DTP = diphtheria and tetanus toxoids and pertussis; MMR = measles, mumps, and rubella; Hib = *Haemophilus influenzae* type B; PCV7 = 7-valent pneumococcal conjugate vaccine.

* 3:3:1 = ≥3 doses of DTaP/DTP vaccine, ≥3 doses of polio vaccine, and ≥1 dose of MMR; 4:3:1 = ≥4 doses DTaP/DTP vaccine, ≥3 doses of polio vaccine, ≥1 dose of MMR vaccine; 4:3:1:3 = 4:3:1 plus ≥3 doses Hib vaccine; 4:3:1:3:3 = 4:3:1:3 plus ≥3 doses of hepatitis B vaccine, 4:3:1:3:3:1 = 4:3:1:3:3 plus ≥1 dose of varicella vaccine; 4:3:1:3:3:1:4 = 4:3:1:3:3:1 plus ≥4 doses of PCV7.

† Low indicates that the regression coefficient from the regression of the log odds of the direct estimate on the predictor variable was negative; high indicates that the regression coefficient was positive.

§ U.S. Department of Agriculture Economic Research Service (ERS) economic-dependent 2004 typology codes are available at <http://www.ers.usda.gov/briefing/rurality/typology>.

¶ An area with urban influence is categorized by ERS as 1) a county designated as a metropolitan area with ≥1 million residents, 2) a county designated as a metropolitan area with <1 million residents, 3) a micropolitan area (i.e., an urban area based around a core city or town with a population of 10,000–49,999) adjacent to a large metropolitan area, or 4) a noncore adjacent to a large metropolitan area. Information on the ERS urban influence codes is available at <http://www.ers.usda.gov/Data/UrbanInfluenceCodes>.

** ERS defines counties with housing stress as those in which ≥30% of households meet one or more of the following housing conditions: lack of complete plumbing, lack of complete kitchen, pay ≥30% percent of income for owner costs or rent, or >1 person per room. ERS designations of county-level housing stress are available at <http://www.ers.usda.gov/briefing/rurality/typology/maps/housing.htm>.

†† ERS defines counties with low education as those in which ≥25% of residents aged 25–64 years have neither a high school diploma nor a general educational development (GED) diploma. ERS designations of county-level low education are available at <http://www.ers.usda.gov/briefing/rurality/typology/maps/education.htm>.

§§ ERS defines counties with persistent poverty as those in which ≥20% of residents are poor as measured by each of the previous four censuses: 1970, 1980, 1990, and 2000. ERS designations of county-level persistent poverty are available at <http://www.ers.usda.gov/briefing/rurality/typology/maps/poverty.htm> and http://www.ers.usda.gov/data/typologycodes/2004/all_final_codes.xls.

¶¶ ERS defines population loss (for the year 2000) as counties in which the number of residents decreased both between the 1980 and 1990 censuses and between the 1990 and 2000 censuses. The ERS designations of county-level population loss are available at <http://www.ers.usda.gov/briefing/rurality/typology/maps/population.htm>.

*** ERS defines nonmetro recreation by a combination of factors, including share of employment or share of earnings in recreation-related industries, share of seasonal or occasional use housing units, and per capita receipts from motels and hotels. ERS designations of nonmetro recreation are available at <http://www.ers.usda.gov/briefing/rurality/typology/maps/recreation.htm>.

††† ERS defines retirement destination counties as those where the number of residents aged ≥60 years increased by ≥15% during 1990–2000 because of immigration. ERS designations of retirement destinations are at <http://www.ers.usda.gov/briefing/rurality/typology/maps/retirement.htm> and http://www.ers.usda.gov/data/typologycodes/2004/all_final_codes.xls.

§§§ **Source:** US Department of Health and Human Services, Health Resources and Services Administration: Area resource file. National county-level health resource information database. Available at <http://www.arfsys.com>.

¶¶¶ The U.S. Census Bureau defines group quarters as a place where persons live or stay that is normally owned or managed by an entity or organization providing housing or services for the residents. These services might include custodial or medical care as well as other types of assistance, and residency is commonly restricted to those receiving these services. Persons living in group quarters are usually not related to each other. Group quarters include college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, correctional facilities, workers' dormitories, and facilities for persons experiencing homelessness. Additional information is available at http://www.census.gov/acs/www/data_documentation/documentation_main.

TABLE 3. Number of counties included in county-level vaccination coverage estimates, by vaccine and vaccine series and biennial survey period — United States, 1995–2008

Vaccine or vaccine series	No. of counties						
	1995–1996	1997–1998	1999–2000	2001–2002	2003–2004	2005–2006	2007–2008
≥3 doses DTaP/DTP	NA	211	215	210	206	171	193
≥4 doses DTaP/DTP	169	211	215	210	206	171	193
≥3 doses polio	169	211	215	210	206	171	193
≥1 dose MMR	169	211	215	210	206	171	193
≥3 doses Hib	169	211	215	210	206	171	193
≥3 doses hepatitis B	169	211	215	210	206	171	193
≥1 dose varicella	NA	211	215	210	206	171	193
≥3 doses PCV7	NA	NA	NA	NA	206	171	193
≥4 doses PCV7	NA	NA	NA	NA	206	171	193
≥1 dose seasonal influenza	NA	NA	NA	NA	124	112	104
Fully vaccinated with seasonal influenza	NA	NA	NA	NA	NA	112	104
≥1 dose hepatitis A	NA	NA	NA	NA	NA	NA	193
≥2 doses hepatitis A	NA	NA	NA	NA	NA	NA	193
3:3:1*	NA	NA	215	210	206	171	193
4:3:1†	169	211	215	210	206	171	193
4:3:1:3‡	169	211	215	210	206	171	193
4:3:1:3:3¶	169	211	215	210	206	171	193
4:3:1:3:3:1**	NA	NA	NA	210	206	171	193
4:3:1:3:3:1:4††	NA	NA	NA	NA	206	171	193

Abbreviations: DTaP = diphtheria and tetanus toxoids and acellular pertussis; DTP = diphtheria and tetanus toxoids and pertussis; Hib = *Haemophilus influenzae* type B; MMR = measles, mumps, and rubella; NA = not available; PCV7 = 7-valent pneumococcal conjugate vaccine.

* Administered ≥3 doses of DTaP/DTP and up to date on the polio and MMR vaccines.

† Up to date for DTaP/DTP, polio, and MMR vaccines.

‡ Up to date for 4:3:1 and Hib.

¶ Up to date for 4:3:1:3 and hepatitis B.

** Up to date for 4:3:1:3:3 and varicella.

†† Up to date for 4:3:1:3:3:1 and PCV7.

TABLE 4. Estimated vaccination coverage with ≥ 3 doses of DTaP/DTP vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2006*

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Jefferson, Alabama	96.5	(± 1.1)	96.1	(± 1.6)	95.7	(± 1.8)	96.4	(± 1.3)	96.8	(± 0.7)	96.5	(± 1.4)
Madison, Alabama	95.0	(± 2.6)	95.1	(± 2.6)	NA	NA	96.4	(± 1.3)	94.9	(± 2.5)	96.2	(± 1.7)
Mobile, Alabama	94.9	(± 2.2)	94.5	(± 2.8)	93.9	(± 3.5)	96.1	(± 1.7)	94.1	(± 2.8)	95.5	(± 2.3)
Montgomery, Alabama	93.9	(± 3.0)	94.8	(± 2.8)	NA	NA	NA	NA	NA	NA	NA	NA
Shelby, Alabama	NA	NA	95.2	(± 2.7)	96.6	(± 1.0)	95.8	(± 1.8)	NA	NA	96.1	(± 2.0)
Anchorage, Alaska	NA	NA	92.7	(± 2.6)	94.2	(± 2.4)	95.1	(± 1.7)	94.6	(± 2.2)	94.5	(± 2.3)
Fairbanks North Star, Alaska	NA	NA	94.9	(± 2.6)	92.7	(± 3.2)	93.1	(± 2.6)	93.4	(± 2.8)	94.4	(± 2.7)
Kenai Peninsula, Alaska	NA	NA	94.7	(± 2.7)	NA	NA	NA	NA	NA	NA	NA	NA
Matanuska-Susitna, Alaska	NA	NA	93.7	(± 3.0)	92.6	(± 3.6)	95.0	(± 2.1)	94.5	(± 2.5)	94.2	(± 2.7)
Cochise, Arizona	92.1	(± 3.7)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Coconino, Arizona	92.1	(± 3.6)	NA	NA	NA	NA	94.5	(± 2.5)	NA	NA	NA	NA
Maricopa, Arizona	93.0	(± 1.9)	91.5	(± 2.4)	93.3	(± 2.1)	95.8	(± 1.3)	94.4	(± 1.8)	93.7	(± 2.4)
Mohave, Arizona	NA	NA	91.0	(± 4.1)	91.1	(± 4.2)	NA	NA	NA	NA	NA	NA
Pima, Arizona	93.5	(± 2.4)	94.4	(± 2.6)	92.2	(± 2.9)	95.2	(± 1.9)	94.4	(± 2.4)	94.1	(± 2.9)
Pinal, Arizona	91.8	(± 4.0)	93.1	(± 3.6)	94.7	(± 2.6)	93.7	(± 2.6)	93.7	(± 3.2)	NA	NA
Yavapai, Arizona	NA	NA	NA	NA	94.2	(± 3.0)	95.1	(± 2.0)	NA	NA	NA	NA
Yuma, Arizona	92.9	(± 3.6)	93.0	(± 3.8)	93.6	(± 3.5)	95.8	(± 1.3)	93.9	(± 3.3)	NA	NA
Benton, Arkansas [§]	91.6	(± 3.5)	NA	NA	94.4	(± 3.0)	95.5	(± 2.0)	95.0	(± 2.5)	96.2	(± 1.6)
Pulaski, Arkansas	95.6	(± 2.1)	92.2	(± 3.4)	95.0	(± 2.6)	96.7	(± 1.5)	94.4	(± 2.7)	95.8	(± 2.1)
Washington, Arkansas	93.8	(± 2.8)	NA	NA	93.2	(± 3.3)	NA	NA	NA	NA	93.8	(± 2.8)
Alameda, California	NA	NA	94.9	(± 2.6)	95.4	(± 2.4)	95.7	(± 1.9)	95.7	(± 1.8)	94.6	(± 2.6)
Los Angeles, California [§]	93.5	(± 2.0)	91.9	(± 2.4)	93.6	(± 2.5)	95.1	(± 1.6)	95.8	(± 1.6)	96.8	(± 1.1)
Orange, California	95.3	(± 2.1)	93.2	(± 3.5)	94.8	(± 2.7)	95.4	(± 2.0)	96.1	(± 1.9)	95.2	(± 2.4)
Riverside, California	NA	NA	93.1	(± 3.5)	93.2	(± 3.4)	93.7	(± 2.6)	NA	NA	94.8	(± 2.4)
San Bernardino, California	92.4	(± 3.3)	94.1	(± 3.1)	93.2	(± 3.3)	93.8	(± 2.6)	93.6	(± 2.2)	95.2	(± 1.8)
San Diego, California	93.9	(± 1.7)	93.7	(± 2.0)	94.3	(± 1.8)	94.9	(± 1.6)	95.5	(± 1.9)	94.8	(± 2.7)
San Mateo, California	96.2	(± 1.9)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Santa Clara, California	96.1	(± 1.4)	95.3	(± 1.6)	95.2	(± 1.6)	96.2	(± 1.4)	96.7	(± 1.3)	NA	NA
Adams, Colorado	94.0	(± 2.7)	92.8	(± 3.4)	93.0	(± 3.5)	94.8	(± 2.1)	NA	NA	NA	NA
Arapahoe, Colorado	95.5	(± 2.2)	94.7	(± 3.0)	95.2	(± 2.6)	95.6	(± 1.9)	NA	NA	96.7	(± 1.8)
Boulder, Colorado	95.9	(± 2.0)	94.9	(± 2.7)	94.1	(± 3.0)	94.3	(± 2.2)	95.9	(± 2.1)	95.2	(± 2.4)
Denver, Colorado	95.2	(± 2.2)	93.6	(± 3.1)	95.1	(± 2.7)	95.9	(± 1.8)	NA	NA	NA	NA
Douglas, Colorado	NA	NA	94.9	(± 2.9)	94.8	(± 3.0)	95.8	(± 1.9)	NA	NA	NA	NA
El Paso, Colorado	94.6	(± 2.6)	93.9	(± 3.0)	92.0	(± 3.7)	95.0	(± 2.0)	95.5	(± 2.2)	94.7	(± 2.6)
Jefferson, Colorado	95.4	(± 2.2)	94.4	(± 3.0)	95.0	(± 2.6)	95.1	(± 2.0)	95.9	(± 2.1)	96.3	(± 1.8)
Larimer, Colorado	NA	NA	93.8	(± 3.1)	94.1	(± 3.0)	NA	NA	95.3	(± 2.5)	NA	NA
Weld, Colorado	NA	NA	93.7	(± 3.3)	93.9	(± 3.3)	94.0	(± 2.4)	NA	NA	93.7	(± 3.1)
Fairfield, Connecticut	96.7	(± 1.1)	94.8	(± 2.3)	96.6	(± 1.5)	96.9	(± 0.6)	97.3	(± 1.3)	96.8	(± 0.9)
Hartford, Connecticut	96.3	(± 1.5)	95.3	(± 2.4)	95.3	(± 2.1)	96.4	(± 1.3)	96.2	(± 1.7)	96.5	(± 1.7)
New Haven, Connecticut	96.3	(± 1.7)	95.7	(± 2.0)	92.2	(± 3.3)	96.7	(± 1.0)	95.9	(± 2.0)	95.2	(± 2.3)
New London, Connecticut	95.0	(± 2.4)	95.1	(± 2.7)	NA	NA	95.2	(± 2.1)	95.6	(± 2.3)	96.2	(± 1.9)
Kent, Delaware	95.7	(± 1.8)	95.7	(± 2.0)	94.9	(± 2.6)	96.9	(± 0.4)	94.7	(± 2.6)	95.7	(± 2.2)
New Castle, Delaware	96.4	(± 1.3)	93.1	(± 2.2)	93.9	(± 2.2)	96.6	(± 1.0)	96.3	(± 1.6)	96.8	(± 1.0)
Sussex, Delaware	94.6	(± 2.6)	95.8	(± 2.0)	95.6	(± 1.8)	95.8	(± 1.7)	95.5	(± 2.1)	95.4	(± 2.0)
District of Columbia	94.7	(± 1.8)	93.6	(± 2.1)	93.6	(± 2.0)	97.0	(± 1.2)	96.1	(± 1.5)	95.3	(± 1.6)
Broward, Florida	95.2	(± 2.3)	95.8	(± 1.8)	94.6	(± 3.0)	96.4	(± 1.4)	94.9	(± 2.5)	94.5	(± 2.7)
Duval, Florida	95.8	(± 1.6)	94.9	(± 1.8)	94.6	(± 2.2)	95.8	(± 1.4)	96.2	(± 1.4)	NA	NA
Hillsborough, Florida	94.1	(± 2.8)	94.2	(± 3.0)	94.8	(± 2.7)	95.7	(± 1.8)	93.7	(± 2.9)	NA	NA
Dade, Florida	NA	NA	94.9	(± 2.2)	95.2	(± 1.7)	96.3	(± 1.3)	96.5	(± 0.9)	96.3	(± 1.6)
Orange, Florida	NA	NA	93.6	(± 3.3)	NA	NA	96.1	(± 1.7)	NA	NA	96.1	(± 1.2)
Palm Beach, Florida	94.7	(± 2.5)	95.1	(± 2.5)	95.3	(± 2.6)	96.0	(± 1.8)	96.2	(± 2.0)	95.4	(± 2.4)
Pinellas, Florida	94.3	(± 2.7)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobb, Georgia	95.6	(± 2.1)	94.9	(± 2.7)	94.3	(± 2.8)	95.8	(± 1.8)	95.7	(± 2.2)	95.9	(± 1.9)
DeKalb, Georgia	94.4	(± 2.4)	95.2	(± 2.2)	94.0	(± 2.3)	95.6	(± 1.7)	94.0	(± 2.5)	94.7	(± 2.7)
Fulton, Georgia	96.3	(± 1.6)	94.5	(± 2.2)	93.6	(± 2.3)	96.2	(± 1.4)	96.7	(± 1.5)	95.5	(± 2.2)
Gwinnett, Georgia	96.0	(± 1.7)	94.7	(± 3.0)	94.7	(± 2.9)	95.0	(± 2.1)	95.5	(± 2.2)	95.6	(± 2.2)
Hawaii, Hawaii	94.8	(± 2.4)	95.6	(± 2.1)	96.0	(± 1.4)	95.5	(± 1.8)	93.4	(± 2.9)	94.0	(± 2.9)
Honolulu, Hawaii	94.3	(± 1.9)	94.2	(± 2.1)	92.6	(± 2.7)	94.2	(± 1.7)	94.5	(± 2.0)	95.0	(± 1.9)
Maui, Hawaii	95.7	(± 2.1)	94.9	(± 2.7)	93.7	(± 3.3)	95.7	(± 1.5)	94.8	(± 2.7)	94.1	(± 3.0)
Ada, Idaho	94.0	(± 2.3)	93.8	(± 2.7)	94.6	(± 2.6)	95.1	(± 1.8)	95.7	(± 2.0)	94.6	(± 2.2)
Bannock, Idaho	94.3	(± 2.8)	93.7	(± 3.1)	93.2	(± 3.5)	NA	NA	NA	NA	NA	NA
Bonneville, Idaho	93.5	(± 2.9)	95.1	(± 2.6)	94.0	(± 3.1)	95.8	(± 1.5)	94.6	(± 2.7)	95.6	(± 2.3)
Canyon, Idaho	93.2	(± 2.9)	91.7	(± 3.6)	92.5	(± 3.6)	94.8	(± 2.2)	92.5	(± 3.3)	91.6	(± 3.6)
Kootenai, Idaho	94.0	(± 3.1)	95.6	(± 2.2)	91.2	(± 4.2)	NA	NA	NA	NA	NA	NA
Twin Falls, Idaho	93.5	(± 3.0)	NA	NA	93.9	(± 3.4)	NA	NA	NA	NA	NA	NA
Cook, Illinois	93.8	(± 2.1)	92.3	(± 2.2)	94.8	(± 1.6)	95.8	(± 1.4)	95.7	(± 1.5)	93.8	(± 2.0)
DuPage, Illinois	96.0	(± 1.9)	94.9	(± 2.9)	95.6	(± 2.4)	96.7	(± 1.5)	NA	NA	96.7	(± 1.6)

See table footnotes on page 20.

TABLE 4. (Continued) Estimated vaccination coverage with ≥ 3 doses of DTaP/DTP vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2006*

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Lake, Illinois	96.2	(±1.8)	94.2	(±3.0)	95.8	(±2.3)	95.7	(±1.8)	NA	NA	95.4	(±2.4)
Will, Illinois	NA	NA	94.8	(±3.0)	93.3	(±3.3)	95.5	(±2.0)	94.9	(±2.5)	95.7	(±2.1)
Allen, Indiana	94.4	(±2.6)	95.0	(±2.9)	93.2	(±3.4)	95.0	(±2.0)	NA	NA	95.9	(±2.1)
Hamilton, Indiana	96.2	(±2.0)	95.1	(±2.8)	95.2	(±2.6)	96.3	(±1.6)	NA	NA	96.5	(±1.8)
Lake, Indiana	92.8	(±3.2)	93.7	(±3.1)	94.2	(±3.1)	95.7	(±1.8)	NA	NA	95.8	(±2.0)
Marion, Indiana	95.1	(±1.6)	93.6	(±2.2)	93.7	(±2.0)	96.0	(±1.3)	96.2	(±1.5)	95.8	(±1.9)
Linn, Iowa	95.1	(±2.4)	NA	NA	94.7	(±2.9)	95.7	(±1.9)	NA	NA	95.6	(±2.1)
Polk, Iowa	94.5	(±2.4)	95.4	(±2.4)	93.7	(±3.0)	96.2	(±1.3)	94.8	(±2.4)	96.5	(±1.4)
Scott, Iowa	NA	NA	94.3	(±2.9)	94.0	(±3.2)	95.3	(±2.0)	NA	NA	NA	NA
Johnson, Kansas	96.5	(±1.7)	95.6	(±2.2)	94.3	(±2.5)	96.6	(±1.4)	96.6	(±1.5)	96.7	(±1.5)
Sedgwick, Kansas	95.0	(±2.3)	94.5	(±2.7)	93.4	(±3.3)	95.5	(±1.8)	95.4	(±2.3)	95.9	(±1.9)
Shawnee, Kansas	NA	NA	94.7	(±2.9)	NA	NA	NA	NA	94.4	(±2.7)	95.8	(±2.2)
Fayette, Kentucky	96.1	(±2.0)	95.2	(±2.7)	NA	NA	97.1	(±1.3)	NA	NA	NA	NA
Jefferson, Kentucky	94.9	(±2.3)	95.4	(±2.4)	93.9	(±3.1)	96.9	(±1.1)	96.3	(±1.5)	96.4	(±1.7)
Caddo, Louisiana	94.5	(±2.6)	94.1	(±2.9)	NA	NA	NA	NA	95.0	(±2.6)	95.9	(±2.1)
East Baton Rouge, Louisiana	93.9	(±2.8)	95.2	(±2.7)	94.1	(±3.1)	96.3	(±1.5)	96.2	(±1.4)	96.0	(±2.0)
Jefferson, Louisiana	95.4	(±2.2)	96.9	(±0.4)	94.1	(±3.0)	96.5	(±1.4)	95.3	(±2.4)	96.2	(±1.8)
Lafayette, Louisiana	93.6	(±3.0)	NA	NA	NA	NA	95.6	(±1.8)	NA	NA	96.1	(±1.8)
Orleans, Louisiana	92.7	(±2.3)	94.4	(±1.7)	91.4	(±2.4)	94.3	(±1.7)	95.2	(±2.3)	94.1	(±2.8)
St. Tammany, Louisiana	NA	NA	NA	NA	94.2	(±3.1)	96.7	(±1.5)	94.9	(±2.4)	NA	NA
Androscoggin, Maine	94.2	(±3.0)	95.5	(±2.3)	94.1	(±3.4)	95.7	(±1.9)	95.2	(±2.4)	96.0	(±1.8)
Aroostook, Maine	94.4	(±2.9)	95.7	(±2.2)	NA	NA	95.9	(±1.8)	NA	NA	NA	NA
Cumberland, Maine	96.0	(±1.8)	95.8	(±2.0)	94.8	(±2.6)	96.8	(±1.3)	95.5	(±2.1)	96.4	(±1.7)
Kennebec, Maine	95.4	(±2.3)	95.2	(±2.8)	94.3	(±3.0)	96.3	(±1.4)	NA	NA	96.2	(±1.6)
Penobscot, Maine	95.8	(±1.5)	93.6	(±3.0)	94.2	(±3.2)	96.4	(±1.6)	94.7	(±2.8)	95.2	(±2.3)
York, Maine	95.1	(±2.3)	95.9	(±1.9)	94.2	(±2.8)	96.2	(±1.6)	94.7	(±2.6)	95.9	(±2.0)
Anne Arundel, Maryland	95.5	(±2.2)	94.2	(±3.0)	94.8	(±2.6)	95.5	(±1.8)	96.0	(±2.1)	96.4	(±1.8)
Baltimore, Maryland	95.8	(±2.0)	94.7	(±2.6)	95.5	(±2.2)	96.7	(±1.4)	95.6	(±2.2)	96.4	(±1.8)
Frederick, Maryland	NA	NA	95.3	(±2.6)	94.8	(±2.8)	95.7	(±1.9)	NA	NA	NA	NA
Harford, Maryland	NA	NA	NA	NA	NA	NA	95.3	(±2.1)	NA	NA	NA	NA
Howard, Maryland	97.9	(±1.3)	95.0	(±2.8)	95.2	(±2.7)	97.5	(±1.3)	NA	NA	96.8	(±1.6)
Montgomery, Maryland	97.4	(±1.3)	93.8	(±2.8)	95.3	(±2.2)	96.7	(±1.5)	97.0	(±1.1)	97.1	(±1.5)
Prince George's, Maryland	94.9	(±2.3)	95.4	(±2.3)	95.1	(±2.5)	95.5	(±2.0)	96.5	(±1.1)	95.0	(±2.4)
City of Baltimore, Maryland	NA	NA	93.3	(±2.2)	93.0	(±2.1)	94.8	(±1.6)	95.3	(±1.8)	96.0	(±2.0)
Bristol, Massachusetts	94.6	(±2.7)	95.0	(±2.6)	94.5	(±2.9)	95.8	(±1.8)	95.2	(±2.5)	NA	NA
Essex, Massachusetts	95.8	(±1.9)	95.6	(±2.1)	95.7	(±2.0)	96.1	(±1.7)	96.1	(±1.9)	94.7	(±2.6)
Hampden, Massachusetts	94.7	(±2.7)	95.0	(±2.6)	93.6	(±3.4)	96.1	(±1.7)	NA	NA	NA	NA
Middlesex, Massachusetts	96.7	(±1.6)	95.3	(±2.3)	95.4	(±2.1)	96.8	(±1.3)	96.6	(±1.7)	96.9	(±1.2)
Norfolk, Massachusetts	97.0	(±0.2)	93.5	(±3.2)	95.5	(±2.4)	97.1	(±1.3)	96.7	(±1.6)	96.9	(±1.5)
Plymouth, Massachusetts	95.3	(±2.4)	95.4	(±2.5)	94.9	(±2.7)	96.2	(±1.7)	NA	NA	96.3	(±2.0)
Suffolk, Massachusetts	96.9	(±0.8)	95.5	(±1.6)	95.4	(±1.6)	97.0	(±1.1)	96.8	(±0.9)	96.6	(±0.9)
Worcester, Massachusetts	96.1	(±1.7)	94.9	(±2.6)	96.2	(±1.4)	96.5	(±1.5)	95.5	(±2.4)	96.2	(±1.8)
Kent, Michigan	93.7	(±2.9)	94.6	(±2.9)	94.4	(±3.2)	95.8	(±1.9)	NA	NA	95.7	(±2.0)
Macomb, Michigan	95.0	(±2.6)	95.1	(±2.8)	95.2	(±2.4)	95.8	(±1.7)	95.5	(±2.3)	NA	NA
Oakland, Michigan	96.7	(±1.6)	94.7	(±2.7)	96.1	(±1.9)	96.6	(±1.5)	96.8	(±1.6)	96.7	(±1.7)
Wayne, Michigan ⁵	90.8	(±2.6)	91.9	(±2.3)	90.7	(±3.4)	94.9	(±1.9)	93.9	(±2.6)	94.8	(±2.2)
Anoka, Minnesota	95.0	(±2.6)	95.3	(±2.6)	95.2	(±2.5)	NA	NA	NA	NA	96.2	(±1.8)
Dakota, Minnesota	95.2	(±2.5)	95.7	(±2.1)	95.8	(±1.9)	95.8	(±1.8)	96.2	(±1.7)	96.3	(±1.9)
Hennepin, Minnesota	95.5	(±2.0)	95.4	(±2.4)	96.1	(±1.7)	96.5	(±1.4)	96.5	(±1.7)	96.5	(±1.6)
Ramsey, Minnesota	95.6	(±2.2)	95.5	(±2.3)	95.0	(±2.7)	96.3	(±1.6)	95.5	(±2.2)	96.6	(±1.3)
Washington, Minnesota	95.3	(±2.3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Harrison, Mississippi	93.2	(±3.0)	NA	NA	NA	NA	NA	NA	94.8	(±2.6)	NA	NA
Hinds, Mississippi	94.4	(±2.7)	94.9	(±2.7)	93.9	(±3.3)	NA	NA	95.7	(±1.8)	93.2	(±3.1)
Greene, Missouri	NA	NA	NA	NA	93.6	(±3.4)	NA	NA	NA	NA	NA	NA
Jackson, Missouri	94.8	(±2.6)	94.3	(±2.8)	94.3	(±3.0)	96.1	(±1.6)	96.5	(±1.0)	95.3	(±2.2)
Jefferson, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	95.7	(±2.1)
St. Charles, Missouri	95.4	(±2.3)	NA	NA	NA	NA	NA	NA	NA	NA	96.2	(±1.7)
St. Louis, Missouri	96.2	(±1.4)	94.9	(±2.5)	95.4	(±2.4)	96.9	(±1.3)	96.6	(±1.4)	96.7	(±1.7)
City of St. Louis, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	93.7	(±3.1)
Cascade, Montana	95.0	(±2.3)	95.3	(±2.6)	93.9	(±3.1)	96.2	(±1.7)	94.9	(±2.6)	95.6	(±2.2)
Flathead, Montana	93.1	(±3.1)	95.2	(±2.6)	87.4	(±5.0)	94.6	(±2.4)	93.8	(±3.0)	93.7	(±3.0)
Gallatin, Montana	95.0	(±2.4)	95.1	(±2.6)	93.1	(±3.4)	96.3	(±1.6)	94.5	(±2.7)	93.2	(±3.1)
Lewis and Clark, Montana	95.1	(±2.4)	95.1	(±2.8)	94.3	(±3.1)	NA	NA	NA	NA	95.5	(±2.3)
Missoula, Montana	95.2	(±2.1)	94.7	(±2.8)	94.0	(±3.1)	95.8	(±1.8)	94.2	(±2.5)	93.0	(±3.1)
Yellowstone, Montana	94.7	(±2.4)	94.0	(±2.9)	94.2	(±2.7)	96.1	(±1.6)	95.1	(±2.4)	94.6	(±2.4)
Douglas, Nebraska	96.0	(±1.7)	95.6	(±2.1)	96.0	(±1.7)	96.3	(±1.5)	96.1	(±1.8)	96.4	(±1.6)
Lancaster, Nebraska	95.2	(±2.2)	95.5	(±2.3)	94.4	(±3.0)	96.2	(±1.6)	95.2	(±2.5)	96.0	(±2.0)

See table footnotes on page 20.

TABLE 4. (Continued) Estimated vaccination coverage with ≥ 3 doses of DTaP/DTP vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2006*

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Sarpy, Nebraska	94.6	(±2.6)	94.1	(±3.0)	94.1	(±3.1)	95.8	(±1.8)	NA	NA	NA	NA
Clark, Nevada	91.2	(±2.5)	90.9	(±2.5)	89.4	(±3.0)	91.7	(±2.1)	91.1	(±2.5)	91.1	(±2.7)
Washoe, Nevada	95.5	(±2.0)	94.9	(±2.4)	94.7	(±2.8)	95.5	(±1.9)	96.3	(±1.5)	94.7	(±2.4)
Grafton, New Hampshire	96.6	(±1.7)	95.7	(±2.2)	94.5	(±3.2)	98.1	(±1.0)	NA	NA	96.2	(±2.0)
Hillsborough, New Hampshire	96.7	(±1.0)	95.5	(±2.2)	96.1	(±1.5)	96.3	(±1.5)	96.3	(±1.5)	96.5	(±1.6)
Merrimack, New Hampshire	96.3	(±1.9)	95.2	(±2.8)	95.3	(±2.4)	96.1	(±1.7)	94.9	(±2.5)	96.1	(±2.0)
Rockingham, New Hampshire	96.5	(±1.2)	95.7	(±2.1)	95.7	(±2.1)	96.3	(±1.5)	96.3	(±1.7)	96.6	(±1.4)
Strafford, New Hampshire	95.6	(±2.2)	94.7	(±2.7)	95.0	(±2.6)	96.1	(±1.7)	95.1	(±2.5)	95.8	(±2.2)
Bergen, New Jersey	97.4	(±1.2)	94.9	(±2.7)	95.8	(±2.5)	97.4	(±1.1)	96.9	(±1.8)	95.8	(±2.2)
Burlington, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	96.2	(±1.9)
Camden, New Jersey	95.1	(±2.5)	94.9	(±2.8)	94.3	(±3.0)	NA	NA	95.0	(±2.5)	94.5	(±2.8)
Essex, New Jersey	96.4	(±1.2)	96.5	(±1.0)	91.0	(±3.7)	96.0	(±1.6)	95.4	(±2.1)	94.4	(±2.7)
Hudson, New Jersey	94.4	(±2.7)	93.4	(±3.7)	92.4	(±3.7)	95.2	(±2.0)	NA	NA	93.9	(±2.9)
Middlesex, New Jersey	96.6	(±1.8)	94.7	(±3.0)	95.0	(±2.6)	96.7	(±1.5)	95.1	(±2.4)	95.0	(±2.5)
Monmouth, New Jersey	96.4	(±1.8)	95.0	(±2.5)	93.0	(±3.4)	NA	NA	96.3	(±2.0)	95.3	(±2.5)
Ocean, New Jersey	NA	NA	NA	NA	NA	NA	95.9	(±1.8)	95.7	(±2.0)	93.9	(±2.9)
Passaic, New Jersey	NA	NA	93.4	(±3.5)	94.4	(±3.2)	95.3	(±1.9)	NA	NA	NA	NA
Union, New Jersey	96.4	(±1.8)	95.4	(±2.2)	95.1	(±2.8)	96.0	(±1.6)	NA	NA	95.1	(±2.5)
Bernalillo, New Mexico	93.3	(±2.6)	91.4	(±3.7)	93.1	(±2.7)	95.8	(±1.7)	93.0	(±2.7)	94.6	(±2.5)
Dona Ana, New Mexico ⁵	90.9	(±4.6)	92.3	(±4.0)	93.4	(±3.3)	93.6	(±2.9)	NA	NA	96.1	(±2.0)
Sandoval, New Mexico	NA	NA	NA	NA	NA	NA	94.4	(±2.4)	NA	NA	93.1	(±3.3)
San Juan, New Mexico	NA	NA	95.7	(±1.9)	94.4	(±2.9)	94.9	(±2.1)	94.3	(±3.0)	93.0	(±3.3)
Santa Fe, New Mexico	NA	NA	91.5	(±4.1)	NA	NA	94.7	(±2.3)	NA	NA	NA	NA
Bronx, New York	92.7	(±3.6)	91.5	(±4.2)	94.2	(±2.9)	94.1	(±2.4)	92.1	(±3.5)	96.4	(±1.6)
Erie, New York	95.7	(±1.9)	95.1	(±2.8)	94.9	(±2.6)	96.4	(±1.5)	95.8	(±1.8)	NA	NA
Kings, New York	93.6	(±3.1)	94.2	(±2.4)	93.1	(±2.9)	94.7	(±1.9)	94.4	(±2.3)	95.4	(±1.9)
Monroe, New York	95.8	(±2.2)	94.9	(±2.9)	94.1	(±3.1)	96.9	(±1.4)	95.6	(±2.2)	96.1	(±2.1)
Nassau, New York	97.8	(±1.3)	94.3	(±2.7)	95.7	(±2.3)	97.6	(±1.1)	96.8	(±1.8)	95.8	(±2.3)
New York, New York	95.9	(±2.3)	94.8	(±2.6)	97.3	(±1.3)	97.0	(±1.0)	98.2	(±1.1)	97.4	(±1.6)
Queens, New York	96.2	(±1.5)	93.2	(±2.8)	94.9	(±2.4)	96.2	(±1.4)	95.6	(±2.0)	95.5	(±1.8)
Suffolk, New York	96.0	(±2.0)	94.6	(±2.6)	96.0	(±1.7)	96.3	(±1.3)	95.7	(±2.1)	95.4	(±2.1)
Westchester, New York	97.4	(±1.4)	95.0	(±2.6)	96.0	(±2.5)	97.5	(±1.2)	97.1	(±1.7)	NA	NA
Durham, North Carolina	NA	NA	NA	NA	NA	NA	96.2	(±1.6)	NA	NA	NA	NA
Guilford, North Carolina	95.2	(±2.5)	94.8	(±2.8)	NA	NA	NA	NA	NA	NA	NA	NA
Mecklenburg, North Carolina	95.8	(±2.0)	95.9	(±1.8)	95.0	(±2.9)	96.4	(±1.6)	96.0	(±2.1)	96.6	(±1.5)
Wake, North Carolina	96.4	(±1.8)	94.6	(±2.9)	95.3	(±2.5)	96.6	(±1.4)	95.7	(±2.2)	96.6	(±1.3)
Burleigh, North Dakota	95.5	(±2.1)	95.5	(±2.4)	94.0	(±3.3)	95.4	(±2.0)	95.2	(±2.4)	96.4	(±1.4)
Cass, North Dakota	96.3	(±1.7)	95.4	(±2.4)	94.4	(±2.9)	97.0	(±1.3)	95.5	(±2.1)	96.3	(±1.7)
Grand Forks, North Dakota	94.5	(±2.6)	94.5	(±2.6)	93.7	(±3.2)	96.1	(±1.6)	95.6	(±1.9)	95.8	(±2.2)
Ward, North Dakota	94.9	(±2.3)	94.8	(±2.6)	94.1	(±3.0)	96.0	(±1.7)	95.1	(±2.5)	95.8	(±2.1)
Cuyahoga, Ohio	94.3	(±1.8)	93.2	(±2.1)	94.3	(±1.9)	96.8	(±0.8)	96.7	(±0.9)	96.4	(±1.7)
Franklin, Ohio	94.8	(±1.7)	95.5	(±1.5)	95.8	(±1.5)	96.3	(±1.3)	95.6	(±2.2)	96.2	(±1.8)
Hamilton, Ohio	95.9	(±2.0)	94.4	(±2.9)	94.8	(±2.6)	96.8	(±1.3)	94.7	(±2.5)	96.3	(±1.9)
Lucas, Ohio	94.7	(±2.5)	NA	NA	95.1	(±2.5)	NA	NA	NA	NA	NA	NA
Montgomery, Ohio	NA	NA	NA	NA	94.0	(±3.1)	NA	NA	NA	NA	NA	NA
Cleveland, Oklahoma	94.2	(±3.0)	NA	NA	94.2	(±3.1)	94.7	(±2.2)	94.8	(±2.7)	95.8	(±2.1)
Oklahoma, Oklahoma	94.4	(±2.6)	94.1	(±2.6)	93.3	(±2.9)	94.5	(±2.0)	94.6	(±2.5)	94.9	(±2.2)
Tulsa, Oklahoma	94.8	(±2.4)	95.0	(±2.5)	94.6	(±2.8)	95.9	(±1.7)	95.5	(±2.0)	96.1	(±1.8)
Clackamas, Oregon	95.5	(±2.1)	95.2	(±2.7)	93.9	(±3.1)	95.7	(±1.9)	NA	NA	94.1	(±2.7)
Lane, Oregon	94.9	(±2.3)	95.0	(±2.9)	93.8	(±3.1)	96.2	(±1.6)	93.4	(±3.1)	93.7	(±3.1)
Marion, Oregon	94.0	(±2.8)	94.4	(±2.8)	94.3	(±3.1)	95.0	(±2.1)	94.9	(±2.6)	93.3	(±3.3)
Multnomah, Oregon	93.6	(±2.4)	93.6	(±2.9)	94.6	(±2.5)	96.1	(±1.6)	95.6	(±2.1)	95.1	(±2.3)
Washington, Oregon	95.3	(±2.2)	92.6	(±3.2)	95.1	(±2.6)	95.9	(±1.6)	95.1	(±2.4)	95.3	(±2.1)
Allegheny, Pennsylvania	95.9	(±2.0)	95.7	(±2.1)	95.2	(±2.6)	96.4	(±1.6)	96.5	(±1.2)	96.4	(±1.7)
Delaware, Pennsylvania	95.4	(±2.2)	NA	NA	NA	NA	96.8	(±1.4)	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	96.0	(±2.0)
Montgomery, Pennsylvania	97.2	(±1.5)	93.8	(±3.1)	NA	NA	97.3	(±1.3)	NA	NA	96.9	(±1.7)
Philadelphia, Pennsylvania	94.6	(±1.8)	95.4	(±1.5)	93.6	(±2.0)	96.4	(±1.1)	95.3	(±1.6)	95.1	(±1.8)
Kent, Rhode Island	95.9	(±2.0)	95.8	(±2.0)	94.9	(±2.7)	96.7	(±1.4)	95.9	(±1.9)	96.1	(±2.0)
Newport, Rhode Island	95.2	(±2.5)	94.4	(±3.0)	94.8	(±2.8)	NA	NA	95.3	(±2.3)	NA	NA
Providence, Rhode Island	96.5	(±1.0)	95.7	(±1.9)	95.9	(±1.6)	96.6	(±1.2)	96.1	(±1.5)	95.1	(±2.1)
Washington, Rhode Island	96.2	(±1.8)	95.6	(±2.2)	95.2	(±2.5)	97.0	(±1.3)	95.6	(±2.3)	96.2	(±1.9)
Charleston, South Carolina	94.5	(±2.5)	95.5	(±2.3)	93.8	(±3.4)	97.4	(±1.2)	95.2	(±2.5)	93.5	(±3.0)
Greenville, South Carolina	95.1	(±2.3)	95.4	(±2.5)	94.8	(±2.8)	96.4	(±1.6)	94.3	(±2.8)	95.5	(±2.1)
Horry, South Carolina	NA	NA	NA	NA	93.9	(±3.5)	NA	NA	NA	NA	95.6	(±2.3)
Richland, South Carolina	95.1	(±2.4)	96.0	(±1.8)	94.7	(±2.8)	NA	NA	95.0	(±2.5)	95.7	(±2.2)

See table footnotes on page 20.

TABLE 4. (Continued) Estimated vaccination coverage with ≥ 3 doses of DTaP/DTP vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2006*

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Spartanburg, South Carolina	94.1	(±2.8)	95.1	(±2.7)	NA	NA	NA	NA	94.5	(±2.8)	95.5	(±2.2)
York, South Carolina	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	96.4	(±1.3)
Minnehaha, South Dakota	94.5	(±2.4)	95.3	(±2.6)	94.3	(±2.7)	96.4	(±1.2)	96.5	(±1.1)	96.4	(±1.5)
Pennington, South Dakota	94.8	(±2.4)	95.4	(±2.4)	94.9	(±2.6)	95.9	(±1.8)	95.1	(±2.4)	95.7	(±2.1)
Davidson, Tennessee	96.0	(±1.4)	93.2	(±2.0)	95.3	(±1.5)	96.5	(±1.2)	94.9	(±2.3)	96.4	(±1.8)
Hamilton, Tennessee	94.5	(±2.5)	95.2	(±2.6)	94.4	(±3.3)	NA	NA	NA	NA	NA	NA
Knox, Tennessee	95.8	(±2.0)	95.3	(±2.5)	93.4	(±3.3)	96.9	(±1.4)	95.2	(±2.5)	95.9	(±2.1)
Shelby, Tennessee	94.8	(±1.7)	95.7	(±1.6)	94.9	(±1.8)	96.4	(±1.2)	95.1	(±1.7)	94.5	(±2.6)
Bexar, Texas	94.2	(±1.9)	90.7	(±2.6)	93.9	(±1.8)	93.6	(±2.1)	94.4	(±2.0)	94.8	(±1.9)
Collin, Texas	NA	NA	NA	NA	96.4	(±1.2)	NA	NA	96.0	(±2.1)	NA	NA
Dallas, Texas	93.6	(±1.8)	91.8	(±2.3)	92.0	(±2.0)	93.7	(±1.7)	94.7	(±1.9)	93.9	(±1.8)
El Paso, Texas [§]	90.7	(±2.4)	89.6	(±2.9)	93.9	(±1.9)	93.9	(±2.0)	93.3	(±2.0)	95.5	(±1.7)
Harris, Texas	90.3	(±2.4)	90.3	(±2.5)	92.6	(±2.2)	92.1	(±2.1)	94.4	(±1.8)	93.8	(±2.7)
Hidalgo, Texas	NA	NA	NA	NA	NA	NA	NA	NA	93.3	(±3.7)	NA	NA
Tarrant, Texas	94.0	(±2.8)	92.8	(±3.6)	94.2	(±2.9)	95.0	(±2.1)	94.9	(±2.5)	95.8	(±2.0)
Travis, Texas	NA	NA	93.6	(±3.4)	NA	NA	95.9	(±1.9)	96.1	(±1.7)	NA	NA
Cache, Utah	93.8	(±2.8)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Davis, Utah	95.1	(±2.3)	92.9	(±3.2)	93.4	(±3.2)	95.1	(±2.1)	94.4	(±2.6)	95.6	(±2.1)
Salt Lake, Utah	94.9	(±1.9)	94.5	(±2.4)	94.4	(±2.5)	94.8	(±1.8)	95.0	(±2.4)	93.7	(±2.7)
Utah, Utah	93.7	(±2.6)	91.8	(±3.3)	92.6	(±3.3)	94.6	(±2.0)	93.8	(±2.8)	92.8	(±3.1)
Weber, Utah	94.3	(±2.5)	94.4	(±2.9)	94.1	(±3.1)	95.2	(±2.0)	NA	NA	NA	NA
Addison, Vermont	96.7	(±1.7)	NA	NA	94.2	(±3.2)	97.5	(±1.2)	NA	NA	NA	NA
Bennington, Vermont	94.9	(±2.6)	95.1	(±2.8)	NA	NA	NA	NA	NA	NA	NA	NA
Chittenden, Vermont	97.0	(±0.8)	96.5	(±1.1)	95.9	(±1.7)	96.5	(±1.3)	96.4	(±1.3)	96.1	(±1.8)
Franklin, Vermont	95.1	(±2.5)	96.0	(±1.8)	93.9	(±3.5)	96.4	(±1.6)	NA	NA	95.6	(±2.3)
Lamoille, Vermont	NA	NA	NA	NA	NA	NA	95.9	(±1.8)	NA	NA	NA	NA
Orange, Vermont	95.7	(±2.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rutland, Vermont	95.0	(±2.5)	95.0	(±2.5)	94.1	(±3.4)	96.1	(±1.8)	NA	NA	NA	NA
Washington, Vermont	95.4	(±2.2)	95.1	(±2.8)	94.3	(±3.3)	96.3	(±1.6)	95.4	(±2.2)	96.4	(±1.5)
Windham, Vermont	95.1	(±2.5)	95.6	(±2.2)	94.3	(±3.1)	NA	NA	NA	NA	95.7	(±2.1)
Windsor, Vermont	95.7	(±2.0)	95.7	(±2.2)	95.1	(±2.4)	95.8	(±1.9)	95.1	(±2.5)	NA	NA
Fairfax, Virginia	95.6	(±2.0)	95.4	(±2.3)	95.0	(±2.6)	96.5	(±1.5)	97.0	(±1.5)	97.1	(±1.3)
Loudoun, Virginia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	96.3	(±1.9)
Virginia Beach, Virginia	95.2	(±2.3)	94.5	(±2.8)	NA	NA	NA	NA	NA	NA	94.5	(±2.8)
Clark, Washington	94.6	(±2.6)	94.7	(±2.7)	93.7	(±3.3)	95.6	(±1.9)	95.2	(±2.4)	NA	NA
King, Washington [§]	96.0	(±1.4)	93.5	(±1.9)	93.5	(±1.9)	96.2	(±1.3)	95.4	(±1.8)	92.9	(±2.7)
Kitsap, Washington	NA	NA	95.5	(±2.3)	NA	NA	94.3	(±2.4)	NA	NA	94.1	(±2.7)
Pierce, Washington	95.3	(±2.1)	95.1	(±2.4)	93.9	(±3.0)	96.0	(±1.5)	95.0	(±2.4)	93.9	(±2.8)
Snohomish, Washington	94.9	(±2.4)	94.4	(±2.7)	94.1	(±2.8)	95.4	(±1.9)	95.4	(±2.3)	94.2	(±2.8)
Spokane, Washington	94.3	(±2.6)	95.5	(±2.3)	88.5	(±4.7)	95.3	(±2.0)	NA	NA	92.6	(±3.3)
Thurston, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	94.1	(±2.6)
Whatcom, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	94.1	(±2.9)
Yakima, Washington	93.4	(±3.2)	NA	NA	93.2	(±3.7)	NA	NA	NA	NA	NA	NA
Kanawha, West Virginia	95.9	(±1.6)	95.5	(±2.3)	NA	NA	96.6	(±1.5)	94.7	(±2.5)	96.0	(±2.0)
Brown, Wisconsin	NA	NA	NA	NA	94.3	(±3.0)	NA	NA	NA	NA	NA	NA
Dane, Wisconsin	96.4	(±1.9)	95.1	(±2.6)	95.3	(±2.5)	96.7	(±1.4)	96.3	(±1.5)	95.7	(±2.1)
Milwaukee, Wisconsin	93.4	(±2.0)	93.7	(±2.0)	92.2	(±2.4)	96.3	(±1.3)	95.3	(±2.0)	94.9	(±2.4)
Outagamie, Wisconsin	95.0	(±2.5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Waukesha, Wisconsin	96.5	(±1.7)	95.2	(±2.7)	96.8	(±0.6)	97.0	(±1.4)	96.1	(±2.1)	NA	NA
Albany, Wyoming	95.2	(±2.3)	94.8	(±3.0)	NA	NA	92.4	(±4.1)	NA	NA	NA	NA
Campbell, Wyoming	94.7	(±2.6)	94.0	(±3.0)	94.8	(±2.7)	96.4	(±1.5)	94.7	(±2.5)	96.3	(±1.6)
Fremont, Wyoming	93.9	(±3.0)	95.4	(±2.4)	93.6	(±3.5)	95.3	(±2.1)	NA	NA	NA	NA
Laramie, Wyoming	95.1	(±2.3)	94.5	(±2.8)	93.1	(±3.4)	94.6	(±2.1)	95.1	(±2.4)	94.8	(±2.3)
Natrona, Wyoming	94.8	(±2.4)	95.1	(±2.5)	94.7	(±2.9)	95.7	(±1.8)	95.5	(±2.2)	96.3	(±1.8)
Sweetwater, Wyoming	91.9	(±3.3)	95.1	(±2.6)	93.6	(±3.2)	NA	NA	93.0	(±3.0)	95.7	(±2.0)
Uinta, Wyoming	NA	NA	95.8	(±1.9)	NA	NA	NA	NA	NA	NA	NA	NA
United States	95.2	(±0.3)	94.7	(±0.4)	94.4	(±0.4)	96.1	(±0.3)	95.9	(±0.3)	95.8	(±0.4)
Sample size, no.	44,855		45,623		45,052		43,308		38,607		35,447	
All selected counties	94.9	(±0.4)	94.1	(±0.5)[†]	94.3	(±0.5)[†]	96.0	(±0.4)[†]	95.8	(±0.4)[†]	95.7	(±0.5)[†]
Sample size, no.	29,227		30,362		29,851		28,845		23,485		20,552	
Range, %	90.3–97.9		89.6–96.9		87.4–97.3		91.7–98.1		91.1–98.2		91.1–97.4	

Abbreviations: CI = confidence interval; DTaP = diphtheria and tetanus toxoids and acellular pertussis; DTP = diphtheria and tetanus toxoids and pertussis; NA = not available.

* All estimates exceed the *Healthy People 2010* objective of 90% vaccination coverage.

[†] Estimates increased significantly between the first and last biennial periods ($p < 0.05$).

TABLE 5. Estimated vaccination coverage with ≥4 doses of DTaP/DTP vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Jefferson, Alabama	85.2	(±3.2)	86.4	(±2.8)	86.7	(±3.0)	86.1	(±3.2)	87.6	(±3.6)	92.1	(±2.7)*	87.0	(±6.0)
Madison, Alabama	NA	NA	81.5	(±7.5)	83.3	(±6.0)	NA	NA	85.4	(±6.5)	86.4	(±5.5)	87.6	(±6.7)
Mobile, Alabama	75.5	(±8.7)	82.8	(±6.4)	80.4	(±6.6)	82.5	(±6.6)	83.0	(±7.1)	82.5	(±6.3)	81.2	(±8.2)
Montgomery, Alabama	NA	NA	77.1	(±8.3)	81.4	(±7.2)	NA	NA	NA	NA	NA	NA	NA	NA
Shelby, Alabama	NA	NA	NA	NA	86.4	(±5.5)	87.5	(±5.7)	89.0	(±5.3)	NA	NA	88.8	(±6.1)
Anchorage, Alaska	NA	NA	NA	NA	82.3	(±4.2)	79.5	(±5.0)	82.8	(±4.8)	84.3	(±4.9)	83.7	(±5.6)
Fairbanks North Star, Alaska	NA	NA	NA	NA	79.7	(±6.2)	78.2	(±6.5)	80.0	(±6.4)	82.5	(±6.0)	81.2	(±7.3)
Kenai Peninsula, Alaska	NA	NA	NA	NA	82.6	(±6.2)	NA	NA	NA	NA	NA	NA	NA	NA
Matanuska-Susitna, Alaska	NA	NA	NA	NA	82.1	(±6.1)	76.3	(±7.9)	85.9	(±5.9)	80.4	(±6.3)	74.1	(±8.3)
Cochise, Arizona	NA	NA	74.3	(±8.8)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Coconino, Arizona†	NA	NA	68.3	(±9.5)	NA	NA	NA	NA	87.0	(±9.9)	NA	NA	NA	NA
Maricopa, Arizona†	75.6	(±4.4)	80.3	(±3.5)	76.9	(±3.8)	78.3	(±3.6)	83.7	(±3.2)	81.7	(±3.6)	82.5	(±4.9)
Mohave, Arizona	NA	NA	NA	NA	74.6	(±7.8)	74.4	(±8.7)	NA	NA	NA	NA	NA	NA
Pima, Arizona	77.9	(±5.7)	80.5	(±5.0)	84.3	(±4.5)	76.5	(±5.4)	82.3	(±5.1)	80.7	(±5.5)	85.0	(±6.5)
Pinal, Arizona	75.0	(±8.3)	69.5	(±9.8)	77.3	(±7.8)	72.5	(±8.2)	77.8	(±5.9)	77.5	(±8.2)	NA	NA
Yavapai, Arizona	NA	NA	NA	NA	NA	NA	76.8	(±8.5)	83.7	(±6.5)	NA	NA	NA	NA
Yuma, Arizona	76.0	(±8.4)	74.8	(±9.2)	77.2	(±7.5)	74.6	(±8.5)	85.1	(±7.0)	80.0	(±7.9)	NA	NA
Benton, Arkansas	NA	NA	79.1	(±7.1)	NA	NA	80.9	(±7.1)	88.1	(±5.2)	79.7	(±7.1)	83.6	(±6.9)
Pulaski, Arkansas	77.6	(±7.4)	84.0	(±5.6)	75.1	(±6.9)	77.4	(±7.2)	83.6	(±7.1)	84.8	(±6.0)	84.9	(±6.7)
Washington, Arkansas	80.7	(±7.2)	79.8	(±6.9)	NA	NA	75.1	(±8.5)	NA	NA	NA	NA	80.0	(±7.9)
Alameda, California	78.6	(±7.5)	NA	NA	80.5	(±6.8)	85.9	(±6.5)	87.5	(±5.8)	86.9	(±4.2)	87.0	(±5.8)
Los Angeles, California†	78.3	(±4.4)	77.1	(±3.9)	78.7	(±3.7)	81.0	(±3.8)	84.2	(±3.3)	84.1	(±3.4)	85.0	(±3.2)
Orange, California	80.1	(±6.7)	84.3	(±5.5)	78.6	(±6.4)	83.1	(±6.3)	84.3	(±5.8)	85.5	(±5.6)	88.1	(±5.7)
Riverside, California	NA	NA	NA	NA	78.8	(±7.3)	73.7	(±8.7)	79.8	(±6.8)	NA	NA	84.1	(±7.8)
San Bernardino, California	NA	NA	74.2	(±7.9)	77.9	(±7.4)	75.3	(±8.3)	83.9	(±6.4)	75.1	(±6.0)	80.1	(±6.7)
San Diego, California†	80.1	(±3.8)	82.1	(±3.1)	80.7	(±3.3)	83.2	(±3.2)	84.9	(±3.3)	85.8	(±4.6)	87.6	(±6.2)
San Mateo, California	NA	NA	85.5	(±6.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Santa Clara, California	82.9	(±3.5)	84.8	(±3.2)	86.0	(±2.8)	86.2	(±2.8)	88.7	(±3.0)	86.8	(±4.8)	NA	NA
Adams, Colorado	78.0	(±7.7)	82.8	(±5.9)	77.0	(±7.0)	73.9	(±8.5)	83.4	(±6.2)	NA	NA	NA	NA
Arapahoe, Colorado	85.8	(±5.9)	85.5	(±5.6)	85.1	(±5.5)	74.4	(±7.5)	85.1	(±5.8)	NA	NA	86.9	(±6.8)
Boulder, Colorado	NA	NA	86.4	(±5.2)	86.5	(±5.6)	77.6	(±7.8)	82.2	(±6.6)	86.3	(±5.5)	87.2	(±6.6)
Denver, Colorado	81.7	(±6.9)	84.4	(±5.4)	82.1	(±5.8)	80.8	(±6.5)	83.3	(±6.5)	NA	NA	NA	NA
Douglas, Colorado	NA	NA	NA	NA	87.5	(±5.2)	87.3	(±5.7)	90.2	(±4.6)*	NA	NA	NA	NA
El Paso, Colorado	80.3	(±6.9)	81.1	(±6.8)	79.6	(±6.1)	79.3	(±6.9)	78.5	(±6.9)	83.3	(±6.0)	81.5	(±7.5)
Jefferson, Colorado	83.6	(±6.2)	83.3	(±5.4)	85.9	(±5.4)	89.7	(±4.3)	87.8	(±5.1)	89.9	(±4.3)	85.9	(±6.5)
Larimer, Colorado	NA	NA	NA	NA	81.6	(±6.2)	82.7	(±7.0)	NA	NA	84.9	(±6.2)	NA	NA
Weld, Colorado	NA	NA	NA	NA	82.6	(±6.7)	75.2	(±8.6)	84.5	(±6.1)	NA	NA	84.0	(±7.7)
Fairfield, Connecticut	85.5	(±5.4)	88.1	(±3.8)	89.7	(±3.6)	90.4	(±3.8)*	91.0	(±4.1)*	89.0	(±4.1)	86.7	(±5.3)
Hartford, Connecticut	87.1	(±5.0)	89.6	(±4.3)	88.0	(±4.3)	86.5	(±4.8)	91.9	(±3.5)*	89.6	(±3.8)	89.6	(±4.9)
New Haven, Connecticut	85.1	(±5.4)	91.2	(±3.5)*	87.6	(±4.3)	83.6	(±5.5)	89.1	(±4.8)	87.8	(±4.8)	89.3	(±4.6)
New London, Connecticut	87.5	(±5.8)	85.3	(±5.7)	85.4	(±5.5)	NA	NA	93.5	(±3.3)*	87.7	(±5.1)	85.6	(±6.5)
Kent, Delaware	83.0	(±5.8)	84.4	(±5.3)	82.2	(±5.4)	84.6	(±5.2)	84.8	(±5.7)	83.7	(±6.3)	83.6	(±6.4)
New Castle, Delaware	83.5	(±4.2)	84.7	(±3.6)	82.9	(±3.6)	88.0	(±3.2)	89.1	(±3.3)	88.4	(±3.6)	85.7	(±4.3)
Sussex, Delaware	79.4	(±6.5)	81.9	(±6.0)	85.4	(±5.1)	86.2	(±5.5)	87.3	(±5.0)	88.8	(±4.5)	86.0	(±5.3)
District of Columbia	81.7	(±4.1)	78.6	(±3.9)	80.0	(±3.7)	79.3	(±4.1)	87.0	(±3.6)	85.2	(±3.2)	85.2	(±3.5)
Broward, Florida	79.6	(±7.1)	81.7	(±5.9)	83.9	(±5.4)	84.3	(±6.4)	86.3	(±5.3)	84.5	(±5.9)	87.2	(±6.5)
Duval, Florida†	78.3	(±4.2)	79.9	(±3.8)	82.7	(±3.4)	81.1	(±3.9)	84.0	(±3.5)	84.3	(±3.2)	NA	NA
Hillsborough, Florida	76.3	(±8.4)	84.6	(±6.3)	81.3	(±6.2)	80.2	(±7.0)	83.8	(±6.1)	82.6	(±6.3)	NA	NA
Dade, Florida	NA	NA	NA	NA	84.1	(±3.5)	81.0	(±3.8)	87.2	(±3.1)	86.6	(±4.4)	86.3	(±3.5)
Orange, Florida†	NA	NA	NA	NA	80.5	(±6.5)	NA	NA	86.0	(±6.2)	NA	NA	88.7	(±4.4)
Palm Beach, Florida	NA	NA	82.1	(±6.4)	86.6	(±5.2)	85.8	(±5.9)	89.2	(±4.8)	84.0	(±6.1)	86.0	(±8.0)
Pinellas, Florida	NA	NA	81.5	(±6.6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobb, Georgia	81.0	(±7.1)	82.6	(±6.3)	84.7	(±5.6)	84.8	(±5.9)	89.9	(±4.7)	87.3	(±4.8)	83.4	(±6.8)
DeKalb, Georgia†	81.2	(±6.2)	77.6	(±5.4)	85.3	(±4.3)	81.0	(±4.6)	84.8	(±3.8)	81.6	(±5.7)	90.4	(±5.1)*
Fulton, Georgia	80.2	(±5.8)	83.1	(±4.2)	84.1	(±4.0)	83.8	(±4.3)	86.6	(±3.7)	85.4	(±4.7)	81.7	(±7.4)
Gwinnett, Georgia	82.8	(±7.1)	83.9	(±5.8)	86.0	(±5.5)	85.0	(±6.1)	85.2	(±5.6)	88.7	(±4.8)	78.5	(±9.1)
Hawaii, Hawaii	81.4	(±6.8)	82.1	(±7.8)	79.1	(±6.7)	79.3	(±7.8)	84.7	(±5.9)	78.4	(±7.0)	86.6	(±6.2)
Honolulu, Hawaii	84.8	(±4.0)	82.4	(±4.1)	82.4	(±4.0)	78.0	(±4.7)	83.8	(±3.5)	85.7	(±3.8)	83.6	(±4.4)
Maui, Hawaii	79.5	(±7.1)	84.9	(±6.9)	78.8	(±7.0)	78.9	(±7.6)	84.9	(±5.9)	83.2	(±7.0)	88.4	(±6.1)
Ada, Idaho	79.3	(±6.0)	83.8	(±4.7)	82.2	(±5.1)	78.4	(±6.1)	87.4	(±4.5)	85.1	(±4.8)	80.5	(±6.4)
Bannock, Idaho	NA	NA	82.2	(±6.6)	81.7	(±6.5)	80.8	(±7.4)	NA	NA	NA	NA	NA	NA
Bonneville, Idaho	76.0	(±7.3)	77.2	(±7.2)	85.9	(±5.3)	83.3	(±6.5)	87.0	(±5.3)	83.5	(±6.2)	81.5	(±8.6)
Canyon, Idaho	NA	NA	74.9	(±7.1)	75.0	(±7.0)	76.6	(±7.6)	83.7	(±6.3)	75.4	(±7.1)	75.0	(±8.7)
Kootenai, Idaho	79.3	(±7.3)	83.2	(±6.3)	83.0	(±6.1)	79.6	(±7.7)	NA	NA	NA	NA	NA	NA
Twin Falls, Idaho	NA	NA	77.7	(±7.5)	NA	NA	82.1	(±7.0)	NA	NA	NA	NA	NA	NA
Cook, Illinois	78.3	(±4.1)	75.7	(±4.2)	76.8	(±3.9)	82.4	(±3.3)	85.8	(±3.4)	85.5	(±3.4)	80.2	(±4.0)
DuPage, Illinois	84.8	(±6.0)	86.2	(±5.1)	86.1	(±4.9)	86.0	(±6.0)	91.7	(±4.0)*	NA	NA	86.5	(±5.8)

See table footnotes on page 24.

TABLE 5. (Continued) Estimated vaccination coverage with ≥ 4 doses of DTaP/DTP vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Lake, Illinois†	84.1	(±6.4)	85.8	(±5.6)	87.2	(±5.1)	85.3	(±5.9)	87.4	(±5.5)	NA	NA	92.6	(±3.6)*
Will, Illinois	NA	NA	NA	NA	85.1	(±5.9)	82.4	(±6.7)	89.7	(±4.5)	87.0	(±5.4)	84.8	(±6.7)
Allen, Indiana	NA	NA	81.5	(±6.4)	84.4	(±5.9)	78.2	(±7.5)	88.5	(±5.0)	NA	NA	83.9	(±8.0)
Hamilton, Indiana	82.1	(±7.6)	86.9	(±5.6)	91.3	(±3.5)*	88.6	(±5.2)	90.1	(±4.6)*	NA	NA	90.0	(±5.4)
Lake, Indiana	72.2	(±9.0)	74.2	(±7.9)	75.6	(±7.0)	78.8	(±7.4)	84.3	(±6.5)	NA	NA	78.8	(±8.6)
Marion, Indiana	79.6	(±4.0)	83.0	(±3.3)	79.8	(±3.8)	78.9	(±4.0)	84.2	(±3.4)	87.0	(±4.7)	85.4	(±5.4)
Linn, Iowa	NA	NA	86.3	(±5.8)	NA	NA	85.8	(±5.8)	91.2	(±4.4)*	NA	NA	84.3	(±7.7)
Polk, Iowa	83.9	(±6.2)	84.9	(±5.0)	85.5	(±5.2)	82.3	(±6.0)	91.0	(±4.0)*	86.7	(±4.8)	85.6	(±5.9)
Scott, Iowa	NA	NA	NA	NA	84.0	(±6.0)	84.7	(±6.5)	86.5	(±5.5)	NA	NA	NA	NA
Johnson, Kansas	84.5	(±5.8)	87.1	(±4.5)	87.6	(±4.1)	88.9	(±4.1)	89.4	(±4.3)	89.9	(±3.3)	87.2	(±5.5)
Sedgwick, Kansas	74.8	(±7.2)	83.5	(±5.5)	81.7	(±5.5)	81.9	(±6.5)	86.5	(±5.6)	85.2	(±5.3)	81.5	(±7.2)
Shawnee, Kansas	NA	NA	NA	NA	81.6	(±6.6)	NA	NA	NA	NA	83.9	(±6.2)	83.7	(±9.1)
Fayette, Kentucky	NA	NA	89.2	(±4.7)	86.2	(±5.5)	NA	NA	89.9	(±4.6)	NA	NA	NA	NA
Jefferson, Kentucky†	78.9	(±6.8)	85.0	(±4.9)	87.0	(±4.7)	79.9	(±6.4)	86.6	(±5.6)	87.2	(±4.7)	88.7	(±5.1)
Caddo, Louisiana	NA	NA	78.9	(±7.1)	77.4	(±7.3)	NA	NA	NA	NA	88.8	(±5.2)	82.7	(±7.8)
East Baton Rouge, Louisiana	80.4	(±7.5)	78.2	(±7.5)	82.8	(±6.0)	78.9	(±7.4)	84.7	(±6.2)	84.8	(±5.9)	87.4	(±6.8)
Jefferson, Louisiana	80.5	(±7.1)	85.1	(±5.7)	82.7	(±6.0)	78.9	(±7.3)	78.1	(±7.8)	84.1	(±5.8)	83.2	(±6.9)
Lafayette, Louisiana	NA	NA	77.1	(±7.9)	NA	NA	NA	NA	82.5	(±6.7)	NA	NA	86.9	(±6.5)
Orleans, Louisiana	77.4	(±4.6)	78.8	(±4.0)	76.5	(±4.2)	71.7	(±4.7)	81.8	(±3.9)	66.2	(±10.1) [§]	80.8	(±8.7)
St. Tammany, Louisiana	NA	NA	NA	NA	NA	NA	82.1	(±6.8)	87.1	(±6.0)	85.9	(±5.1)	NA	NA
Androscoggin, Maine	85.0	(±6.5)	87.0	(±5.7)	85.7	(±5.6)	87.0	(±5.6)	90.5	(±4.6)*	85.9	(±5.9)	85.2	(±6.9)
Aroostook, Maine	NA	NA	88.2	(±4.8)	86.0	(±5.9)	NA	NA	88.4	(±5.3)	NA	NA	NA	NA
Cumberland, Maine	86.7	(±4.7)	89.1	(±3.7)	87.5	(±4.2)	86.9	(±4.6)	90.4	(±3.7)*	89.4	(±3.8)	88.1	(±4.7)
Kennebec, Maine	86.0	(±6.2)	92.0	(±3.1)*	86.6	(±5.5)	85.1	(±6.0)	85.8	(±6.3)	NA	NA	86.6	(±6.9)
Penobscot, Maine	87.6	(±5.6)	85.4	(±5.6)	82.9	(±5.8)	84.4	(±6.3)	89.6	(±4.5)	87.7	(±5.2)	84.1	(±6.9)
York, Maine	86.2	(±6.0)	87.0	(±4.8)	86.6	(±4.9)	86.9	(±5.0)	89.0	(±4.4)	86.5	(±5.2)	87.6	(±5.8)
Anne Arundel, Maryland	84.9	(±6.0)	83.5	(±6.1)	85.1	(±5.7)	84.7	(±6.0)	86.5	(±6.0)	89.6	(±4.6)	87.4	(±6.3)
Baltimore, Maryland	84.3	(±6.1)	85.6	(±5.0)	84.8	(±5.1)	84.5	(±5.9)	87.9	(±5.1)	90.3	(±4.0)*	90.8	(±4.8)*
Frederick, Maryland	NA	NA	NA	NA	86.4	(±5.3)	87.2	(±5.8)	92.5	(±3.6)*	NA	NA	NA	NA
Harford, Maryland	NA	NA	NA	NA	NA	NA	NA	NA	82.2	(±8.1)	NA	NA	NA	NA
Howard, Maryland	NA	NA	89.4	(±5.0)	86.7	(±5.5)	86.9	(±5.8)	90.4	(±4.6)*	NA	NA	92.9	(±4.0)*
Montgomery, Maryland†	80.9	(±6.4)	90.6	(±3.9)*	84.9	(±4.7)	86.8	(±4.5)	88.5	(±4.2)	93.7	(±3.0)*	92.9	(±3.7)*
Prince George's, Maryland	82.5	(±6.1)	77.1	(±7.4)	80.6	(±6.1)	76.4	(±7.8)	80.0	(±7.5)	84.3	(±5.8)	88.5	(±5.0)
City of Baltimore, Maryland†	NA	NA	NA	NA	78.1	(±3.8)	78.2	(±4.0)	85.0	(±3.3)	80.5	(±4.5)	88.6	(±4.4)
Bristol, Massachusetts	84.5	(±6.5)	86.2	(±5.4)	86.6	(±5.2)	85.5	(±5.9)	90.1	(±4.5)*	87.4	(±5.3)	NA	NA
Essex, Massachusetts	84.4	(±6.2)	88.7	(±4.6)	85.7	(±5.0)	87.2	(±5.2)	88.3	(±5.2)	87.3	(±5.2)	85.6	(±7.1)
Hampden, Massachusetts	83.5	(±6.3)	87.5	(±5.2)	84.2	(±5.7)	81.1	(±7.3)	88.1	(±5.8)	NA	NA	NA	NA
Middlesex, Massachusetts	86.1	(±4.7)	91.6	(±3.2)*	86.9	(±4.3)	87.4	(±4.4)	92.5	(±3.2)*	93.7	(±2.7)*	90.1	(±4.4)*
Norfolk, Massachusetts	85.8	(±5.6)	91.9	(±3.8)*	86.6	(±5.1)	89.8	(±4.7)	97.0	(±0.1)*	93.6	(±2.8)*	89.8	(±5.2)
Plymouth, Massachusetts	84.0	(±6.5)	88.3	(±5.0)	87.4	(±5.3)	87.0	(±5.5)	91.0	(±4.1)*	NA	NA	86.7	(±7.0)
Suffolk, Massachusetts	84.7	(±4.7)	91.6	(±2.5)*	88.3	(±2.8)	87.0	(±3.2)	90.3	(±3.2)*	88.5	(±4.6)	91.1	(±5.3)*
Worcester, Massachusetts	86.8	(±5.5)	87.8	(±5.0)	86.3	(±5.2)	88.2	(±4.8)	90.3	(±4.0)*	90.0	(±4.3)	87.1	(±6.0)
Kent, Michigan	83.6	(±7.0)	84.7	(±6.2)	84.7	(±6.0)	85.7	(±6.5)	89.0	(±5.1)	NA	NA	87.7	(±6.3)
Macomb, Michigan	82.4	(±6.9)	87.6	(±5.4)	85.1	(±5.6)	83.8	(±6.1)	89.4	(±4.8)	86.8	(±5.3)	NA	NA
Oakland, Michigan	80.6	(±6.7)	88.7	(±4.4)	87.9	(±4.7)	86.8	(±5.2)	87.0	(±5.1)	88.9	(±4.2)	87.5	(±5.9)
Wayne, Michigan	74.3	(±4.7)	73.4	(±4.7)	76.1	(±4.5)	73.4	(±5.4)	81.9	(±4.5)	79.6	(±5.3)	78.7	(±7.1)
Anoka, Minnesota	82.9	(±7.1)	85.2	(±6.7)	86.5	(±5.4)	87.7	(±5.8)	NA	NA	NA	NA	85.1	(±7.1)
Dakota, Minnesota	85.7	(±6.3)	85.7	(±5.8)	87.7	(±5.2)	87.0	(±5.6)	89.8	(±4.8)	87.1	(±5.3)	88.1	(±6.5)
Hennepin, Minnesota	85.2	(±5.2)	87.5	(±4.1)	89.0	(±4.3)	86.2	(±4.9)	89.3	(±4.4)	90.9	(±3.9)*	88.6	(±4.3)
Ramsey, Minnesota	84.6	(±6.1)	86.9	(±5.3)	85.4	(±5.5)	81.1	(±6.9)	88.3	(±5.1)	88.4	(±4.7)	87.4	(±6.3)
Washington, Minnesota	NA	NA	83.5	(±6.7)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Harrison, Mississippi	NA	NA	80.3	(±6.8)	NA	NA	NA	NA	NA	NA	81.4	(±6.7)	NA	NA
Hinds, Mississippi	81.3	(±7.2)	77.2	(±7.5)	77.4	(±7.2)	77.6	(±8.4)	NA	NA	83.7	(±6.6)	77.5	(±9.4)
Greene, Missouri	NA	NA	NA	NA	NA	NA	83.8	(±6.8)	NA	NA	NA	NA	NA	NA
Jackson, Missouri	76.5	(±7.6)	82.2	(±6.4)	81.6	(±6.4)	86.9	(±5.6)	87.8	(±5.0)	88.7	(±4.7)	83.2	(±6.8)
Jefferson, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	82.9	(±8.0)
St. Charles, Missouri	NA	NA	85.0	(±6.3)	NA	NA	NA	NA	NA	NA	NA	NA	88.6	(±6.0)
St. Louis, Missouri	82.2	(±6.0)	86.8	(±5.0)	87.4	(±4.6)	88.0	(±5.1)	90.4	(±4.2)*	88.8	(±3.7)	88.6	(±5.5)
City of St. Louis, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	80.7	(±8.7)
Cascade, Montana	73.6	(±8.0)	85.0	(±5.1)	86.3	(±5.4)	82.4	(±6.4)	86.9	(±5.9)	84.8	(±5.6)	81.9	(±7.5)
Flathead, Montana	75.7	(±8.2)	78.4	(±7.2)	83.6	(±6.1)	72.3	(±7.4)	82.1	(±6.6)	72.8	(±8.8)	76.5	(±8.6)
Gallatin, Montana	82.6	(±6.3)	81.2	(±6.7)	82.9	(±6.0)	81.6	(±6.9)	85.0	(±6.1)	85.9	(±5.4)	82.9	(±7.0)
Lewis and Clark, Montana	NA	NA	85.4	(±5.4)	83.0	(±6.3)	84.9	(±6.2)	NA	NA	NA	NA	85.6	(±7.2)
Missoula, Montana	83.9	(±6.1)	85.4	(±5.5)	85.2	(±5.8)	85.0	(±5.9)	86.7	(±5.2)	80.0	(±6.1)	75.3	(±8.6)
Yellowstone, Montana	76.7	(±6.8)	84.7	(±5.1)	83.9	(±5.5)	83.9	(±5.6)	85.7	(±5.0)	87.0	(±4.6)	79.1	(±7.9)
Douglas, Nebraska†	80.2	(±5.6)	84.9	(±4.4)	87.6	(±4.1)	85.2	(±4.8)	85.7	(±4.4)	88.3	(±4.0)	88.9	(±3.8)
Lancaster, Nebraska	86.0	(±5.2)	80.6	(±5.5)	85.3	(±4.8)	85.6	(±5.5)	92.3	(±3.6)*	88.8	(±4.7)	88.9	(±5.5)

See table footnotes on page 24.

TABLE 5. (Continued) Estimated vaccination coverage with ≥ 4 doses of DTaP/DTP vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Sarpy, Nebraska	83.1	(±6.7)	82.0	(±6.5)	84.2	(±6.0)	84.6	(±6.4)	84.5	(±7.2)	NA	NA	NA	NA
Clark, Nevada	71.7	(±5.1)	77.1	(±4.3)	75.6	(±4.0)	74.7	(±4.6)	75.1	(±4.3)	72.3	(±4.7)	72.2	(±5.3)
Washoe, Nevada	83.4	(±6.0)	86.6	(±4.7)	86.4	(±4.6)	84.2	(±6.0)	88.9	(±4.7)	87.8	(±4.4)	86.0	(±5.9)
Grafton, New Hampshire†	NA	NA	88.0	(±4.8)	86.9	(±5.3)	85.1	(±6.4)	95.6	(±2.6)*	NA	NA	95.6	(±1.8)*
Hillsborough, New Hampshire	87.1	(±4.1)	90.2	(±3.4)*	86.3	(±4.3)	89.1	(±3.7)	91.7	(±3.2)*	89.6	(±3.5)	88.7	(±4.3)
Merrimack, New Hampshire	86.3	(±5.6)	89.1	(±4.3)	88.2	(±4.9)	87.8	(±5.1)	91.8	(±3.6)*	88.5	(±4.8)	89.1	(±6.2)
Rockingham, New Hampshire	86.1	(±5.2)	88.6	(±4.2)	88.5	(±3.8)	89.8	(±3.9)	90.5	(±4.1)*	87.9	(±4.3)	89.7	(±4.8)
Strafford, New Hampshire	87.0	(±5.4)	87.6	(±5.3)	86.6	(±5.1)	86.7	(±5.6)	92.9	(±3.6)*	87.1	(±5.2)	86.9	(±7.0)
Bergen, New Jersey†	80.5	(±7.1)	91.3	(±3.8)*	87.6	(±4.7)	88.8	(±5.3)	88.6	(±5.1)	92.4	(±3.7)*	91.5	(±4.9)*
Burlington, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	87.9	(±6.3)
Camden, New Jersey	NA	NA	84.6	(±6.4)	81.8	(±6.6)	83.6	(±6.6)	NA	NA	86.6	(±5.5)	88.1	(±6.1)
Essex, New Jersey	81.3	(±5.9)	82.1	(±5.3)	80.4	(±5.6)	72.7	(±7.0)	80.3	(±6.2)	84.2	(±5.5)	81.1	(±7.5)
Hudson, New Jersey	78.0	(±8.1)	83.6	(±6.2)	78.3	(±7.7)	75.6	(±8.9)	79.7	(±7.3)	NA	NA	77.9	(±8.7)
Middlesex, New Jersey	NA	NA	85.4	(±5.6)	84.5	(±5.5)	83.7	(±6.2)	90.5	(±4.5)*	88.7	(±4.8)	85.1	(±6.9)
Monmouth, New Jersey	NA	NA	87.6	(±5.2)	86.6	(±4.9)	82.4	(±6.7)	NA	NA	90.3	(±4.3)*	86.7	(±6.1)
Morris, New Jersey	81.3	(±7.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ocean, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	86.6	(±5.8)	83.8	(±6.1)	83.8	(±7.2)
Passaic, New Jersey	NA	NA	NA	NA	80.2	(±6.9)	79.1	(±7.6)	84.5	(±6.1)	NA	NA	NA	NA
Union, New Jersey	NA	NA	82.0	(±7.0)	83.9	(±6.0)	85.4	(±6.2)	86.7	(±5.3)	NA	NA	88.8	(±6.0)
Bernalillo, New Mexico†	75.2	(±7.2)	78.3	(±5.7)	80.8	(±5.6)	74.8	(±6.0)	85.1	(±5.3)	80.8	(±5.4)	84.8	(±6.1)
Dona Ana, New Mexico	75.4	(±8.5)	78.1	(±8.1)	75.5	(±7.7)	72.8	(±9.2)	82.2	(±7.8)	NA	NA	80.1	(±9.0)
Sandoval, New Mexico	NA	NA	NA	NA	NA	NA	NA	NA	85.9	(±6.9)	NA	NA	79.3	(±9.4)
San Juan, New Mexico	NA	NA	NA	NA	78.0	(±7.7)	75.1	(±8.4)	85.4	(±8.8)	77.9	(±7.7)	80.1	(±8.8)
Santa Fe, New Mexico	84.4	(±6.5)	NA	NA	77.5	(±7.4)	NA	NA	80.0	(±7.8)	NA	NA	NA	NA
Bronx, New York	73.8	(±8.6)	77.1	(±7.7)	72.9	(±8.1)	81.6	(±7.4)	77.7	(±7.1)	74.5	(±8.1)	83.1	(±6.8)
Erie, New York	82.5	(±6.8)	87.4	(±5.3)	86.5	(±5.5)	84.8	(±6.5)	87.7	(±5.6)	86.1	(±5.6)	NA	NA
Kings, New York	79.6	(±6.6)	79.0	(±6.1)	78.6	(±5.3)	79.0	(±6.1)	77.9	(±6.2)	81.6	(±5.1)	79.8	(±5.1)
Monroe, New York	NA	NA	88.6	(±4.9)	85.9	(±5.6)	82.9	(±6.9)	89.9	(±4.6)	89.5	(±4.2)	89.7	(±5.7)
Nassau, New York	83.4	(±7.0)	91.6	(±3.7)*	84.3	(±5.0)	86.9	(±5.4)	87.8	(±5.1)	93.3	(±3.5)*	90.8	(±4.2)*
New York, New York	83.4	(±7.2)	89.7	(±4.6)	89.8	(±4.6)	93.3	(±3.6)*	87.1	(±5.6)	86.2	(±5.5)	89.4	(±4.9)
Queens, New York	82.4	(±6.1)	84.7	(±5.2)	78.3	(±5.6)	83.9	(±5.5)	85.8	(±4.8)	87.8	(±4.5)	88.0	(±4.8)
Suffolk, New York	82.9	(±5.9)	88.0	(±4.6)	84.0	(±5.1)	84.7	(±5.8)	89.6	(±4.7)	87.0	(±5.0)	84.6	(±5.9)
Westchester, New York	NA	NA	90.3	(±4.3)*	87.6	(±5.2)	89.1	(±5.3)	88.4	(±5.5)	93.3	(±3.4)*	NA	NA
Durham, North Carolina	NA	NA	NA	NA	NA	NA	NA	NA	87.1	(±5.7)	NA	NA	NA	NA
Guilford, North Carolina	NA	NA	82.2	(±6.7)	84.5	(±5.9)	NA	NA	NA	NA	NA	NA	NA	NA
Mecklenburg, North Carolina	82.7	(±6.6)	82.5	(±6.4)	84.1	(±6.1)	83.2	(±6.6)	89.5	(±5.0)	89.2	(±4.7)	85.8	(±6.7)
Wake, North Carolina	87.1	(±5.5)	85.7	(±5.9)	84.9	(±5.7)	86.9	(±5.7)	91.1	(±4.2)*	91.1	(±3.8)*	90.8	(±4.8)*
Burleigh, North Dakota	82.4	(±6.3)	86.7	(±4.8)	85.4	(±5.2)	84.8	(±6.3)	88.3	(±5.2)	86.7	(±5.3)	82.6	(±6.7)
Cass, North Dakota	84.8	(±5.1)	85.5	(±4.5)	85.5	(±4.6)	85.9	(±5.2)	89.6	(±3.9)	89.9	(±3.6)	89.1	(±5.1)
Grand Forks, North Dakota	85.1	(±5.9)	84.1	(±5.9)	85.7	(±5.3)	82.6	(±6.2)	90.5	(±4.5)*	88.0	(±4.9)	86.8	(±7.1)
Ward, North Dakota	86.2	(±5.7)	81.2	(±6.4)	85.1	(±5.3)	84.4	(±6.1)	85.0	(±6.1)	86.7	(±5.3)	82.6	(±7.1)
Cuyahoga, Ohio†	79.9	(±4.0)	81.1	(±3.4)	79.2	(±3.6)	79.5	(±4.1)	86.5	(±3.3)	89.8	(±2.7)	90.1	(±5.2)*
Franklin, Ohio	81.8	(±3.6)	82.2	(±3.3)	84.7	(±2.9)	84.7	(±3.2)	87.5	(±2.9)	86.3	(±5.0)	82.0	(±7.7)
Hamilton, Ohio†	81.8	(±6.8)	86.6	(±5.2)	84.7	(±5.8)	87.6	(±5.5)	88.8	(±4.9)	88.5	(±4.6)	92.6	(±3.7)*
Lucas, Ohio	NA	NA	84.4	(±5.9)	NA	NA	82.2	(±7.0)	NA	NA	NA	NA	NA	NA
Montgomery, Ohio	NA	NA	NA	NA	NA	NA	81.6	(±6.7)	NA	NA	NA	NA	NA	NA
Cleveland, Oklahoma	NA	NA	81.9	(±7.0)	NA	NA	84.7	(±6.5)	86.4	(±5.9)	85.6	(±5.8)	85.2	(±7.0)
Oklahoma, Oklahoma	80.7	(±6.9)	78.5	(±6.4)	81.6	(±5.4)	77.5	(±6.6)	77.6	(±6.6)	83.2	(±5.4)	81.5	(±7.2)
Tulsa, Oklahoma	73.9	(±7.2)	81.1	(±5.8)	82.1	(±5.8)	84.5	(±5.9)	85.6	(±5.3)	83.6	(±5.5)	81.3	(±7.0)
Clackamas, Oregon	83.2	(±6.4)	80.4	(±6.2)	87.1	(±5.0)	84.6	(±6.2)	86.7	(±6.0)	NA	NA	81.4	(±7.6)
Lane, Oregon	79.3	(±7.1)	83.9	(±6.1)	83.6	(±6.2)	74.5	(±7.9)	84.9	(±6.2)	81.7	(±6.4)	81.2	(±8.2)
Marion, Oregon	83.8	(±6.5)	82.7	(±6.0)	82.3	(±5.7)	79.5	(±7.4)	83.6	(±6.4)	80.0	(±7.1)	79.7	(±8.9)
Multnomah, Oregon	82.6	(±5.5)	83.3	(±5.2)	84.1	(±5.1)	82.6	(±5.4)	84.9	(±5.4)	84.8	(±5.4)	83.6	(±6.3)
Washington, Oregon†	78.0	(±6.7)	83.7	(±5.5)	82.4	(±5.6)	83.6	(±5.9)	85.8	(±4.9)	86.1	(±5.2)	88.6	(±6.1)
Allegheny, Pennsylvania	85.8	(±5.7)	86.3	(±4.9)	86.7	(±5.2)	89.9	(±4.6)	91.7	(±3.9)*	89.1	(±3.8)	87.2	(±5.8)
Delaware, Pennsylvania	NA	NA	87.2	(±5.4)	NA	NA	NA	NA	91.9	(±4.1)*	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	83.2	(±7.8)
Montgomery, Pennsylvania†	85.4	(±5.9)	90.8	(±4.2)*	85.6	(±5.5)	NA	NA	92.5	(±3.7)*	NA	NA	93.0	(±3.8)*
Philadelphia, Pennsylvania†	78.8	(±4.3)	84.1	(±3.2)	81.9	(±3.3)	78.5	(±3.6)	83.2	(±3.4)	83.9	(±3.5)	85.7	(±3.4)
Kent, Rhode Island	84.4	(±5.9)	88.5	(±4.2)	88.8	(±4.6)	87.6	(±4.8)	89.9	(±4.8)	90.7	(±3.6)*	89.7	(±4.6)
Newport, Rhode Island	86.1	(±5.8)	86.5	(±5.3)	83.0	(±6.1)	86.4	(±5.5)	NA	NA	86.6	(±5.3)	NA	NA
Providence, Rhode Island	87.8	(±3.5)	89.3	(±2.9)	88.8	(±3.3)	90.6	(±3.1)*	92.8	(±2.7)*	85.2	(±3.6)	84.4	(±4.6)
Washington, Rhode Island	88.3	(±5.1)	88.7	(±4.5)	86.0	(±4.8)	87.8	(±5.0)	93.2	(±3.3)*	92.9	(±3.3)*	89.9	(±5.1)
Charleston, South Carolina	86.1	(±6.2)	82.3	(±6.3)	82.4	(±6.4)	80.1	(±7.8)	81.7	(±7.3)	90.1	(±4.6)*	86.6	(±6.6)
Greenville, South Carolina	84.7	(±6.4)	84.2	(±5.8)	86.3	(±5.1)	84.2	(±6.4)	89.7	(±4.9)	84.6	(±5.9)	81.8	(±7.5)
Horry, South Carolina	NA	NA	NA	NA	NA	NA	84.4	(±6.7)	NA	NA	NA	NA	83.0	(±8.6)
Richland, South Carolina	NA	NA	81.2	(±7.6)	82.0	(±6.3)	82.3	(±7.6)	NA	NA	85.9	(±5.6)	84.3	(±6.9)

See table footnotes on page 24.

TABLE 5. (Continued) Estimated vaccination coverage with ≥ 4 doses of DTaP/DTP vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Spartanburg, South Carolina	79.3	(±7.4)	79.7	(±7.2)	84.9	(±6.0)	NA	NA	NA	NA	84.0	(±6.2)	84.6	(±7.3)
York, South Carolina	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	84.3	(±6.9)
Minnehaha, South Dakota	84.2	(±5.5)	82.8	(±5.2)	84.3	(±5.0)	81.8	(±6.0)	91.0	(±3.8)*	86.9	(±4.6)	86.7	(±5.3)
Pennington, South Dakota	83.3	(±6.6)	84.0	(±5.7)	85.6	(±5.4)	83.9	(±7.1)	88.1	(±5.4)	84.6	(±5.5)	81.1	(±8.4)
Davidson, Tennessee†	81.4	(±3.5)	84.7	(±3.0)	81.4	(±3.4)	85.1	(±3.2)	88.8	(±2.7)	84.8	(±5.0)	88.7	(±5.6)
Hamilton, Tennessee	NA	NA	83.8	(±5.9)	80.8	(±6.5)	83.8	(±7.3)	NA	NA	NA	NA	NA	NA
Knox, Tennessee	85.3	(±6.0)	88.0	(±4.7)	82.8	(±5.9)	82.1	(±6.8)	88.1	(±4.7)	89.6	(±4.8)	89.6	(±5.7)
Shelby, Tennessee†	76.2	(±4.0)	77.8	(±3.8)	82.1	(±3.4)	78.9	(±3.9)	82.6	(±3.5)	80.5	(±4.0)	84.5	(±6.6)
Bexar, Texas	77.9	(±4.1)	82.0	(±3.4)	72.6	(±4.1)	80.5	(±3.3)	79.7	(±4.2)	79.3	(±4.2)	82.8	(±3.6)
Collin, Texas¶	NA	NA	NA	NA	NA	NA	96.2	(±1.4)*	NA	NA	89.4	(±4.8)	NA	NA
Dallas, Texas	76.2	(±4.3)	77.6	(±3.8)	76.9	(±3.8)	76.4	(±3.5)	78.0	(±3.7)	81.0	(±4.0)	80.1	(±3.6)
El Paso, Texas†	71.8	(±4.5)	74.6	(±3.6)	75.5	(±3.9)	75.9	(±4.1)	79.0	(±4.0)	78.0	(±3.8)	80.7	(±3.6)
Harris, Texas	74.2	(±4.5)	69.9	(±4.5)	73.8	(±4.1)	76.3	(±4.3)	74.2	(±4.3)	81.6	(±3.9)	81.5	(±5.8)
Hidalgo, Texas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76.8	(±9.5)	NA	NA
Tarrant, Texas	80.5	(±7.2)	78.4	(±7.2)	79.6	(±6.7)	81.7	(±7.1)	84.7	(±6.1)	84.5	(±5.5)	82.0	(±7.9)
Travis, Texas	NA	NA	NA	NA	80.9	(±7.0)	NA	NA	87.0	(±6.0)	85.0	(±5.7)	NA	NA
Cache, Utah	NA	NA	81.4	(±7.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Davis, Utah	76.0	(±7.4)	83.8	(±5.7)	81.8	(±6.0)	83.6	(±6.1)	81.8	(±7.1)	83.6	(±6.1)	85.4	(±6.5)
Salt Lake, Utah†	73.6	(±5.5)	81.3	(±4.7)	82.7	(±4.4)	82.8	(±5.0)	82.5	(±5.0)	85.6	(±5.1)	83.8	(±5.8)
Utah, Utah	73.9	(±6.7)	75.6	(±6.1)	82.6	(±5.3)	82.0	(±5.6)	86.0	(±4.7)	82.9	(±6.0)	81.1	(±6.6)
Weber, Utah	77.5	(±7.6)	83.8	(±5.6)	83.6	(±6.0)	80.4	(±7.6)	82.6	(±7.3)	NA	NA	NA	NA
Addison, Vermont	88.5	(±5.4)	90.4	(±4.5)*	NA	NA	86.3	(±5.9)	94.4	(±3.0)*	NA	NA	NA	NA
Bennington, Vermont	NA	NA	88.0	(±5.2)	86.9	(±5.5)	NA	NA	NA	NA	NA	NA	NA	NA
Chittenden, Vermont	89.4	(±4.3)	92.7	(±3.0)*	88.3	(±4.3)	87.9	(±4.3)	94.1	(±2.5)*	92.2	(±3.7)*	87.3	(±4.8)
Franklin, Vermont	83.0	(±7.1)	88.0	(±5.2)	86.4	(±5.3)	86.5	(±5.9)	88.4	(±4.9)	NA	NA	86.9	(±6.4)
Lamoille, Vermont	NA	NA	NA	NA	NA	NA	NA	NA	87.9	(±6.0)	NA	NA	NA	NA
Orange, Vermont	84.0	(±7.1)	86.7	(±5.1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rutland, Vermont†	81.8	(±6.4)	87.1	(±5.2)	86.2	(±5.1)	87.1	(±6.0)	90.0	(±4.4)	NA	NA	NA	NA
Washington, Vermont	86.3	(±6.1)	87.2	(±4.9)	86.2	(±5.9)	90.2	(±4.3)*	88.9	(±5.1)	88.8	(±4.5)	81.8	(±7.6)
Windham, Vermont	NA	NA	88.2	(±5.2)	87.1	(±5.3)	84.4	(±6.4)	NA	NA	NA	NA	83.5	(±7.1)
Windsor, Vermont	83.4	(±6.6)	86.8	(±5.3)	85.8	(±5.4)	86.9	(±5.4)	89.5	(±5.0)	87.5	(±5.4)	NA	NA
Fairfax, Virginia	84.1	(±5.8)	85.3	(±5.1)	84.5	(±5.3)	86.7	(±5.6)	89.0	(±4.6)	90.7	(±3.5)*	90.7	(±4.2)*
Loudoun, Virginia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	87.5	(±6.5)
Virginia Beach, Virginia	NA	NA	79.0	(±7.3)	81.5	(±6.6)	NA	NA	NA	NA	NA	NA	84.2	(±7.5)
Clark, Washington	82.4	(±7.3)	84.3	(±5.9)	80.2	(±6.3)	81.7	(±6.9)	84.5	(±6.4)	84.4	(±6.3)	NA	NA
King, Washington	85.5	(±3.0)	86.7	(±2.8)	82.8	(±3.0)	79.3	(±3.4)	88.5	(±2.7)	86.8	(±3.6)	84.4	(±5.2)
Kitsap, Washington	NA	NA	NA	NA	84.8	(±5.8)	NA	NA	78.6	(±8.0)	NA	NA	81.0	(±7.5)
Pierce, Washington	80.6	(±6.7)	83.9	(±5.6)	81.8	(±5.3)	79.5	(±6.8)	82.6	(±6.6)	85.5	(±5.6)	81.1	(±7.5)
Snohomish, Washington	82.4	(±6.4)	83.9	(±5.5)	83.9	(±5.3)	83.2	(±5.7)	86.2	(±5.3)	83.5	(±5.8)	83.0	(±7.8)
Spokane, Washington	81.6	(±7.0)	85.8	(±5.3)	84.4	(±5.4)	76.1	(±7.7)	86.2	(±5.6)	NA	NA	81.4	(±7.6)
Thurston, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	83.5	(±6.7)
Whatcom, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	86.6	(±6.2)
Yakima, Washington	78.5	(±8.1)	76.2	(±8.1)	NA	NA	78.0	(±8.9)	NA	NA	NA	NA	NA	NA
Kanawha, West Virginia	78.2	(±7.0)	89.4	(±4.5)	85.6	(±5.3)	NA	NA	86.2	(±6.0)	82.7	(±6.0)	84.2	(±7.0)
Brown, Wisconsin	NA	NA	NA	NA	NA	NA	85.3	(±6.4)	NA	NA	NA	NA	NA	NA
Dane, Wisconsin	86.4	(±5.5)	89.6	(±4.7)	84.8	(±5.6)	85.5	(±6.0)	87.1	(±5.8)	91.4	(±3.9)*	87.5	(±6.5)
Milwaukee, Wisconsin†	74.7	(±4.1)	79.5	(±3.4)	77.7	(±3.8)	77.2	(±4.3)	85.2	(±3.4)	84.9	(±4.0)	83.0	(±6.2)
Outagamie, Wisconsin	NA	NA	85.1	(±6.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Waukesha, Wisconsin	85.0	(±6.0)	87.4	(±5.1)	88.4	(±4.7)	89.3	(±5.1)	90.9	(±4.1)*	91.9	(±3.5)*	NA	NA
Albany, Wyoming	NA	NA	82.5	(±6.1)	85.3	(±5.9)	NA	NA	90.2	(±4.9)*	NA	NA	NA	NA
Campbell, Wyoming	NA	NA	83.4	(±6.3)	83.6	(±5.9)	85.6	(±5.8)	86.0	(±5.2)	87.0	(±4.9)	87.4	(±6.0)
Fremont, Wyoming†	NA	NA	78.5	(±8.1)	80.3	(±6.7)	80.3	(±7.9)	90.0	(±6.4)	NA	NA	NA	NA
Laramie, Wyoming	81.0	(±6.3)	83.4	(±5.4)	85.3	(±5.0)	79.9	(±6.9)	86.6	(±5.1)	84.6	(±5.5)	72.3	(±8.2)
Natrona, Wyoming	77.3	(±7.3)	84.5	(±5.1)	85.5	(±4.9)	82.4	(±6.1)	86.1	(±5.3)	83.0	(±5.9)	81.9	(±7.0)
Sweetwater, Wyoming	79.8	(±7.1)	75.7	(±7.1)	84.1	(±5.7)	83.1	(±6.8)	NA	NA	83.0	(±6.1)	76.9	(±8.1)
Uinta, Wyoming	NA	NA	NA	NA	84.5	(±6.0)	NA	NA	NA	NA	NA	NA	NA	NA
United States†	80.0	(±0.7)	82.5	(±0.6)	82.1	(±0.6)	81.7	(±0.6)	85.6	(±0.6)	85.4	(±0.6)	84.6	(±0.7)
Sample size, no.	37,282		44,855		45,623		45,052		43,308		38,607		35,447	
All selected counties	80.2 (±0.9)		82.2 (±0.8)		81.8 (±0.8)		82.2 (±0.8)		85.6 (±0.7)		85.7 (±0.7)		85.1 (±0.8)	
Sample size, no.	23,014		29,227		30,362		29,851		28,845		23,485		20,552	
Range, %	71.7–89.4		68.3–92.7		72.6–91.3		71.7–96.2		74.2–97		66.2–93.7		72.2–95.6	

Abbreviations: DTaP = diphtheria and tetanus toxoids and acellular pertussis; DTP = diphtheria and tetanus toxoids and pertussis; CI = confidence interval; NA = not available.

* Estimate exceeds the *Healthy People 2010* objective of 90% vaccination coverage.

† Estimates increased significantly between the first and last biennial periods ($p < 0.05$).

‡ Estimate has 95% CI half-width that exceeds 10% and might be imprecise.

¶ Estimates decreased significantly between the first and last biennial periods ($p < 0.05$).

TABLE 6. Estimated vaccination coverage with ≥ 3 doses of polio vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Jefferson, Alabama	90.3	(±2.7)*	92.8	(±2.1)*	90.8	(±2.5)*	89.9	(±2.7)	90.6	(±2.8)*	93.8	(±3.3)*	94.3	(±3.2)*
Madison, Alabama	NA	NA	91.8	(±4.4)*	89.7	(±4.6)	NA	NA	95.0	(±2.0)*	93.0	(±4.0)*	95.3	(±2.6)*
Mobile, Alabama	85.3	(±6.0)	91.4	(±4.4)*	87.6	(±5.2)	88.2	(±5.3)	91.5	(±3.9)*	93.0	(±3.8)*	94.3	(±3.4)*
Montgomery, Alabama	NA	NA	90.1	(±5.1)*	88.7	(±5.4)	NA	NA	NA	NA	NA	NA	NA	NA
Shelby, Alabama	NA	NA	NA	NA	90.3	(±4.5)*	91.0	(±4.7)*	92.9	(±3.7)*	NA	NA	94.2	(±3.8)*
Anchorage, Alaska	NA	NA	NA	NA	87.8	(±3.6)	85.4	(±4.4)	91.6	(±2.9)*	91.2	(±3.8)*	92.1	(±3.7)*
Fairbanks North Star, Alaska	NA	NA	NA	NA	89.3	(±4.3)	82.8	(±6.2)	87.0	(±4.6)	90.2	(±4.7)*	92.2	(±4.3)*
Kenai Peninsula, Alaska	NA	NA	NA	NA	90.5	(±4.4)*	NA	NA	NA	NA	NA	NA	NA	NA
Matanuska-Susitna, Alaska	NA	NA	NA	NA	90.1	(±4.4)*	86.9	(±6.2)	90.3	(±4.5)*	91.3	(±4.4)*	92.2	(±4.1)*
Cochise, Arizona	NA	NA	89.8	(±5.2)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Coconino, Arizona†	NA	NA	86.7	(±5.9)	NA	NA	NA	NA	89.7	(±5.3)	NA	NA	NA	NA
Maricopa, Arizona†	88.0	(±3.2)	87.5	(±2.8)	85.3	(±3.2)	87.3	(±3.0)	90.7	(±2.5)*	89.1	(±2.8)	90.6	(±3.5)*
Mohave, Arizona	NA	NA	NA	NA	86.7	(±5.5)	86.4	(±6.2)	NA	NA	NA	NA	NA	NA
Pima, Arizona	89.9	(±3.9)	89.1	(±3.8)	90.4	(±3.3)*	82.1	(±4.7)	88.5	(±3.9)	90.5	(±4.1)*	93.4	(±3.9)*
Pinal, Arizona	90.4	(±4.7)*	88.7	(±5.5)	88.1	(±5.6)	89.3	(±5.1)	88.6	(±5.1)	90.4	(±5.4)*	NA	NA
Yavapai, Arizona	NA	NA	NA	NA	NA	NA	88.1	(±5.6)	88.1	(±5.1)	NA	NA	NA	NA
Yuma, Arizona	88.1	(±5.4)	90.6	(±4.9)*	85.1	(±5.9)	86.7	(±5.9)	89.6	(±5.0)	95.6	(±1.8)*	NA	NA
Benton, Arkansas	NA	NA	87.0	(±5.6)	NA	NA	89.7	(±5.1)	92.7	(±3.7)*	94.3	(±3.5)*	95.0	(±2.9)*
Pulaski, Arkansas	88.3	(±5.5)	89.5	(±4.7)	85.4	(±5.4)	89.2	(±4.7)	93.4	(±3.3)*	90.4	(±5.2)*	94.0	(±3.6)*
Washington, Arkansas	89.3	(±5.2)	90.6	(±4.6)*	NA	NA	91.1	(±4.6)*	NA	NA	NA	NA	92.6	(±4.1)*
Alameda, California	86.6	(±5.9)	NA	NA	88.2	(±5.3)	90.1	(±5.7)*	91.5	(±4.1)*	91.0	(±3.7)*	90.1	(±5.0)*
Los Angeles, California†	89.0	(±3.2)	89.5	(±2.7)	86.9	(±3.1)	87.2	(±3.5)	92.1	(±2.2)*	92.3	(±2.4)*	94.4	(±1.9)*
Orange, California	92.8	(±3.6)*	91.1	(±4.0)*	86.6	(±5.4)	89.5	(±4.7)	90.8	(±4.0)*	91.1	(±4.8)*	93.5	(±3.7)*
Riverside, California	NA	NA	NA	NA	86.7	(±5.6)	86.2	(±6.2)	88.9	(±4.8)	NA	NA	92.4	(±4.5)*
San Bernardino, California	NA	NA	86.8	(±5.5)	88.2	(±5.1)	86.2	(±6.5)	89.6	(±4.6)	90.6	(±3.1)*	94.2	(±2.0)*
San Diego, California†	89.3	(±2.9)	88.0	(±2.6)	88.9	(±2.6)	90.0	(±2.5)	91.1	(±2.4)*	93.3	(±2.9)*	93.0	(±4.0)*
San Mateo, California	NA	NA	91.4	(±4.2)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Santa Clara, California	91.5	(±2.7)*	90.2	(±2.5)*	90.5	(±2.3)*	92.0	(±2.1)*	92.8	(±2.4)*	93.7	(±2.8)*	NA	NA
Adams, Colorado	89.3	(±5.1)	89.5	(±4.6)	86.6	(±5.2)	86.9	(±5.9)	91.1	(±4.3)*	NA	NA	NA	NA
Arapahoe, Colorado	93.0	(±3.4)*	92.3	(±4.0)*	88.9	(±4.9)	91.2	(±4.3)*	94.1	(±3.1)*	NA	NA	95.1	(±3.3)*
Boulder, Colorado	NA	NA	92.7	(±3.9)*	90.6	(±4.3)*	91.1	(±4.4)*	90.5	(±4.1)*	91.9	(±4.8)*	93.3	(±4.1)*
Denver, Colorado	90.9	(±4.2)*	89.4	(±4.5)	88.9	(±4.8)	90.8	(±4.5)*	92.2	(±3.6)*	NA	NA	NA	NA
Douglas, Colorado	NA	NA	NA	NA	91.1	(±4.3)*	91.8	(±4.6)*	93.8	(±3.1)*	NA	NA	NA	NA
El Paso, Colorado	88.1	(±5.2)	90.1	(±4.6)*	86.2	(±5.1)	88.0	(±5.1)	86.5	(±5.0)	91.4	(±4.6)*	92.0	(±4.4)*
Jefferson, Colorado	91.6	(±4.1)*	92.2	(±3.8)*	89.5	(±4.7)	91.9	(±4.0)*	92.3	(±3.6)*	95.0	(±2.7)*	93.5	(±3.6)*
Larimer, Colorado	NA	NA	NA	NA	89.3	(±4.7)	89.6	(±4.9)	NA	NA	92.7	(±4.4)*	NA	NA
Weld, Colorado	NA	NA	NA	NA	89.2	(±5.0)	90.7	(±5.0)*	88.8	(±4.9)	NA	NA	91.0	(±5.0)*
Fairfield, Connecticut	90.6	(±4.3)*	91.7	(±3.1)*	92.5	(±3.4)*	95.1	(±2.5)*	95.6	(±1.8)*	92.2	(±3.6)*	95.0	(±2.5)*
Hartford, Connecticut	91.9	(±3.9)*	92.4	(±3.3)*	89.4	(±4.0)	92.2	(±3.6)*	94.5	(±2.5)*	95.0	(±2.8)*	95.5	(±2.7)*
New Haven, Connecticut	89.1	(±4.6)	93.4	(±3.0)*	90.9	(±3.8)*	89.5	(±4.3)	91.6	(±4.0)*	93.3	(±3.7)*	94.2	(±3.3)*
New London, Connecticut	90.6	(±4.9)*	90.7	(±4.4)*	89.1	(±4.7)	NA	NA	93.6	(±3.2)*	93.9	(±4.0)*	94.5	(±3.5)*
Kent, Delaware	90.0	(±4.6)	92.8	(±3.2)*	91.5	(±3.5)*	90.1	(±4.3)*	92.1	(±3.7)*	94.0	(±3.6)*	94.4	(±3.2)*
New Castle, Delaware	88.9	(±3.5)	91.8	(±2.6)*	89.9	(±2.9)	90.2	(±2.9)*	92.0	(±2.7)*	92.1	(±3.0)*	94.4	(±2.6)*
Sussex, Delaware	89.0	(±4.7)	91.5	(±3.9)*	90.5	(±3.8)*	93.6	(±2.9)*	91.2	(±3.4)*	95.2	(±2.5)*	92.3	(±3.3)*
District of Columbia	89.8	(±3.3)	87.6	(±2.9)	86.4	(±3.3)	90.8	(±2.5)*	93.0	(±2.4)*	92.4	(±2.4)*	91.4	(±2.5)*
Broward, Florida	90.5	(±4.6)*	91.1	(±4.2)*	90.6	(±4.4)*	90.1	(±4.9)*	89.5	(±4.3)	87.4	(±6.0)	92.9	(±4.1)*
Duval, Florida†	87.3	(±3.3)	90.6	(±2.5)*	90.3	(±2.6)*	89.9	(±3.0)	90.1	(±2.8)*	92.5	(±2.3)*	NA	NA
Hillsborough, Florida	87.3	(±5.8)	88.8	(±5.1)	87.0	(±5.1)	91.0	(±4.7)*	90.8	(±4.3)*	88.9	(±5.6)	NA	NA
Dade, Florida	NA	NA	NA	NA	90.5	(±2.8)*	89.7	(±2.6)	91.5	(±2.6)*	93.5	(±3.1)*	93.4	(±2.4)*
Orange, Florida†	NA	NA	NA	NA	88.8	(±5.0)	NA	NA	90.6	(±4.5)*	NA	NA	94.3	(±3.0)*
Palm Beach, Florida	NA	NA	89.9	(±4.6)	88.9	(±4.7)	92.6	(±3.8)*	93.5	(±3.1)*	89.8	(±5.5)	93.1	(±4.3)*
Pinellas, Florida	NA	NA	88.4	(±5.3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobb, Georgia	90.6	(±5.0)*	91.8	(±4.1)*	90.5	(±4.4)*	90.8	(±4.8)*	93.4	(±3.2)*	94.4	(±3.4)*	94.1	(±3.1)*
DeKalb, Georgia†	89.2	(±5.2)	88.7	(±4.0)	91.1	(±3.6)*	88.9	(±3.7)	91.3	(±2.7)*	87.1	(±4.7)	92.6	(±4.3)*
Fulton, Georgia	88.6	(±4.6)	90.2	(±3.4)*	89.7	(±3.3)	91.2	(±3.1)*	91.7	(±2.6)*	93.4	(±3.0)*	92.5	(±4.2)*
Gwinnett, Georgia	90.7	(±4.8)*	90.0	(±4.3)	90.7	(±4.4)*	89.4	(±5.1)	91.7	(±3.8)*	94.7	(±3.1)*	93.3	(±3.8)*
Hawaii, Hawaii	91.9	(±4.3)*	91.6	(±4.0)*	87.8	(±5.1)	86.6	(±6.7)	90.4	(±4.1)*	90.6	(±4.5)*	92.2	(±4.1)*
Honolulu, Hawaii	91.5	(±2.9)*	89.2	(±3.1)	88.9	(±3.1)	86.6	(±4.0)	88.1	(±2.9)	90.6	(±3.2)*	92.6	(±2.8)*
Maui, Hawaii	86.1	(±5.7)	93.7	(±3.0)*	87.0	(±5.4)	85.6	(±6.4)	89.8	(±4.3)	92.6	(±4.4)*	93.0	(±4.5)*
Ada, Idaho	87.4	(±4.6)	91.4	(±3.3)*	88.6	(±4.0)	85.6	(±5.1)	92.3	(±3.2)*	93.8	(±3.1)*	92.1	(±3.7)*
Bannock, Idaho	NA	NA	90.2	(±4.9)*	90.9	(±4.2)*	87.7	(±5.7)	NA	NA	NA	NA	NA	NA
Bonneville, Idaho	87.1	(±5.3)	91.2	(±4.1)*	89.5	(±4.4)	88.5	(±5.4)	92.3	(±3.6)*	92.4	(±4.1)*	95.1	(±3.3)*
Canyon, Idaho	NA	NA	88.4	(±4.7)	86.6	(±5.0)	86.4	(±5.7)	89.7	(±4.6)	88.9	(±5.0)	88.4	(±5.4)
Kootenai, Idaho	91.2	(±4.7)*	91.5	(±4.5)*	88.5	(±4.7)	83.8	(±7.0)	NA	NA	NA	NA	NA	NA
Twin Falls, Idaho	NA	NA	89.2	(±5.1)	NA	NA	91.7	(±4.4)*	NA	NA	NA	NA	NA	NA
Cook, Illinois	88.4	(±3.1)	87.0	(±3.3)	86.5	(±3.0)	88.8	(±2.8)	90.7	(±2.9)*	89.3	(±3.7)	90.0	(±2.9)
DuPage, Illinois	91.2	(±4.8)*	92.0	(±3.8)*	89.0	(±4.6)	92.1	(±3.9)*	94.4	(±2.8)*	NA	NA	93.1	(±3.5)*
Lake, Illinois†	86.7	(±5.9)	92.1	(±4.0)*	88.3	(±5.1)	90.1	(±4.5)*	90.3	(±4.4)*	NA	NA	92.7	(±4.4)*

See table footnotes on page 28.

TABLE 6. (Continued) Estimated vaccination coverage with ≥ 3 doses of polio vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Will, Illinois	NA	NA	NA	NA	90.6	(± 4.7)*	87.7	(± 5.5)	92.8	(± 3.5)*	93.9	(± 3.7)*	94.3	(± 3.5)*
Allen, Indiana	NA	NA	89.0	(± 4.7)	91.0	(± 4.4)*	88.0	(± 5.5)	92.1	(± 3.7)*	NA	NA	94.3	(± 3.6)*
Hamilton, Indiana	89.3	(± 5.5)	92.2	(± 4.1)*	94.6	(± 2.1)*	90.6	(± 4.9)*	94.0	(± 3.1)*	NA	NA	95.5	(± 2.8)*
Lake, Indiana	85.4	(± 6.5)	86.3	(± 5.8)	87.5	(± 5.1)	89.0	(± 5.4)	92.3	(± 3.7)*	NA	NA	90.0	(± 5.0)
Marion, Indiana	90.0	(± 2.9)	90.4	(± 2.5)*	88.7	(± 3.0)	87.7	(± 3.2)	91.6	(± 2.4)*	93.6	(± 3.1)*	93.9	(± 3.0)*
Linn, Iowa	NA	NA	91.8	(± 4.4)*	NA	NA	91.1	(± 4.5)*	92.7	(± 3.9)*	NA	NA	94.2	(± 3.4)*
Polk, Iowa	90.6	(± 4.8)*	88.6	(± 4.4)	92.1	(± 3.8)*	90.1	(± 4.3)*	93.3	(± 3.1)*	90.9	(± 4.2)*	96.0	(± 2.0)*
Scott, Iowa	NA	NA	NA	NA	89.1	(± 4.9)	89.9	(± 5.2)	91.7	(± 3.9)*	NA	NA	NA	NA
Johnson, Kansas	90.0	(± 4.5)	92.5	(± 3.9)*	91.5	(± 3.4)*	90.7	(± 4.4)*	93.2	(± 3.0)*	93.4	(± 2.6)*	95.8	(± 2.3)*
Sedgwick, Kansas	85.6	(± 5.5)	92.4	(± 3.4)*	87.9	(± 4.5)	87.5	(± 5.4)	91.9	(± 3.7)*	92.9	(± 3.6)*	94.4	(± 2.9)*
Shawnee, Kansas	NA	NA	NA	NA	88.4	(± 5.1)	NA	NA	NA	NA	88.2	(± 5.6)	94.2	(± 3.8)*
Fayette, Kentucky	NA	NA	91.5	(± 4.6)*	90.8	(± 4.4)*	NA	NA	93.0	(± 3.4)*	NA	NA	NA	NA
Jefferson, Kentucky†	88.0	(± 5.1)	89.3	(± 4.4)	91.0	(± 3.9)*	90.1	(± 4.8)*	92.8	(± 3.4)*	93.8	(± 3.4)*	95.2	(± 2.8)*
Caddo, Louisiana	NA	NA	90.2	(± 5.1)*	86.9	(± 5.4)	NA	NA	NA	NA	94.3	(± 3.5)*	94.6	(± 3.4)*
East Baton Rouge, Louisiana	88.2	(± 5.9)	89.1	(± 5.2)	88.3	(± 5.1)	87.5	(± 5.6)	90.8	(± 4.2)*	94.8	(± 2.9)*	94.4	(± 3.3)*
Jefferson, Louisiana	89.8	(± 4.8)	91.3	(± 4.3)*	89.2	(± 4.6)	90.0	(± 5.2)	91.4	(± 3.7)*	93.5	(± 3.6)*	94.3	(± 3.1)*
Lafayette, Louisiana	NA	NA	89.1	(± 5.1)	NA	NA	NA	NA	91.6	(± 3.9)*	NA	NA	94.6	(± 3.2)*
Orleans, Louisiana	87.8	(± 3.6)	86.6	(± 3.2)	84.8	(± 3.6)	82.5	(± 3.8)	88.2	(± 3.0)	90.7	(± 4.1)*	91.6	(± 4.7)*
St. Tammany, Louisiana	NA	NA	NA	NA	NA	NA	88.7	(± 5.3)	92.5	(± 3.7)*	93.7	(± 3.4)*	NA	NA
Androscoggin, Maine	91.6	(± 4.6)*	91.4	(± 4.8)*	90.4	(± 4.4)*	94.0	(± 2.8)*	92.2	(± 4.1)*	93.8	(± 4.0)*	94.8	(± 2.9)*
Aroostook, Maine	NA	NA	92.5	(± 3.9)*	93.0	(± 3.3)*	NA	NA	91.9	(± 4.0)*	NA	NA	NA	NA
Cumberland, Maine	92.2	(± 3.5)*	93.1	(± 3.1)*	89.7	(± 3.7)	91.3	(± 3.7)*	90.3	(± 3.6)*	91.6	(± 3.8)*	92.4	(± 3.4)*
Kennebec, Maine	91.5	(± 4.5)*	92.7	(± 3.6)*	91.8	(± 4.1)*	92.5	(± 4.2)*	94.3	(± 2.5)*	NA	NA	95.6	(± 2.2)*
Penobscot, Maine	91.5	(± 4.3)*	93.6	(± 3.1)*	91.0	(± 4.0)*	92.8	(± 4.3)*	92.5	(± 3.6)*	94.0	(± 3.6)*	93.8	(± 3.6)*
York, Maine	91.7	(± 4.0)*	92.5	(± 3.6)*	92.5	(± 3.6)*	89.9	(± 4.3)	93.0	(± 3.4)*	91.0	(± 4.4)*	94.4	(± 3.3)*
Anne Arundel, Maryland	88.5	(± 5.3)	92.1	(± 3.9)*	91.0	(± 4.3)*	92.5	(± 3.8)*	93.5	(± 3.1)*	93.0	(± 4.0)*	94.6	(± 3.2)*
Baltimore, Maryland	89.4	(± 4.9)	92.8	(± 3.8)*	89.4	(± 4.3)	91.7	(± 4.3)*	90.6	(± 3.9)*	92.6	(± 4.0)*	95.3	(± 3.0)*
Frederick, Maryland	NA	NA	NA	NA	90.2	(± 4.4)*	92.1	(± 4.4)*	93.8	(± 3.0)*	NA	NA	NA	NA
Harford, Maryland	NA	NA	NA	NA	NA	NA	NA	NA	92.9	(± 3.7)*	NA	NA	NA	NA
Howard, Maryland	NA	NA	92.7	(± 4.0)*	90.3	(± 4.7)*	91.3	(± 4.9)*	94.0	(± 3.1)*	NA	NA	95.4	(± 2.9)*
Montgomery, Maryland†	91.1	(± 4.6)*	93.0	(± 3.3)*	89.6	(± 4.1)	92.1	(± 3.6)*	93.3	(± 3.0)*	93.5	(± 3.3)*	95.5	(± 2.6)*
Prince George's, Maryland	87.8	(± 5.4)	88.3	(± 4.4)	89.6	(± 4.4)	83.9	(± 6.5)	91.5	(± 3.9)*	91.8	(± 4.7)*	93.5	(± 3.7)*
City of Baltimore, Maryland†	NA	NA	NA	NA	86.8	(± 3.2)	88.9	(± 2.8)	91.3	(± 2.7)*	92.2	(± 2.6)*	92.9	(± 3.6)*
Bristol, Massachusetts	91.7	(± 4.5)*	91.6	(± 4.1)*	91.7	(± 4.0)*	92.3	(± 4.2)*	92.6	(± 3.5)*	94.9	(± 2.9)*	NA	NA
Essex, Massachusetts	91.5	(± 4.2)*	90.8	(± 4.1)*	91.0	(± 4.2)*	92.5	(± 3.8)*	91.6	(± 4.3)*	92.8	(± 4.2)*	91.6	(± 4.9)*
Hampden, Massachusetts	91.6	(± 4.3)*	91.5	(± 4.5)*	90.7	(± 4.5)*	90.5	(± 5.0)*	92.6	(± 3.7)*	NA	NA	NA	NA
Middlesex, Massachusetts	91.4	(± 3.8)*	91.8	(± 3.3)*	91.4	(± 3.6)*	94.4	(± 2.6)*	94.1	(± 2.6)*	95.4	(± 2.3)*	95.1	(± 2.8)*
Norfolk, Massachusetts	91.3	(± 4.4)*	93.4	(± 3.4)*	87.3	(± 5.1)	94.6	(± 2.8)*	94.6	(± 2.8)*	95.0	(± 2.8)*	95.0	(± 3.1)*
Plymouth, Massachusetts	90.8	(± 4.6)*	93.0	(± 3.7)*	91.6	(± 4.1)*	90.9	(± 4.5)*	93.2	(± 3.6)*	NA	NA	95.1	(± 3.3)*
Suffolk, Massachusetts	89.3	(± 4.1)	93.4	(± 2.6)*	91.9	(± 2.3)*	92.9	(± 2.5)*	94.6	(± 2.0)*	91.7	(± 4.3)*	96.5	(± 1.0)*
Worcester, Massachusetts	91.7	(± 4.1)*	92.2	(± 3.8)*	91.0	(± 4.5)*	92.6	(± 3.6)*	92.1	(± 3.5)*	94.3	(± 3.4)*	93.9	(± 3.3)*
Kent, Michigan	90.4	(± 5.2)*	90.4	(± 4.7)*	90.1	(± 4.8)*	90.8	(± 4.7)*	92.6	(± 3.9)*	NA	NA	93.0	(± 3.7)*
Macomb, Michigan	90.8	(± 4.7)*	93.5	(± 3.3)*	90.7	(± 4.3)*	90.6	(± 4.5)*	92.5	(± 3.5)*	92.8	(± 3.9)*	NA	NA
Oakland, Michigan	87.5	(± 5.2)	91.7	(± 3.8)*	90.7	(± 4.1)*	92.2	(± 3.8)*	92.0	(± 3.5)*	92.6	(± 4.0)*	94.2	(± 3.3)*
Wayne, Michigan	82.2	(± 4.1)	83.6	(± 3.8)	86.7	(± 3.0)	81.8	(± 5.0)	89.8	(± 3.7)	89.7	(± 4.0)	92.4	(± 3.6)*
Anoka, Minnesota	89.1	(± 5.2)	92.7	(± 4.0)*	91.4	(± 4.3)*	91.5	(± 4.6)*	NA	NA	NA	NA	94.4	(± 3.3)*
Dakota, Minnesota	91.9	(± 4.3)*	91.8	(± 4.1)*	90.9	(± 4.5)*	91.2	(± 4.6)*	93.3	(± 3.4)*	94.4	(± 3.4)*	94.8	(± 3.2)*
Hennepin, Minnesota	91.9	(± 3.7)*	91.7	(± 3.4)*	92.2	(± 3.4)*	93.0	(± 3.5)*	93.3	(± 3.1)*	94.9	(± 2.9)*	93.6	(± 3.1)*
Ramsey, Minnesota	90.8	(± 4.8)*	91.6	(± 4.2)*	90.1	(± 4.5)*	90.8	(± 4.6)*	93.8	(± 3.1)*	93.8	(± 3.6)*	96.0	(± 1.7)*
Washington, Minnesota	NA	NA	92.4	(± 4.1)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Harrison, Mississippi	NA	NA	89.8	(± 4.8)	NA	NA	NA	NA	NA	NA	94.1	(± 3.6)*	NA	NA
Hinds, Mississippi	85.8	(± 6.5)	88.6	(± 5.1)	87.8	(± 5.2)	85.5	(± 6.7)	NA	NA	94.8	(± 2.5)*	90.2	(± 5.0)*
Greene, Missouri	NA	NA	NA	NA	NA	NA	90.1	(± 5.0)*	NA	NA	NA	NA	NA	NA
Jackson, Missouri	87.9	(± 5.4)	91.4	(± 4.5)*	88.7	(± 4.6)	89.7	(± 5.0)	92.3	(± 3.5)*	94.7	(± 3.1)*	93.0	(± 3.6)*
Jefferson, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	94.6	(± 3.3)*
St. Charles, Missouri	NA	NA	92.2	(± 4.0)*	NA	NA	NA	NA	NA	NA	NA	NA	94.9	(± 3.0)*
St. Louis, Missouri	89.5	(± 4.5)	93.2	(± 3.4)*	89.9	(± 4.1)	91.9	(± 4.0)*	94.2	(± 2.8)*	94.7	(± 2.4)*	95.5	(± 2.7)*
City of St. Louis, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	92.4	(± 4.6)*
Cascade, Montana	87.1	(± 5.6)	92.6	(± 3.6)*	91.6	(± 4.1)*	91.4	(± 4.6)*	92.8	(± 3.6)*	93.7	(± 3.7)*	94.2	(± 3.5)*
Flathead, Montana	86.9	(± 5.8)	88.9	(± 5.2)	89.6	(± 4.5)	78.1	(± 7.2)	86.8	(± 5.3)	88.1	(± 5.9)	92.3	(± 4.2)*
Gallatin, Montana	90.3	(± 4.6)*	91.1	(± 4.4)*	88.5	(± 4.8)	90.6	(± 4.6)*	89.8	(± 4.5)	91.9	(± 4.6)*	90.0	(± 5.1)
Lewis and Clark, Montana	NA	NA	91.8	(± 4.2)*	90.7	(± 4.4)*	91.0	(± 4.5)*	NA	NA	NA	NA	93.7	(± 3.9)*
Missoula, Montana	89.4	(± 4.7)	89.5	(± 4.6)	90.7	(± 4.5)*	89.8	(± 4.6)	87.9	(± 4.8)	90.7	(± 4.2)*	88.5	(± 5.4)
Yellowstone, Montana	86.4	(± 5.2)	91.4	(± 3.9)*	89.0	(± 4.5)	89.4	(± 4.6)	89.8	(± 3.9)	93.5	(± 3.3)*	91.0	(± 4.5)*
Douglas, Nebraska†	90.5	(± 4.0)*	90.9	(± 3.6)*	91.6	(± 3.4)*	90.6	(± 3.7)*	92.7	(± 2.9)*	94.7	(± 2.7)*	95.2	(± 2.3)*
Lancaster, Nebraska	91.2	(± 4.3)*	92.1	(± 3.7)*	90.7	(± 3.8)*	90.9	(± 4.1)*	92.1	(± 3.6)*	94.5	(± 3.3)*	93.5	(± 3.5)*
Sarpy, Nebraska	90.5	(± 5.3)*	91.5	(± 4.1)*	89.6	(± 4.6)	89.6	(± 5.0)	92.5	(± 3.9)*	NA	NA	NA	NA
Clark, Nevada	86.8	(± 3.7)	88.3	(± 3.2)	85.8	(± 3.2)	85.3	(± 3.8)	85.5	(± 3.3)	85.4	(± 3.6)	88.0	(± 3.6)

See table footnotes on page 28.

TABLE 6. (Continued) Estimated vaccination coverage with ≥ 3 doses of polio vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Washoe, Nevada	89.2	(±4.7)	91.9	(±3.7)*	90.1	(±3.8)*	91.9	(±4.1)*	92.4	(±3.7)*	94.6	(±2.7)*	93.0	(±3.6)*
Grafton, New Hampshire†	NA	NA	90.4	(±4.6)*	90.5	(±4.4)*	94.2	(±3.3)*	93.1	(±3.4)*	NA	NA	95.8	(±2.3)*
Hillsborough, New Hampshire	92.4	(±3.1)*	93.1	(±2.8)*	92.3	(±3.3)*	93.0	(±3.0)*	93.9	(±2.6)*	95.3	(±2.3)*	94.9	(±2.6)*
Merrimack, New Hampshire	90.7	(±4.5)*	93.0	(±3.6)*	91.5	(±4.2)*	93.4	(±3.5)*	92.1	(±3.5)*	92.6	(±4.2)*	95.3	(±3.0)*
Rockingham, New Hampshire	92.7	(±3.5)*	93.7	(±2.9)*	91.4	(±3.3)*	93.3	(±3.3)*	93.6	(±3.0)*	93.9	(±3.2)*	95.9	(±2.2)*
Strafford, New Hampshire	90.4	(±4.6)*	91.5	(±4.2)*	91.5	(±3.8)*	93.2	(±3.7)*	92.6	(±3.7)*	93.8	(±3.7)*	94.2	(±3.8)*
Bergen, New Jersey†	88.7	(±5.3)	94.0	(±3.0)*	89.6	(±4.4)	93.0	(±4.0)*	92.8	(±3.5)*	91.2	(±4.9)*	93.0	(±4.3)*
Burlington, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	94.9	(±3.2)*
Camden, New Jersey	NA	NA	91.6	(±4.6)*	88.3	(±5.1)	90.4	(±4.9)*	NA	NA	91.7	(±4.8)*	92.9	(±4.6)*
Essex, New Jersey	89.7	(±3.8)	88.1	(±4.1)	88.4	(±3.8)	81.5	(±6.4)	89.6	(±4.2)	92.6	(±3.3)*	91.3	(±4.6)*
Hudson, New Jersey	87.3	(±6.2)	90.8	(±4.9)*	83.1	(±6.8)	85.9	(±6.4)	88.2	(±5.0)	NA	NA	90.6	(±5.0)*
Middlesex, New Jersey	NA	NA	91.7	(±4.2)*	87.9	(±5.4)	90.3	(±4.5)*	91.7	(±3.9)*	89.9	(±5.4)	92.2	(±3.2)*
Monmouth, New Jersey	NA	NA	90.0	(±4.7)	90.5	(±4.3)*	87.8	(±5.5)	NA	NA	91.8	(±4.6)*	93.1	(±4.1)*
Morris, New Jersey	89.6	(±5.1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ocean, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	90.2	(±4.4)*	88.3	(±5.7)	90.9	(±4.8)*
Passaic, New Jersey	NA	NA	NA	NA	85.0	(±5.9)	88.0	(±5.7)	90.3	(±4.4)*	NA	NA	NA	NA
Union, New Jersey	NA	NA	92.1	(±4.2)*	87.9	(±5.2)	92.1	(±4.2)*	91.7	(±3.7)*	NA	NA	91.5	(±4.6)*
Bernalillo, New Mexico†	90.1	(±4.1)*	87.4	(±4.5)	85.0	(±5.2)	84.5	(±4.7)	90.6	(±3.6)*	88.3	(±4.4)	92.7	(±3.7)*
Dona Ana, New Mexico	89.8	(±4.6)	85.0	(±6.4)	85.8	(±5.6)	85.6	(±6.5)	89.1	(±4.9)	NA	NA	91.7	(±4.8)*
Sandoval, New Mexico	NA	NA	NA	NA	NA	NA	NA	NA	89.8	(±4.9)	NA	NA	88.4	(±6.3)
San Juan, New Mexico	NA	NA	NA	NA	88.7	(±5.2)	86.4	(±6.4)	89.9	(±4.7)	92.3	(±4.6)*	90.7	(±5.0)*
Santa Fe, New Mexico	91.0	(±4.8)*	NA	NA	87.1	(±5.5)	NA	NA	88.1	(±5.0)	NA	NA	NA	NA
Bronx, New York	87.8	(±5.3)	89.7	(±4.9)	85.9	(±5.8)	84.7	(±6.2)	88.3	(±4.7)	90.4	(±4.9)*	94.3	(±3.2)*
Erie, New York	88.7	(±5.2)	92.4	(±3.9)*	91.7	(±4.1)*	88.1	(±5.5)	90.9	(±4.6)*	93.0	(±4.1)*	NA	NA
Kings, New York	90.7	(±4.3)*	89.5	(±4.3)	86.8	(±4.2)	85.9	(±4.9)	86.8	(±4.2)	88.0	(±4.3)	90.3	(±3.3)*
Monroe, New York	NA	NA	89.4	(±5.0)	91.3	(±4.2)*	91.1	(±4.8)*	93.1	(±3.5)*	94.5	(±3.3)*	95.3	(±3.6)*
Nassau, New York	89.5	(±5.4)	90.3	(±4.3)*	89.2	(±4.3)	91.2	(±4.4)*	92.5	(±3.6)*	92.8	(±4.3)*	93.7	(±3.6)*
New York, New York	90.1	(±4.8)*	89.1	(±5.4)	90.1	(±4.4)*	96.3	(±2.6)*	95.7	(±2.6)*	91.8	(±4.2)*	92.1	(±4.0)*
Queens, New York	89.1	(±4.8)	91.2	(±3.7)*	84.1	(±4.8)	85.6	(±5.3)	92.7	(±3.0)*	94.0	(±3.2)*	94.5	(±3.0)*
Suffolk, New York	90.8	(±4.4)*	92.6	(±3.6)*	90.2	(±3.9)*	91.0	(±4.3)*	92.6	(±3.6)*	90.8	(±4.6)*	94.4	(±3.1)*
Westchester, New York	NA	NA	91.3	(±4.2)*	90.4	(±4.6)*	94.2	(±3.4)*	92.5	(±3.8)*	92.7	(±4.4)*	NA	NA
Durham, North Carolina	NA	NA	NA	NA	NA	NA	NA	NA	90.2	(±4.6)*	NA	NA	NA	NA
Guilford, North Carolina	NA	NA	91.8	(±4.4)*	89.6	(±4.7)	NA	NA	NA	NA	NA	NA	NA	NA
Mecklenburg, North Carolina	90.1	(±5.1)*	91.8	(±4.3)*	88.8	(±5.1)	88.6	(±5.3)	93.6	(±3.2)*	94.4	(±3.5)*	94.9	(±3.0)*
Wake, North Carolina	90.6	(±4.8)*	91.7	(±4.3)*	87.9	(±5.1)	94.4	(±2.6)*	93.8	(±3.0)*	95.8	(±1.9)*	96.3	(±1.6)*
Burleigh, North Dakota	91.8	(±4.0)*	92.4	(±3.7)*	88.7	(±4.5)	91.1	(±4.8)*	92.1	(±3.6)*	94.0	(±3.5)*	95.9	(±1.9)*
Cass, North Dakota	91.6	(±3.9)*	88.2	(±4.3)	89.2	(±4.0)	93.5	(±2.9)*	93.2	(±2.9)*	94.4	(±3.0)*	95.9	(±2.2)*
Grand Forks, North Dakota	88.2	(±5.3)	90.7	(±4.3)*	91.3	(±3.9)*	91.8	(±4.1)*	91.1	(±3.9)*	95.4	(±2.4)*	94.9	(±3.1)*
Ward, North Dakota	91.1	(±4.4)*	91.6	(±4.1)*	91.4	(±4.0)*	91.0	(±4.4)*	92.1	(±3.8)*	94.0	(±3.7)*	94.1	(±3.4)*
Cuyahoga, Ohio†	89.2	(±3.1)	88.7	(±2.9)	87.1	(±2.9)	89.0	(±2.9)	91.8	(±2.5)*	94.7	(±2.0)*	95.8	(±2.3)*
Franklin, Ohio	88.2	(±3.0)	87.2	(±2.9)	89.2	(±2.4)	90.4	(±2.4)*	92.7	(±2.1)*	93.1	(±3.4)*	95.3	(±2.7)*
Hamilton, Ohio†	89.9	(±4.9)	91.8	(±4.0)*	88.8	(±4.9)	91.9	(±4.2)*	94.5	(±2.5)*	91.1	(±4.5)*	95.6	(±2.6)*
Lucas, Ohio	NA	NA	88.6	(±5.2)	NA	NA	89.0	(±5.6)	NA	NA	NA	NA	NA	NA
Montgomery, Ohio	NA	NA	NA	NA	NA	NA	88.4	(±5.3)	NA	NA	NA	NA	NA	NA
Cleveland, Oklahoma	NA	NA	91.5	(±4.6)*	NA	NA	91.8	(±4.5)*	91.1	(±4.1)*	93.9	(±4.0)*	94.6	(±3.3)*
Oklahoma, Oklahoma	89.0	(±5.0)	91.8	(±3.9)*	88.1	(±4.0)	86.3	(±5.1)	90.8	(±3.7)*	92.2	(±3.8)*	92.9	(±3.6)*
Tulsa, Oklahoma	88.2	(±5.0)	92.1	(±3.7)*	89.9	(±3.9)	91.1	(±4.4)*	92.3	(±3.3)*	91.9	(±3.9)*	92.8	(±3.5)*
Clackamas, Oregon	90.9	(±4.5)*	88.9	(±4.7)	88.9	(±4.5)	88.8	(±5.1)	91.1	(±4.6)*	NA	NA	88.6	(±5.8)
Lane, Oregon	88.4	(±5.2)	89.6	(±4.8)	91.5	(±4.1)*	86.4	(±5.9)	90.3	(±4.6)*	88.7	(±5.7)	91.1	(±5.2)*
Marion, Oregon	90.5	(±4.9)*	90.0	(±4.4)	89.3	(±4.5)	90.9	(±4.5)*	89.3	(±4.7)	92.9	(±4.2)*	90.1	(±5.6)*
Multnomah, Oregon	90.2	(±4.1)*	87.1	(±4.8)	88.8	(±4.3)	88.9	(±4.4)	89.5	(±4.2)	89.7	(±4.8)	93.4	(±3.4)*
Washington, Oregon†	86.9	(±5.1)	91.4	(±3.8)*	87.1	(±4.7)	89.3	(±4.6)	90.8	(±3.6)*	90.6	(±4.8)*	92.5	(±4.3)*
Allegheny, Pennsylvania	90.3	(±4.5)*	88.8	(±4.6)	90.8	(±4.3)*	92.5	(±4.1)*	93.1	(±3.3)*	93.6	(±3.7)*	95.4	(±2.8)*
Delaware, Pennsylvania	NA	NA	91.3	(±4.4)*	NA	NA	NA	NA	93.2	(±3.4)*	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	92.9	(±4.0)*
Montgomery, Pennsylvania†	90.7	(±4.6)*	92.9	(±3.8)*	90.6	(±4.3)*	NA	NA	94.8	(±2.6)*	NA	NA	95.3	(±2.8)*
Philadelphia, Pennsylvania†	87.8	(±3.4)	90.7	(±2.5)*	90.3	(±2.4)*	89.3	(±2.8)	92.1	(±2.2)*	93.3	(±2.1)*	94.3	(±2.2)*
Kent, Rhode Island	90.7	(±4.3)*	93.1	(±3.4)*	93.6	(±2.8)*	92.5	(±3.9)*	92.8	(±3.4)*	94.0	(±3.2)*	95.3	(±3.0)*
Newport, Rhode Island	91.3	(±4.6)*	91.9	(±4.0)*	90.1	(±4.6)*	93.5	(±3.5)*	NA	NA	92.3	(±4.1)*	NA	NA
Providence, Rhode Island	93.4	(±2.5)*	94.2	(±2.3)*	93.0	(±2.5)*	92.6	(±2.8)*	93.0	(±2.8)*	94.8	(±2.4)*	94.7	(±2.6)*
Washington, Rhode Island	91.2	(±4.7)*	91.9	(±4.0)*	91.8	(±3.7)*	94.3	(±3.2)*	93.5	(±3.2)*	94.0	(±3.8)*	96.8	(±0.7)*
Charleston, South Carolina	89.1	(±5.6)	88.1	(±5.0)	90.2	(±4.9)*	90.0	(±5.5)	91.0	(±4.4)*	92.1	(±4.8)*	88.2	(±5.8)
Greenville, South Carolina	91.3	(±4.6)*	91.8	(±4.1)*	89.7	(±4.4)	91.4	(±4.5)*	93.1	(±3.4)*	92.1	(±4.6)*	93.8	(±3.4)*
Horry, South Carolina	NA	NA	NA	NA	NA	NA	90.4	(±5.1)*	NA	NA	NA	NA	94.4	(±3.4)*
Richland, South Carolina	NA	NA	90.9	(±4.6)*	89.3	(±5.1)	93.1	(±4.2)*	NA	NA	93.5	(±3.6)*	93.2	(±3.9)*
Spartanburg, South Carolina	89.0	(±5.6)	91.7	(±4.2)*	91.4	(±4.1)*	NA	NA	NA	NA	93.8	(±3.9)*	94.3	(±3.5)*
York, South Carolina	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	95.0	(±2.9)*
Minnehaha, South Dakota	89.5	(±4.4)	89.9	(±4.0)	90.5	(±3.9)*	90.8	(±3.7)*	93.2	(±3.2)*	95.5	(±2.3)*	96.1	(±2.0)*

See table footnotes on page 28.

TABLE 6. (Continued) Estimated vaccination coverage with ≥ 3 doses of polio vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Pennington, South Dakota	92.3	(± 4.0)*	91.7	(± 4.1)*	90.8	(± 4.2)*	89.9	(± 5.2)	93.0	(± 3.5)*	94.1	(± 3.4)*	92.7	(± 4.2)*
Davidson, Tennessee†	87.1	(± 3.0)	89.0	(± 2.6)	84.9	(± 3.2)	92.6	(± 2.1)*	93.5	(± 2.0)*	92.6	(± 3.8)*	95.3	(± 2.8)*
Hamilton, Tennessee	NA	NA	89.9	(± 4.7)	89.0	(± 4.9)	92.2	(± 4.1)*	NA	NA	NA	NA	NA	NA
Knox, Tennessee	91.2	(± 4.6)*	91.3	(± 4.2)*	89.8	(± 4.5)	92.0	(± 4.2)*	92.9	(± 3.4)*	93.9	(± 4.0)*	95.1	(± 3.3)*
Shelby, Tennessee†	85.3	(± 3.4)	89.5	(± 2.7)	89.8	(± 2.5)	87.6	(± 3.1)	91.2	(± 2.3)*	90.4	(± 2.9)*	92.8	(± 4.0)*
Bexar, Texas	90.7	(± 2.8)*	91.9	(± 2.4)*	85.2	(± 3.3)	89.0	(± 2.6)	89.0	(± 3.1)	91.6	(± 2.8)*	92.9	(± 2.4)*
Collin, Texas¶	NA	NA	NA	NA	NA	NA	95.7	(± 1.5)*	NA	NA	93.8	(± 4.0)*	NA	NA
Dallas, Texas	89.9	(± 2.9)	89.5	(± 2.6)	85.6	(± 3.1)	86.2	(± 2.8)	89.3	(± 2.5)	89.4	(± 3.2)	90.7	(± 2.4)*
El Paso, Texas†	90.2	(± 2.9)*	88.4	(± 2.7)	87.0	(± 3.2)	87.6	(± 2.9)	88.2	(± 2.9)	90.4	(± 2.6)*	91.9	(± 2.5)*
Harris, Texas	86.7	(± 3.4)	83.4	(± 3.3)	81.1	(± 3.5)	84.6	(± 3.7)	85.4	(± 3.3)	90.9	(± 2.8)*	90.6	(± 4.3)*
Hidalgo, Texas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	91.7	(± 5.3)*	NA	NA
Tarrant, Texas	90.6	(± 4.6)*	87.1	(± 5.3)	85.9	(± 5.7)	86.6	(± 6.1)	91.7	(± 3.8)*	93.4	(± 3.7)*	92.3	(± 4.1)*
Travis, Texas	NA	NA	NA	NA	89.0	(± 5.1)	NA	NA	91.4	(± 4.3)*	92.0	(± 4.6)*	NA	NA
Cache, Utah	NA	NA	89.6	(± 4.8)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Davis, Utah	88.6	(± 4.8)	93.3	(± 3.4)*	87.9	(± 4.7)	89.6	(± 4.9)	91.2	(± 4.0)*	92.6	(± 3.8)*	94.5	(± 3.2)*
Salt Lake, Utah†	86.6	(± 4.0)	90.6	(± 3.2)*	89.9	(± 3.4)	89.6	(± 3.8)	89.8	(± 3.5)	90.0	(± 4.6)	92.0	(± 3.8)*
Utah, Utah	84.7	(± 5.0)	91.1	(± 3.7)*	87.3	(± 4.4)	89.5	(± 4.5)	88.5	(± 4.1)	91.5	(± 4.1)*	89.4	(± 4.7)
Weber, Utah	87.2	(± 5.6)	90.8	(± 4.1)*	89.2	(± 4.6)	88.6	(± 5.3)	92.5	(± 3.6)*	NA	NA	NA	NA
Addison, Vermont	91.4	(± 4.7)*	91.6	(± 4.7)*	NA	NA	92.1	(± 4.1)*	92.8	(± 3.5)*	NA	NA	NA	NA
Bennington, Vermont	NA	NA	92.0	(± 4.3)*	91.5	(± 4.2)*	NA	NA	NA	NA	NA	NA	NA	NA
Chittenden, Vermont	93.4	(± 3.2)*	92.7	(± 3.6)*	92.0	(± 3.7)*	93.3	(± 3.0)*	94.1	(± 2.7)*	95.8	(± 1.9)*	94.4	(± 2.9)*
Franklin, Vermont	91.9	(± 4.3)*	91.4	(± 4.8)*	92.8	(± 3.4)*	92.5	(± 3.8)*	92.8	(± 3.6)*	NA	NA	94.2	(± 3.8)*
Lamoille, Vermont	NA	NA	NA	NA	NA	NA	NA	NA	91.0	(± 4.5)*	NA	NA	NA	NA
Orange, Vermont	91.4	(± 4.7)*	91.2	(± 4.4)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rutland, Vermont†	88.3	(± 5.3)	91.5	(± 4.2)*	91.9	(± 3.9)*	91.8	(± 4.9)*	92.8	(± 3.7)*	NA	NA	NA	NA
Washington, Vermont	93.0	(± 3.5)*	92.3	(± 3.8)*	90.6	(± 4.5)*	93.4	(± 3.5)*	93.2	(± 3.3)*	94.4	(± 3.1)*	94.7	(± 3.1)*
Windham, Vermont	NA	NA	92.0	(± 4.4)*	91.6	(± 4.3)*	90.9	(± 4.8)*	NA	NA	NA	NA	92.0	(± 4.4)*
Windsor, Vermont	91.5	(± 4.2)*	91.5	(± 4.3)*	89.1	(± 4.6)	91.6	(± 4.7)*	93.1	(± 3.5)*	93.1	(± 3.8)*	NA	NA
Fairfax, Virginia	90.5	(± 4.5)*	90.2	(± 4.2)*	89.6	(± 4.3)	90.6	(± 4.6)*	94.4	(± 2.7)*	94.2	(± 3.1)*	95.2	(± 2.6)*
Loudoun, Virginia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	94.5	(± 3.2)*
Virginia Beach, Virginia	NA	NA	90.3	(± 4.6)*	84.9	(± 6.0)	NA	NA	NA	NA	NA	NA	90.8	(± 5.2)*
Clark, Washington	92.5	(± 3.9)*	89.1	(± 5.0)	90.3	(± 4.4)*	87.1	(± 5.8)	90.7	(± 4.4)*	92.0	(± 4.6)*	NA	NA
King, Washington	92.0	(± 2.2)*	92.4	(± 2.1)*	87.3	(± 2.7)	90.7	(± 2.4)*	92.8	(± 2.1)*	88.9	(± 3.4)	88.7	(± 4.3)
Kitsap, Washington	NA	NA	NA	NA	91.1	(± 4.3)*	NA	NA	87.2	(± 5.3)	NA	NA	91.9	(± 4.4)*
Pierce, Washington	88.8	(± 5.1)	91.1	(± 4.1)*	88.2	(± 4.2)	87.6	(± 5.3)	91.5	(± 4.0)*	92.5	(± 4.3)*	86.8	(± 6.1)
Snohomish, Washington	89.3	(± 4.8)	91.6	(± 3.6)*	91.1	(± 3.8)*	88.4	(± 4.8)	91.3	(± 4.1)*	90.5	(± 4.7)*	91.4	(± 4.8)*
Spokane, Washington	91.4	(± 4.5)*	91.1	(± 4.1)*	91.3	(± 4.1)*	84.3	(± 6.2)	89.9	(± 4.6)	NA	NA	90.0	(± 4.9)
Thurston, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	89.1	(± 4.8)
Whatcom, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	91.0	(± 4.6)*
Yakima, Washington	91.0	(± 4.7)*	90.9	(± 4.7)*	NA	NA	87.2	(± 6.7)	NA	NA	NA	NA	NA	NA
Kanawha, West Virginia	88.6	(± 4.9)	90.3	(± 4.6)*	91.3	(± 4.1)*	NA	NA	93.0	(± 3.6)*	91.7	(± 4.3)*	95.1	(± 3.1)*
Brown, Wisconsin	NA	NA	NA	NA	NA	NA	91.3	(± 4.6)*	NA	NA	NA	NA	NA	NA
Dane, Wisconsin	91.2	(± 4.3)*	91.8	(± 4.1)*	90.8	(± 4.4)*	93.0	(± 3.7)*	92.1	(± 3.6)*	95.8	(± 1.9)*	93.3	(± 4.0)*
Milwaukee, Wisconsin†	87.9	(± 3.2)	88.1	(± 2.7)	87.9	(± 2.9)	84.7	(± 3.5)	91.2	(± 2.5)*	92.6	(± 2.9)*	94.0	(± 3.4)*
Outagamie, Wisconsin	NA	NA	90.3	(± 4.6)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Waukesha, Wisconsin	90.9	(± 4.5)*	92.8	(± 3.7)*	89.8	(± 4.4)	92.6	(± 4.1)*	93.8	(± 3.1)*	94.7	(± 3.1)*	NA	NA
Albany, Wyoming	NA	NA	90.3	(± 4.6)*	90.8	(± 4.4)*	NA	NA	90.2	(± 4.6)*	NA	NA	NA	NA
Campbell, Wyoming	NA	NA	90.8	(± 4.4)*	88.7	(± 4.8)	91.8	(± 4.1)*	91.8	(± 3.7)*	93.5	(± 3.7)*	95.6	(± 2.3)*
Fremont, Wyoming†	NA	NA	89.8	(± 5.1)	89.3	(± 4.7)	85.3	(± 6.7)	92.4	(± 3.9)*	NA	NA	NA	NA
Laramie, Wyoming	89.0	(± 4.7)	92.6	(± 3.6)*	90.2	(± 4.1)*	85.9	(± 5.7)	91.5	(± 3.5)*	94.2	(± 3.3)*	92.0	(± 4.1)*
Natrona, Wyoming	89.6	(± 4.7)	92.5	(± 3.7)*	90.6	(± 4.0)*	90.3	(± 4.6)*	93.4	(± 3.0)*	94.0	(± 3.6)*	94.9	(± 3.0)*
Sweetwater, Wyoming	91.0	(± 4.7)*	83.2	(± 6.1)	91.0	(± 4.1)*	88.3	(± 5.5)	NA	NA	90.0	(± 4.7)	94.1	(± 3.3)*
Uinta, Wyoming	NA	NA	NA	NA	92.1	(± 3.8)*	NA	NA	NA	NA	NA	NA	NA	NA
United States†	89.6	(± 0.6)*	90.5	(± 0.5)*	89.2	(± 0.5)	89.6	(± 0.5)*	91.8	(± 0.5)*	92.3	(± 0.5)*	93.1	(± 0.5)*
Sample size, no.	37,282		44,855		45,623		45,052		43,308		38,607		35,447	
All selected counties	89.2	(± 0.7)	89.9	(± 0.6)*	88.5	(± 0.6)	89.1	(± 0.7)	91.4	(± 0.6)*	91.8	(± 0.6)*	92.9	(± 0.6)*
Sample size, no.	23,014		29,227		30,362		29,851		28,845		23,485		20,552	
Range, %	82.2–93.4		83.2–94.2		81.1–94.6		78.1–96.3		85.4–95.7		85.4–95.8		86.8–96.8	

Abbreviations: DTaP = diphtheria and tetanus toxoids and acellular pertussis; DTP = diphtheria and tetanus toxoids and pertussis; CI = confidence interval; NA = not available.

* Estimate exceeds the *Healthy People 2010* objective of 90% vaccination coverage.

† Estimates increased significantly between the first and last biennial periods ($p < 0.05$).

‡ Estimate has 95% CI half-width that exceeds 10% and might be imprecise.

¶ Estimates decreased significantly between the first and last biennial periods ($p < 0.05$).

TABLE 7. Estimated vaccination coverage with ≥ 1 dose of MMR vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Jefferson, Alabama	92.5	(± 2.4)*	93.6	(± 2.0)*	91.2	(± 2.4)*	92.2	(± 2.4)*	92.4	(± 2.7)*	95.1	(± 2.0)*	93.9	(± 3.2)*
Madison, Alabama	NA	NA	91.0	(± 4.8)*	89.5	(± 4.6)*	NA	NA	93.4	(± 3.7)*	93.0	(± 3.6)*	94.9	(± 2.3)*
Mobile, Alabama	86.7	(± 6.2)	91.9	(± 4.1)*	87.7	(± 5.4)*	93.1	(± 3.8)*	92.6	(± 3.8)*	91.9	(± 3.9)*	92.1	(± 4.2)*
Montgomery, Alabama	NA	NA	90.2	(± 5.5)*	90.7	(± 4.8)*	NA	NA	NA	NA	NA	NA	NA	NA
Shelby, Alabama	NA	NA	NA	NA	91.9	(± 4.3)*	92.5	(± 3.9)*	93.1	(± 4.1)*	NA	NA	92.0	(± 4.8)*
Anchorage, Alaska	NA	NA	NA	NA	90.5	(± 3.2)*	90.4	(± 3.5)*	92.7	(± 2.7)*	89.9	(± 3.9)	90.5	(± 3.9)*
Fairbanks North Star, Alaska	NA	NA	NA	NA	89.4	(± 4.7)	87.1	(± 4.9)	91.8	(± 3.6)*	89.8	(± 4.5)	90.2	(± 4.8)*
Kenai Peninsula, Alaska	NA	NA	NA	NA	91.1	(± 4.4)*	NA	NA	NA	NA	NA	NA	NA	NA
Matanuska-Susitna, Alaska	NA	NA	NA	NA	88.5	(± 5.1)	92.2	(± 4.0)*	91.0	(± 4.5)*	87.2	(± 5.4)	88.3	(± 5.3)
Cochise, Arizona	NA	NA	89.9	(± 5.1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Coconino, Arizona	NA	NA	86.5	(± 6.4)	NA	NA	NA	NA	92.8	(± 4.3)*	NA	NA	NA	NA
Maricopa, Arizona	86.2	(± 3.5)	89.0	(± 2.7)	87.5	(± 2.8)	90.2	(± 2.4)*	92.4	(± 2.2)*	88.1	(± 2.9)	89.8	(± 3.5)
Mohave, Arizona	NA	NA	NA	NA	88.4	(± 5.4)	89.8	(± 4.8)	NA	NA	NA	NA	NA	NA
Pima, Arizona†	82.8	(± 5.2)	89.2	(± 3.7)	91.1	(± 3.3)*	87.5	(± 4.0)	92.6	(± 3.2)*	90.1	(± 3.6)*	92.3	(± 3.9)*
Pinal, Arizona	87.2	(± 6.2)	85.8	(± 6.6)	89.1	(± 5.5)	91.0	(± 4.4)*	90.9	(± 4.9)*	88.8	(± 5.5)	NA	NA
Yavapai, Arizona	NA	NA	NA	NA	NA	NA	90.2	(± 4.7)*	91.7	(± 4.2)*	NA	NA	NA	NA
Yuma, Arizona	85.6	(± 6.7)	90.2	(± 4.8)*	89.5	(± 4.8)	86.7	(± 5.8)	94.7	(± 2.6)*	90.8	(± 4.7)*	NA	NA
Benton, Arkansas	NA	NA	87.5	(± 5.5)	NA	NA	90.4	(± 4.6)*	92.0	(± 4.1)*	89.1	(± 5.0)	93.2	(± 3.6)*
Pulaski, Arkansas	88.2	(± 5.3)	93.5	(± 3.5)*	85.1	(± 5.6)	93.2	(± 3.5)*	94.8	(± 3.0)*	88.3	(± 5.6)	93.5	(± 3.8)*
Washington, Arkansas	90.1	(± 5.2)*	92.4	(± 4.0)*	NA	NA	89.7	(± 5.1)	NA	NA	NA	NA	91.6	(± 4.3)*
Alameda, California	90.8	(± 4.6)*	NA	NA	92.3	(± 4.0)*	92.5	(± 4.1)*	93.9	(± 3.5)*	91.0	(± 3.2)*	93.3	(± 3.2)*
Los Angeles, California	89.6	(± 3.2)	90.2	(± 2.7)*	92.1	(± 2.3)*	90.6	(± 2.7)*	94.4	(± 1.8)*	92.4	(± 2.3)*	93.1	(± 2.1)*
Orange, California	95.3	(± 1.9)*	90.9	(± 4.1)*	88.4	(± 4.8)	91.1	(± 4.2)*	90.8	(± 4.2)*	92.3	(± 3.9)*	92.2	(± 4.1)*
Riverside, California	NA	NA	NA	NA	90.1	(± 4.7)*	91.5	(± 4.5)*	92.0	(± 4.1)*	NA	NA	89.8	(± 5.2)
San Bernardino, California†	NA	NA	84.2	(± 6.3)	90.4	(± 4.9)*	91.1	(± 4.4)*	92.7	(± 3.9)*	89.2	(± 3.7)	92.0	(± 3.6)*
San Diego, California	91.5	(± 2.6)*	93.5	(± 1.9)*	92.7	(± 2.1)*	92.0	(± 2.2)*	91.7	(± 2.6)*	90.9	(± 3.6)*	92.4	(± 4.2)*
San Mateo, California	NA	NA	92.5	(± 4.1)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Santa Clara, California	93.2	(± 2.3)*	92.5	(± 2.2)*	92.1	(± 2.2)*	92.3	(± 2.1)*	93.2	(± 2.4)*	92.6	(± 3.3)*	NA	NA
Adams, Colorado	85.2	(± 6.4)	89.8	(± 4.6)	87.6	(± 5.2)	91.8	(± 4.3)*	89.2	(± 5.2)	NA	NA	NA	NA
Arapahoe, Colorado	94.3	(± 2.9)*	91.7	(± 4.3)*	91.6	(± 4.0)*	90.0	(± 4.5)	92.4	(± 4.0)*	NA	NA	92.2	(± 4.7)*
Boulder, Colorado	NA	NA	92.9	(± 3.8)*	90.8	(± 4.6)*	90.7	(± 4.5)*	88.5	(± 4.9)	90.4	(± 4.4)*	89.0	(± 5.2)
Denver, Colorado	90.1	(± 4.7)*	92.7	(± 3.6)*	92.3	(± 3.8)*	91.9	(± 4.1)*	94.4	(± 3.0)*	NA	NA	NA	NA
Douglas, Colorado	NA	NA	NA	NA	92.0	(± 4.1)*	93.0	(± 3.8)*	91.9	(± 4.1)*	NA	NA	NA	NA
El Paso, Colorado	92.1	(± 4.3)*	89.8	(± 5.0)	88.6	(± 4.8)	89.8	(± 4.6)	90.1	(± 4.3)*	91.3	(± 4.2)*	91.7	(± 4.0)*
Jefferson, Colorado	90.8	(± 4.3)*	95.1	(± 2.0)*	91.2	(± 4.3)*	93.1	(± 3.6)*	92.0	(± 4.0)*	94.1	(± 3.0)*	91.2	(± 4.4)*
Larimer, Colorado	NA	NA	NA	NA	89.9	(± 4.7)	92.5	(± 4.0)*	NA	NA	90.6	(± 4.8)*	NA	NA
Weld, Colorado	NA	NA	NA	NA	90.6	(± 4.7)*	91.0	(± 4.6)*	89.4	(± 5.0)	NA	NA	91.0	(± 4.9)*
Fairfield, Connecticut	95.6	(± 2.6)*	93.2	(± 2.8)*	94.6	(± 2.7)*	95.2	(± 2.0)*	94.6	(± 2.9)*	93.2	(± 3.0)*	91.6	(± 3.6)*
Hartford, Connecticut	94.9	(± 2.4)*	94.5	(± 2.6)*	92.8	(± 3.3)*	92.3	(± 3.3)*	95.2	(± 2.4)*	94.9	(± 2.5)*	95.4	(± 2.1)*
New Haven, Connecticut	91.8	(± 3.7)*	93.4	(± 2.9)*	93.4	(± 3.2)*	91.9	(± 3.6)*	94.7	(± 2.8)*	94.3	(± 2.6)*	94.0	(± 3.1)*
New London, Connecticut	93.6	(± 3.6)*	90.4	(± 4.6)*	91.2	(± 4.4)*	NA	NA	92.9	(± 3.9)*	93.7	(± 3.4)*	91.2	(± 4.7)*
Kent, Delaware	90.6	(± 4.4)*	91.9	(± 3.9)*	89.7	(± 4.3)	93.3	(± 3.2)*	92.4	(± 3.8)*	92.9	(± 3.5)*	92.1	(± 4.0)*
New Castle, Delaware	91.3	(± 3.1)*	92.5	(± 2.6)*	92.3	(± 2.4)*	92.5	(± 2.6)*	94.1	(± 2.6)*	94.5	(± 2.4)*	93.4	(± 3.1)*
Sussex, Delaware	86.0	(± 5.4)	89.8	(± 4.5)	92.4	(± 3.6)*	95.4	(± 1.9)*	93.6	(± 3.2)*	94.8	(± 2.3)*	92.3	(± 3.5)*
District of Columbia	92.1	(± 2.5)*	91.0	(± 2.5)*	89.2	(± 2.9)	91.9	(± 2.5)*	94.1	(± 2.2)*	92.2	(± 2.2)*	92.9	(± 2.2)*
Broward, Florida	90.5	(± 4.6)*	92.3	(± 3.9)*	91.2	(± 4.1)*	91.7	(± 4.0)*	93.8	(± 3.3)*	91.4	(± 4.3)*	92.4	(± 4.0)*
Duval, Florida	89.1	(± 3.1)	90.1	(± 2.7)*	91.4	(± 2.5)*	92.3	(± 2.6)*	92.2	(± 2.6)*	91.3	(± 2.3)*	NA	NA
Hillsborough, Florida	89.5	(± 5.3)	91.7	(± 4.4)*	88.2	(± 4.9)	92.4	(± 3.9)*	92.0	(± 3.8)*	89.2	(± 4.8)	NA	NA
Dade, Florida	NA	NA	NA	NA	93.2	(± 2.2)*	92.2	(± 2.3)*	94.0	(± 2.0)*	93.7	(± 2.8)*	92.2	(± 2.5)*
Orange, Florida	NA	NA	NA	NA	90.0	(± 4.6)	NA	NA	93.5	(± 3.9)*	NA	NA	94.6	(± 2.2)*
Palm Beach, Florida	NA	NA	90.9	(± 4.4)*	92.0	(± 3.9)*	92.5	(± 4.0)*	94.7	(± 2.8)*	90.9	(± 4.7)*	92.5	(± 4.5)*
Pinellas, Florida	NA	NA	92.0	(± 4.1)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobb, Georgia	95.5	(± 1.7)*	90.6	(± 4.5)*	92.5	(± 3.8)*	92.5	(± 3.9)*	95.0	(± 2.4)*	93.7	(± 3.4)*	91.2	(± 4.3)*
DeKalb, Georgia	90.3	(± 4.5)*	89.8	(± 4.1)	93.1	(± 2.7)*	92.6	(± 2.9)*	94.5	(± 2.2)*	92.6	(± 3.4)*	94.0	(± 3.4)*
Fulton, Georgia	90.2	(± 4.1)*	90.8	(± 3.1)*	92.3	(± 2.7)*	92.0	(± 2.9)*	94.9	(± 2.1)*	92.6	(± 3.0)*	93.3	(± 3.6)*
Gwinnett, Georgia	90.1	(± 5.0)*	93.0	(± 3.6)*	92.6	(± 3.8)*	91.9	(± 4.0)*	92.1	(± 3.7)*	93.8	(± 3.2)*	91.5	(± 4.2)*
Hawaii, Hawaii	89.2	(± 5.5)	88.9	(± 5.7)	91.9	(± 4.0)*	93.0	(± 3.6)*	94.3	(± 3.1)*	88.9	(± 5.0)	91.7	(± 4.4)*
Honolulu, Hawaii	94.0	(± 2.5)*	91.0	(± 3.0)*	93.0	(± 2.4)*	93.4	(± 2.2)*	93.4	(± 2.2)*	91.2	(± 2.9)*	93.7	(± 2.3)*
Maui, Hawaii	88.0	(± 5.3)	90.9	(± 4.8)*	90.0	(± 4.5)	91.8	(± 4.1)*	93.8	(± 3.3)*	89.2	(± 5.3)	92.4	(± 4.6)*
Ada, Idaho	90.0	(± 4.1)	91.6	(± 3.5)*	90.5	(± 3.8)*	87.4	(± 4.8)	92.3	(± 3.7)*	91.7	(± 3.5)*	89.3	(± 4.4)
Bannock, Idaho	NA	NA	91.3	(± 4.6)*	89.8	(± 5.0)	91.2	(± 4.3)*	NA	NA	NA	NA	NA	NA
Bonneville, Idaho	85.0	(± 6.0)	86.6	(± 5.5)	89.8	(± 4.5)	91.4	(± 4.2)*	93.0	(± 3.9)*	91.6	(± 4.2)*	89.5	(± 5.5)
Canyon, Idaho	NA	NA	89.2	(± 4.6)	89.6	(± 5.2)	88.5	(± 4.9)	94.6	(± 2.6)*	86.2	(± 5.4)	90.4	(± 4.7)*
Kootenai, Idaho	88.4	(± 5.4)	92.6	(± 4.1)*	88.7	(± 5.1)	87.4	(± 5.7)	NA	NA	NA	NA	NA	NA
Twin Falls, Idaho	NA	NA	88.5	(± 5.4)	NA	NA	92.7	(± 4.0)*	NA	NA	NA	NA	NA	NA
Cook, Illinois	89.0	(± 3.0)	87.9	(± 3.2)	89.7	(± 2.5)	91.6	(± 2.3)*	92.6	(± 2.6)*	91.0	(± 2.4)*	90.4	(± 2.5)*
DuPage, Illinois	94.1	(± 3.5)*	94.1	(± 3.3)*	93.2	(± 3.5)*	91.6	(± 4.0)*	96.0	(± 1.6)*	NA	NA	90.8	(± 4.5)*
Lake, Illinois	93.5	(± 3.5)*	91.9	(± 4.0)*	92.9	(± 3.7)*	91.6	(± 4.3)*	91.7	(± 4.2)*	NA	NA	94.6	(± 2.6)*

See table footnotes on page 32.

TABLE 7. (Continued) Estimated vaccination coverage with ≥1 dose of MMR vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Will, Illinois	NA	NA	NA	NA	91.5	(±4.5)*	89.9	(±4.6)	93.8	(±3.4)*	93.8	(±3.3)*	95.2	(±2.0)*
Allen, Indiana	NA	NA	91.1	(±4.3)*	91.0	(±4.5)*	91.6	(±4.3)*	92.3	(±4.0)*	NA	NA	87.5	(±6.0)
Hamilton, Indiana	93.6	(±3.8)*	94.9	(±2.5)*	92.4	(±4.3)*	92.2	(±4.1)*	93.9	(±3.5)*	NA	NA	93.2	(±3.7)*
Lake, Indiana	84.2	(±6.7)	89.5	(±5.1)	90.1	(±4.5)*	92.9	(±3.8)*	93.0	(±3.8)*	NA	NA	90.1	(±5.1)*
Marion, Indiana	90.5	(±2.7)*	90.4	(±2.4)*	88.6	(±3.0)	91.1	(±2.7)*	92.5	(±2.5)*	92.1	(±3.6)*	90.1	(±4.2)*
Linn, Iowa	NA	NA	91.9	(±4.7)*	NA	NA	91.7	(±4.2)*	92.6	(±4.5)*	NA	NA	90.1	(±5.2)*
Polk, Iowa	92.0	(±4.2)*	91.2	(±3.9)*	91.2	(±4.1)*	89.9	(±4.4)	93.6	(±3.4)*	91.9	(±3.7)*	92.1	(±3.9)*
Scott, Iowa	NA	NA	NA	NA	89.1	(±5.0)	93.3	(±3.8)*	91.3	(±4.5)*	NA	NA	NA	NA
Johnson, Kansas	93.7	(±3.4)*	93.0	(±3.4)*	92.5	(±3.2)*	93.2	(±3.3)*	91.4	(±3.8)*	93.8	(±2.4)*	92.5	(±3.5)*
Sedgwick, Kansas	86.8	(±5.4)	90.6	(±4.0)*	87.4	(±4.8)	93.5	(±3.4)*	92.5	(±3.7)*	91.6	(±3.8)*	91.2	(±4.3)*
Shawnee, Kansas	NA	NA	NA	NA	91.1	(±4.5)*	NA	NA	NA	NA	90.7	(±4.7)*	91.5	(±4.9)*
Fayette, Kentucky	NA	NA	94.2	(±3.3)*	91.7	(±4.2)*	NA	NA	93.4	(±3.5)*	NA	NA	NA	NA
Jefferson, Kentucky	85.7	(±5.6)	90.9	(±4.0)*	92.6	(±3.6)*	92.2	(±4.0)*	93.4	(±3.5)*	93.2	(±3.3)*	93.6	(±3.4)*
Caddo, Louisiana	NA	NA	89.3	(±5.1)	89.7	(±4.7)	NA	NA	NA	NA	92.9	(±4.0)*	93.3	(±3.8)*
East Baton Rouge, Louisiana	88.7	(±5.6)	88.0	(±5.5)	92.5	(±3.8)*	93.2	(±3.6)*	92.6	(±3.8)*	95.7	(±1.6)*	92.9	(±3.9)*
Jefferson, Louisiana	87.9	(±5.5)	92.5	(±4.2)*	90.2	(±4.6)*	90.7	(±4.4)*	91.5	(±4.2)*	93.3	(±3.3)*	93.4	(±3.4)*
Lafayette, Louisiana	NA	NA	86.1	(±6.3)	NA	NA	NA	NA	91.9	(±4.1)*	NA	NA	92.9	(±4.0)*
Orleans, Louisiana	87.2	(±3.6)	86.2	(±3.4)	84.9	(±3.6)	85.9	(±3.3)	91.5	(±2.5)*	89.1	(±4.3)	92.3	(±4.1)*
St. Tammany, Louisiana	NA	NA	NA	NA	NA	NA	92.5	(±3.9)*	93.3	(±3.7)*	91.8	(±3.7)*	NA	NA
Androscoggin, Maine	91.4	(±5.0)*	92.5	(±3.9)*	92.4	(±3.8)*	93.4	(±3.6)*	93.0	(±4.0)*	92.0	(±4.5)*	91.0	(±4.6)*
Aroostook, Maine	NA	NA	93.8	(±3.1)*	90.7	(±4.7)*	NA	NA	92.4	(±4.0)*	NA	NA	NA	NA
Cumberland, Maine	94.1	(±2.8)*	93.2	(±3.0)*	90.4	(±3.7)*	92.5	(±3.3)*	91.6	(±3.5)*	89.8	(±3.9)	92.0	(±3.4)*
Kennebec, Maine	93.8	(±3.2)*	93.9	(±3.3)*	91.0	(±4.9)*	92.7	(±3.8)*	94.9	(±2.4)*	NA	NA	94.5	(±2.6)*
Penobscot, Maine	93.1	(±4.0)*	91.7	(±4.3)*	89.7	(±4.6)	92.4	(±3.9)*	94.3	(±3.0)*	91.7	(±4.6)*	89.7	(±4.8)
York, Maine	94.0	(±2.8)*	92.2	(±3.8)*	92.3	(±3.6)*	90.9	(±3.9)*	92.8	(±3.6)*	92.3	(±3.8)*	91.6	(±4.5)*
Anne Arundel, Maryland	93.6	(±3.3)*	91.7	(±4.4)*	90.8	(±4.4)*	93.3	(±3.5)*	93.5	(±3.5)*	93.6	(±3.2)*	93.0	(±3.9)*
Baltimore, Maryland	92.6	(±3.9)*	91.7	(±3.9)*	93.2	(±3.4)*	94.0	(±3.0)*	93.8	(±3.3)*	95.2	(±2.6)*	94.7	(±2.8)*
Frederick, Maryland	NA	NA	NA	NA	92.0	(±4.3)*	93.0	(±3.8)*	92.9	(±4.3)*	NA	NA	NA	NA
Harford, Maryland	NA	NA	NA	NA	NA	NA	NA	NA	93.0	(±4.2)*	NA	NA	NA	NA
Howard, Maryland	NA	NA	95.9	(±2.5)*	92.2	(±4.1)*	92.9	(±4.1)*	95.6	(±3.0)*	NA	NA	95.3	(±2.9)*
Montgomery, Maryland	93.3	(±3.5)*	94.9	(±2.6)*	92.9	(±3.3)*	92.1	(±3.4)*	95.1	(±2.6)*	96.4	(±1.9)*	95.3	(±2.6)*
Prince George's, Maryland	91.8	(±4.0)*	87.2	(±5.2)	91.7	(±3.6)*	91.8	(±4.1)*	93.5	(±3.6)*	91.3	(±4.2)*	93.3	(±3.7)*
City of Baltimore, Maryland	NA	NA	NA	NA	91.7	(±2.6)*	93.3	(±2.3)*	94.1	(±2.1)*	92.8	(±2.5)*	92.8	(±3.1)*
Bristol, Massachusetts	91.2	(±5.1)*	92.4	(±4.0)*	95.3	(±1.7)*	93.1	(±3.8)*	93.2	(±3.7)*	94.8	(±2.3)*	NA	NA
Essex, Massachusetts	95.7	(±1.6)*	95.2	(±2.0)*	92.4	(±3.7)*	93.4	(±3.5)*	94.1	(±3.2)*	91.3	(±4.1)*	92.6	(±4.2)*
Hampden, Massachusetts	92.6	(±4.0)*	91.3	(±4.5)*	91.9	(±4.2)*	92.2	(±4.4)*	93.5	(±3.9)*	NA	NA	NA	NA
Middlesex, Massachusetts	94.5	(±2.6)*	94.2	(±2.7)*	93.2	(±3.3)*	92.7	(±3.5)*	94.6	(±2.6)*	96.5	(±1.1)*	94.1	(±3.3)*
Norfolk, Massachusetts	94.9	(±2.9)*	95.0	(±2.9)*	90.5	(±4.4)*	92.8	(±3.6)*	94.8	(±3.1)*	94.9	(±2.7)*	94.0	(±3.5)*
Plymouth, Massachusetts	93.6	(±3.4)*	95.0	(±2.2)*	92.6	(±3.8)*	93.3	(±3.7)*	95.9	(±1.6)*	NA	NA	91.4	(±4.8)*
Suffolk, Massachusetts†	93.0	(±3.4)*	94.9	(±2.2)*	94.0	(±1.8)*	92.1	(±2.3)*	94.6	(±2.2)*	92.7	(±3.9)*	96.6	(±1.0)*
Worcester, Massachusetts	93.0	(±3.8)*	94.0	(±3.2)*	91.4	(±4.1)*	92.9	(±3.4)*	94.3	(±3.1)*	94.3	(±3.0)*	92.1	(±4.1)*
Kent, Michigan	91.7	(±4.6)*	90.5	(±5.0)*	91.0	(±4.6)*	92.5	(±4.0)*	92.4	(±4.2)*	NA	NA	91.6	(±4.3)*
Macomb, Michigan	91.5	(±4.5)*	91.1	(±4.6)*	91.3	(±4.3)*	90.6	(±4.4)*	93.6	(±3.6)*	92.9	(±3.6)*	NA	NA
Oakland, Michigan	92.1	(±3.9)*	93.8	(±3.1)*	92.8	(±3.4)*	92.2	(±3.9)*	92.6	(±3.7)*	95.7	(±1.9)*	88.7	(±5.0)
Wayne, Michigan	86.7	(±3.6)	84.9	(±3.8)	87.7	(±3.1)	88.4	(±4.0)	91.6	(±3.2)*	91.1	(±3.4)*	88.1	(±4.9)
Anoka, Minnesota	90.0	(±5.2)	91.0	(±5.3)*	92.1	(±4.1)*	93.0	(±3.7)*	NA	NA	NA	NA	90.2	(±4.9)*
Dakota, Minnesota	94.9	(±2.3)*	90.2	(±4.8)*	90.7	(±4.5)*	92.5	(±4.2)*	93.1	(±3.8)*	93.4	(±3.4)*	91.8	(±5.0)*
Hennepin, Minnesota	94.0	(±3.0)*	92.9	(±3.1)*	92.7	(±3.3)*	92.9	(±3.6)*	94.5	(±2.7)*	94.3	(±2.9)*	92.6	(±3.0)*
Ramsey, Minnesota	93.4	(±3.6)*	91.8	(±4.4)*	92.3	(±3.9)*	89.4	(±4.8)	92.7	(±4.0)*	93.5	(±3.3)*	93.6	(±3.5)*
Washington, Minnesota	NA	NA	89.9	(±5.3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Harrison, Mississippi	NA	NA	88.7	(±5.1)	NA	NA	NA	NA	NA	NA	92.1	(±3.9)*	NA	NA
Hinds, Mississippi	89.3	(±5.4)	90.3	(±5.0)*	91.6	(±4.2)*	90.1	(±4.6)*	NA	NA	88.6	(±5.5)	90.0	(±4.8)
Greene, Missouri	NA	NA	NA	NA	NA	NA	91.3	(±4.5)*	NA	NA	NA	NA	NA	NA
Jackson, Missouri	88.4	(±5.3)	91.2	(±4.4)*	91.6	(±4.2)*	91.9	(±4.1)*	93.1	(±3.5)*	93.3	(±3.4)*	91.4	(±4.3)*
Jefferson, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.9	(±4.9)*
St. Charles, Missouri	NA	NA	91.4	(±4.7)*	NA	NA	NA	NA	NA	NA	NA	NA	93.1	(±3.7)*
St. Louis, Missouri†	93.0	(±3.4)*	92.3	(±3.6)*	92.1	(±3.7)*	93.7	(±3.4)*	94.4	(±3.0)*	94.1	(±2.6)*	93.5	(±3.7)*
City of St. Louis, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	92.4	(±4.4)*
Cascade, Montana	87.0	(±5.5)	91.9	(±3.7)*	91.4	(±4.2)*	91.6	(±4.2)*	93.9	(±3.4)*	93.1	(±3.6)*	91.2	(±4.6)*
Flathead, Montana	86.6	(±6.1)	86.2	(±5.7)	91.6	(±4.2)*	87.6	(±5.3)	88.1	(±5.2)	85.1	(±6.5)	89.2	(±5.0)
Gallatin, Montana	93.5	(±3.9)*	89.8	(±4.8)	89.6	(±4.7)	90.2	(±4.6)*	92.3	(±3.9)*	90.3	(±4.5)*	91.7	(±4.2)*
Lewis and Clark, Montana	NA	NA	91.1	(±4.3)*	90.5	(±4.7)*	93.2	(±3.8)*	NA	NA	NA	NA	91.0	(±4.7)*
Missoula, Montana	89.7	(±4.7)	92.0	(±4.1)*	89.9	(±4.9)	92.2	(±3.8)*	90.3	(±4.3)*	90.9	(±4.1)*	89.7	(±4.7)
Yellowstone, Montana	87.5	(±4.9)	91.4	(±3.9)*	89.6	(±4.5)	89.6	(±4.0)	90.3	(±4.1)*	92.9	(±3.3)*	89.7	(±4.7)
Douglas, Nebraska	92.5	(±3.5)*	92.1	(±3.1)*	92.0	(±3.3)*	91.8	(±3.3)*	93.2	(±2.9)*	94.2	(±2.7)*	94.9	(±2.3)*
Lancaster, Nebraska	93.8	(±3.4)*	89.6	(±4.3)	92.6	(±3.5)*	91.1	(±4.1)*	93.1	(±3.5)*	94.7	(±2.4)*	92.3	(±3.9)*
Sarpy, Nebraska	91.7	(±4.4)*	89.7	(±5.1)	90.5	(±4.6)*	92.5	(±3.9)*	93.1	(±4.0)*	NA	NA	NA	NA
Clark, Nevada	84.8	(±4.0)	88.4	(±3.4)	88.6	(±2.9)	87.0	(±3.5)	87.7	(±3.1)	84.9	(±3.7)	86.4	(±3.5)

See table footnotes on page 32.

TABLE 7. (Continued) Estimated vaccination coverage with ≥ 1 dose of MMR vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Washoe, Nevada	91.7	(± 3.9)*	92.0	(± 3.8)*	92.1	(± 3.2)*	92.7	(± 3.8)*	94.2	(± 3.0)*	91.8	(± 3.5)*	92.9	(± 3.6)*
Grafton, New Hampshire	NA	NA	94.1	(± 3.2)*	93.3	(± 3.3)*	92.3	(± 4.1)*	95.3	(± 2.9)*	NA	NA	96.3	(± 1.6)*
Hillsborough, New Hampshire	94.4	(± 2.5)*	93.9	(± 2.7)*	94.1	(± 2.7)*	93.4	(± 3.2)*	94.2	(± 2.8)*	93.3	(± 2.8)*	94.0	(± 2.9)*
Merrimack, New Hampshire	92.5	(± 3.7)*	94.2	(± 3.2)*	92.1	(± 4.1)*	93.1	(± 3.6)*	92.0	(± 3.8)*	92.3	(± 3.8)*	92.6	(± 4.5)*
Rockingham, New Hampshire	93.5	(± 3.1)*	93.6	(± 3.0)*	93.0	(± 3.1)*	94.0	(± 2.9)*	93.7	(± 3.2)*	92.3	(± 3.3)*	93.1	(± 3.5)*
Strafford, New Hampshire	92.8	(± 3.8)*	92.7	(± 4.1)*	89.0	(± 5.0)*	92.6	(± 3.8)*	93.4	(± 3.8)*	92.6	(± 3.7)*	92.4	(± 4.2)*
Bergen, New Jersey	94.0	(± 3.5)*	95.5	(± 2.5)*	91.9	(± 3.8)*	91.7	(± 4.1)*	95.3	(± 2.7)*	93.3	(± 3.4)*	93.6	(± 3.6)*
Burlington, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.4	(± 5.0)*
Camden, New Jersey	NA	NA	91.8	(± 4.5)*	89.0	(± 5.0)*	92.6	(± 4.0)*	NA	NA	92.2	(± 4.1)*	92.8	(± 4.2)*
Essex, New Jersey	93.8	(± 2.5)*	92.3	(± 2.9)*	91.5	(± 3.5)*	89.0	(± 4.6)*	94.0	(± 2.7)*	89.8	(± 4.4)*	91.0	(± 4.2)*
Hudson, New Jersey	89.6	(± 5.3)*	91.1	(± 4.7)*	91.6	(± 4.3)*	90.0	(± 5.1)*	93.7	(± 3.6)*	NA	NA	91.3	(± 4.7)*
Middlesex, New Jersey	NA	NA	93.2	(± 3.6)*	93.3	(± 3.4)*	92.2	(± 4.0)*	94.2	(± 3.5)*	92.3	(± 4.0)*	92.9	(± 3.8)*
Monmouth, New Jersey	NA	NA	93.9	(± 3.4)*	92.5	(± 3.8)*	93.0	(± 3.7)*	NA	NA	92.3	(± 3.8)*	93.2	(± 3.7)*
Morris, New Jersey	93.6	(± 3.4)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ocean, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	92.1	(± 4.1)*	91.1	(± 4.5)*	91.4	(± 4.6)*
Passaic, New Jersey	NA	NA	NA	NA	90.6	(± 4.5)*	92.0	(± 4.4)*	92.7	(± 3.8)*	NA	NA	NA	NA
Union, New Jersey	NA	NA	91.9	(± 4.1)*	92.8	(± 3.5)*	93.1	(± 3.7)*	92.5	(± 3.8)*	NA	NA	91.5	(± 4.6)*
Bernalillo, New Mexico	88.5	(± 4.4)*	87.2	(± 4.5)*	86.6	(± 4.8)*	90.4	(± 3.9)*	94.2	(± 2.7)*	90.6	(± 4.0)*	91.9	(± 3.5)*
Dona Ana, New Mexico	84.4	(± 7.4)*	90.5	(± 4.7)*	90.8	(± 4.3)*	89.9	(± 4.8)*	92.5	(± 4.2)*	NA	NA	92.1	(± 4.0)*
Sandoval, New Mexico	NA	NA	NA	NA	NA	NA	NA	NA	91.9	(± 4.2)*	NA	NA	90.7	(± 4.8)*
San Juan, New Mexico	NA	NA	NA	NA	90.3	(± 4.6)*	91.9	(± 3.9)*	92.5	(± 4.0)*	91.2	(± 4.5)*	88.4	(± 5.7)*
Santa Fe, New Mexico	91.4	(± 4.4)*	NA	NA	89.8	(± 4.6)*	NA	NA	93.0	(± 3.5)*	NA	NA	NA	NA
Bronx, New York	89.4	(± 5.3)*	88.5	(± 5.5)*	91.0	(± 4.3)*	92.1	(± 3.7)*	93.6	(± 3.3)*	90.9	(± 4.7)*	91.6	(± 4.0)*
Erie, New York	90.6	(± 4.8)*	93.6	(± 3.4)*	91.8	(± 4.1)*	90.6	(± 4.5)*	95.1	(± 2.4)*	92.0	(± 4.1)*	NA	NA
Kings, New York	88.9	(± 5.1)*	90.5	(± 4.4)*	92.5	(± 3.1)*	93.2	(± 3.1)*	93.6	(± 2.9)*	92.0	(± 3.2)*	91.0	(± 3.2)*
Monroe, New York	NA	NA	93.0	(± 4.1)*	91.3	(± 4.8)*	93.6	(± 3.4)*	94.2	(± 3.3)*	94.2	(± 3.0)*	93.4	(± 4.1)*
Nassau, New York	93.7	(± 3.7)*	96.5	(± 2.0)*	90.9	(± 3.9)*	94.0	(± 3.1)*	94.3	(± 3.1)*	94.6	(± 3.2)*	94.0	(± 2.9)*
New York, New York	95.4	(± 3.4)*	95.8	(± 2.1)*	95.1	(± 2.9)*	90.9	(± 4.6)*	94.3	(± 3.0)*	94.2	(± 3.0)*	93.6	(± 3.1)*
Queens, New York	92.1	(± 4.1)*	93.2	(± 3.3)*	91.9	(± 3.3)*	92.7	(± 3.2)*	95.3	(± 2.1)*	92.3	(± 3.7)*	94.5	(± 2.7)*
Suffolk, New York	93.2	(± 3.5)*	93.8	(± 3.3)*	92.1	(± 3.7)*	94.1	(± 3.0)*	94.3	(± 3.1)*	91.1	(± 4.1)*	90.6	(± 4.1)*
Westchester, New York	NA	NA	94.2	(± 3.0)*	93.1	(± 3.7)*	91.6	(± 4.1)*	95.1	(± 2.9)*	93.6	(± 3.6)*	NA	NA
Durham, North Carolina	NA	NA	NA	NA	NA	NA	NA	NA	95.1	(± 2.7)*	NA	NA	NA	NA
Guilford, North Carolina	NA	NA	92.0	(± 4.1)*	91.6	(± 4.3)*	NA	NA	NA	NA	NA	NA	NA	NA
Mecklenburg, North Carolina	92.0	(± 4.2)*	92.5	(± 4.3)*	92.3	(± 3.9)*	93.4	(± 3.6)*	94.1	(± 3.4)*	94.0	(± 3.1)*	94.1	(± 3.2)*
Wake, North Carolina	93.9	(± 3.4)*	93.1	(± 4.1)*	92.5	(± 3.7)*	93.3	(± 3.5)*	94.7	(± 2.9)*	94.6	(± 3.0)*	94.3	(± 2.9)*
Burleigh, North Dakota	91.4	(± 4.4)*	92.5	(± 3.6)*	90.8	(± 4.2)*	92.1	(± 4.3)*	92.2	(± 4.0)*	91.2	(± 4.1)*	94.2	(± 3.0)*
Cass, North Dakota	92.4	(± 3.5)*	91.4	(± 3.4)*	90.8	(± 3.8)*	93.7	(± 3.3)*	95.1	(± 2.5)*	94.6	(± 2.6)*	93.5	(± 3.2)*
Grand Forks, North Dakota	90.6	(± 4.5)*	88.1	(± 5.1)*	90.4	(± 4.2)*	92.3	(± 3.8)*	93.3	(± 3.6)*	91.3	(± 4.3)*	92.0	(± 4.8)*
Ward, North Dakota	92.3	(± 4.1)*	86.5	(± 5.5)*	89.8	(± 4.2)*	91.7	(± 4.0)*	93.0	(± 3.7)*	90.4	(± 4.5)*	91.0	(± 4.5)*
Cuyahoga, Ohio	91.5	(± 2.8)*	91.2	(± 2.4)*	88.3	(± 2.8)*	92.7	(± 2.5)*	95.3	(± 1.7)*	93.7	(± 2.1)*	92.8	(± 3.5)*
Franklin, Ohio	91.4	(± 2.5)*	91.0	(± 2.4)*	92.7	(± 2.1)*	93.7	(± 1.9)*	94.5	(± 2.0)*	94.0	(± 3.0)*	92.4	(± 3.6)*
Hamilton, Ohio	91.7	(± 4.1)*	91.9	(± 4.0)*	89.7	(± 4.7)*	94.5	(± 2.7)*	93.3	(± 3.6)*	93.4	(± 3.3)*	94.1	(± 3.4)*
Lucas, Ohio	NA	NA	92.2	(± 4.2)*	NA	NA	92.0	(± 3.8)*	NA	NA	NA	NA	NA	NA
Montgomery, Ohio	NA	NA	NA	NA	NA	NA	91.5	(± 4.2)*	NA	NA	NA	NA	NA	NA
Cleveland, Oklahoma	NA	NA	91.5	(± 4.7)*	NA	NA	93.1	(± 3.8)*	91.9	(± 4.3)*	91.9	(± 4.1)*	89.1	(± 5.3)*
Oklahoma, Oklahoma	87.4	(± 5.4)*	89.1	(± 4.3)*	90.4	(± 3.9)*	89.6	(± 4.2)*	91.5	(± 3.8)*	91.2	(± 3.8)*	89.2	(± 4.8)*
Tulsa, Oklahoma	91.0	(± 4.4)*	93.4	(± 3.3)*	90.9	(± 3.9)*	93.8	(± 3.2)*	93.3	(± 3.4)*	91.9	(± 3.6)*	90.7	(± 4.1)*
Clackamas, Oregon	90.4	(± 4.6)*	89.6	(± 4.5)*	93.6	(± 3.1)*	91.6	(± 4.2)*	93.1	(± 3.7)*	NA	NA	89.6	(± 5.2)*
Lane, Oregon	90.8	(± 4.6)*	92.2	(± 4.3)*	92.2	(± 4.0)*	89.7	(± 4.8)*	94.1	(± 3.3)*	91.4	(± 4.3)*	91.2	(± 4.7)*
Marion, Oregon	91.2	(± 4.7)*	90.1	(± 4.6)*	91.2	(± 4.1)*	91.1	(± 4.4)*	92.3	(± 4.1)*	89.6	(± 4.7)*	91.4	(± 4.8)*
Multnomah, Oregon	90.9	(± 3.9)*	87.6	(± 4.6)*	90.1	(± 4.2)*	89.0	(± 4.0)*	93.9	(± 2.9)*	87.9	(± 4.7)*	89.3	(± 4.5)*
Washington, Oregon	87.6	(± 4.9)*	91.4	(± 4.0)*	90.2	(± 4.1)*	92.8	(± 3.5)*	92.6	(± 3.3)*	89.7	(± 4.4)*	92.6	(± 4.4)*
Allegheny, Pennsylvania	92.8	(± 3.7)*	92.8	(± 3.5)*	91.7	(± 4.1)*	92.5	(± 3.8)*	95.0	(± 2.5)*	94.3	(± 2.2)*	92.4	(± 3.8)*
Delaware, Pennsylvania	NA	NA	92.7	(± 4.1)*	NA	NA	NA	NA	93.9	(± 3.7)*	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.1	(± 5.0)*
Montgomery, Pennsylvania	95.0	(± 2.9)*	95.3	(± 2.7)*	93.8	(± 3.1)*	NA	NA	94.7	(± 3.3)*	NA	NA	94.4	(± 3.2)*
Philadelphia, Pennsylvania	89.4	(± 3.1)*	92.2	(± 2.4)*	92.5	(± 2.4)*	91.1	(± 2.4)*	93.1	(± 2.3)*	94.0	(± 2.1)*	92.4	(± 2.4)*
Kent, Rhode Island	92.9	(± 3.9)*	93.7	(± 3.2)*	92.5	(± 3.9)*	94.2	(± 3.0)*	93.1	(± 3.6)*	94.5	(± 2.7)*	92.2	(± 4.0)*
Newport, Rhode Island	94.4	(± 3.2)*	92.4	(± 4.1)*	89.5	(± 4.8)*	93.5	(± 3.6)*	NA	NA	92.2	(± 3.8)*	NA	NA
Providence, Rhode Island	93.7	(± 2.5)*	94.8	(± 2.1)*	93.5	(± 2.6)*	93.9	(± 2.3)*	95.0	(± 2.1)*	94.6	(± 2.2)*	92.9	(± 2.8)*
Washington, Rhode Island	95.4	(± 2.4)*	93.4	(± 3.5)*	91.7	(± 3.8)*	93.5	(± 3.6)*	93.7	(± 3.2)*	94.7	(± 2.7)*	94.1	(± 3.6)*
Charleston, South Carolina	93.5	(± 3.4)*	89.6	(± 4.7)*	90.0	(± 4.7)*	92.9	(± 3.8)*	93.5	(± 3.5)*	92.4	(± 4.3)*	93.5	(± 3.7)*
Greenville, South Carolina	92.2	(± 4.1)*	91.0	(± 4.3)*	91.6	(± 4.0)*	94.3	(± 2.8)*	95.2	(± 2.3)*	91.9	(± 4.1)*	89.2	(± 5.0)*
Horry, South Carolina	NA	NA	NA	NA	NA	NA	92.8	(± 3.8)*	NA	NA	NA	NA	90.6	(± 5.1)*
Richland, South Carolina	NA	NA	92.4	(± 4.1)*	91.7	(± 4.4)*	92.5	(± 4.4)*	NA	NA	93.6	(± 3.3)*	92.2	(± 4.2)*
Spartanburg, South Carolina	89.7	(± 5.4)*	89.1	(± 5.3)*	92.1	(± 4.0)*	NA	NA	NA	NA	92.3	(± 4.1)*	91.9	(± 4.1)*
York, South Carolina	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	89.1	(± 5.0)*
Minnehaha, South Dakota	91.0	(± 3.9)*	90.8	(± 4.0)*	90.7	(± 4.1)*	92.1	(± 3.4)*	92.7	(± 3.5)*	92.6	(± 3.5)*	94.6	(± 2

TABLE 7. (Continued) Estimated vaccination coverage with ≥1 dose of MMR vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Pennington, South Dakota	91.2	(±4.7)*	91.9	(±4.3)*	92.1	(±3.9)*	93.9	(±3.2)*	93.3	(±3.6)*	92.9	(±3.3)*	92.0	(±4.4)*
Davidson, Tennessee†	90.5	(±2.5)*	92.1	(±2.3)*	88.1	(±2.9)	91.7	(±2.5)*	94.1	(±2.0)*	92.6	(±3.4)*	94.6	(±2.8)*
Hamilton, Tennessee	NA	NA	89.8	(±4.7)	89.2	(±4.8)	92.7	(±4.1)*	NA	NA	NA	NA	NA	NA
Knox, Tennessee	91.4	(±4.3)*	93.3	(±4.4)*	90.8	(±4.4)*	93.2	(±3.8)*	93.2	(±3.4)*	93.7	(±3.6)*	93.2	(±4.1)*
Shelby, Tennessee†	87.3	(±3.0)	87.3	(±2.9)	90.4	(±2.4)*	89.4	(±3.0)	92.5	(±2.2)*	88.0	(±3.2)	92.6	(±4.0)*
Bexar, Texas	89.4	(±2.9)	90.9	(±2.6)*	86.7	(±3.1)	91.0	(±2.5)*	91.7	(±2.6)*	89.5	(±2.8)	91.8	(±2.4)*
Collin, Texas	NA	NA	NA	NA	NA	NA	95.9	(±1.5)*	NA	NA	93.7	(±3.2)*	NA	NA
Dallas, Texas	89.0	(±3.0)	86.9	(±3.0)	87.7	(±2.8)	88.8	(±2.5)	91.0	(±2.4)*	90.1	(±3.1)*	90.8	(±2.5)*
El Paso, Texas†	83.5	(±3.7)	85.6	(±2.9)	88.1	(±2.7)	88.1	(±2.9)	91.1	(±2.6)*	89.3	(±2.7)	91.3	(±2.5)*
Harris, Texas†	87.8	(±3.1)	86.5	(±3.2)	87.5	(±2.8)	88.7	(±3.0)	87.9	(±3.3)	88.8	(±3.5)	92.2	(±2.4)*
Hidalgo, Texas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.4	(±5.2)*	NA	NA
Tarrant, Texas	89.8	(±5.0)	90.0	(±5.0)	89.5	(±4.9)	90.9	(±4.8)*	93.6	(±3.4)*	92.3	(±3.8)*	91.5	(±4.4)*
Travis, Texas	NA	NA	NA	NA	92.0	(±4.1)*	NA	NA	93.5	(±3.9)*	91.5	(±4.3)*	NA	NA
Cache, Utah	NA	NA	91.1	(±4.5)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Davis, Utah	89.3	(±4.8)	90.9	(±4.4)*	90.3	(±4.4)*	93.0	(±3.6)*	89.8	(±4.7)	92.4	(±3.7)*	91.6	(±4.2)*
Salt Lake, Utah	90.3	(±3.3)*	89.9	(±3.4)	91.1	(±3.3)*	92.1	(±3.1)*	91.3	(±3.4)*	92.3	(±3.6)*	92.2	(±3.6)*
Utah, Utah	85.2	(±5.5)	85.9	(±4.8)	89.6	(±4.1)	92.0	(±3.4)*	91.1	(±3.6)*	89.1	(±4.8)	89.4	(±4.7)
Weber, Utah	86.1	(±6.0)	91.3	(±4.1)*	89.6	(±4.8)	93.1	(±3.8)*	92.5	(±4.0)*	NA	NA	NA	NA
Addison, Vermont	93.9	(±3.8)*	95.0	(±2.9)*	NA	NA	92.6	(±3.8)*	94.9	(±2.9)*	NA	NA	NA	NA
Bennington, Vermont	NA	NA	92.1	(±4.7)*	91.2	(±4.4)*	NA	NA	NA	NA	NA	NA	NA	NA
Chittenden, Vermont	94.8	(±2.7)*	94.5	(±2.5)*	92.8	(±3.5)*	93.1	(±3.0)*	95.9	(±1.9)*	94.8	(±2.4)*	92.6	(±3.3)*
Franklin, Vermont	92.0	(±4.2)*	94.8	(±2.4)*	91.9	(±4.2)*	94.3	(±2.9)*	94.6	(±2.8)*	NA	NA	93.7	(±3.4)*
Lamoille, Vermont	NA	NA	NA	NA	NA	NA	NA	NA	93.3	(±3.8)*	NA	NA	NA	NA
Orange, Vermont	90.8	(±5.2)*	94.0	(±3.3)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rutland, Vermont	89.2	(±5.0)	92.4	(±4.2)*	93.5	(±3.0)*	93.2	(±3.6)*	93.0	(±3.8)*	NA	NA	NA	NA
Washington, Vermont	92.7	(±4.1)*	92.7	(±3.8)*	91.1	(±4.7)*	95.5	(±1.8)*	93.6	(±3.4)*	91.8	(±3.9)*	91.7	(±4.2)*
Windham, Vermont	NA	NA	93.1	(±3.9)*	91.5	(±4.2)*	92.8	(±3.8)*	NA	NA	NA	NA	93.1	(±3.8)*
Windsor, Vermont	92.5	(±4.0)*	91.3	(±4.2)*	91.7	(±4.2)*	93.1	(±3.7)*	94.5	(±3.2)*	91.6	(±5.2)*	NA	NA
Fairfax, Virginia	92.4	(±3.5)*	91.0	(±3.9)*	90.8	(±4.2)*	91.7	(±4.1)*	94.5	(±3.1)*	95.1	(±2.5)*	92.8	(±3.3)*
Loudoun, Virginia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	92.4	(±4.1)*
Virginia Beach, Virginia	NA	NA	88.1	(±5.4)	90.4	(±4.6)*	NA	NA	NA	NA	NA	NA	92.4	(±4.3)*
Clark, Washington	90.7	(±5.1)*	91.1	(±4.5)*	90.0	(±4.5)	90.9	(±4.5)*	92.1	(±4.2)*	91.3	(±4.4)*	NA	NA
King, Washington	93.6	(±2.0)*	92.9	(±2.0)*	89.0	(±2.5)	91.0	(±2.3)*	94.7	(±1.7)*	90.1	(±3.0)*	90.8	(±3.7)*
Kitsap, Washington	NA	NA	NA	NA	90.9	(±4.4)*	NA	NA	92.1	(±4.1)*	NA	NA	90.0	(±4.7)
Pierce, Washington	90.7	(±4.6)*	89.6	(±4.6)	88.8	(±4.2)	91.9	(±4.1)*	93.6	(±3.3)*	91.4	(±4.1)*	87.3	(±5.5)
Snohomish, Washington	89.5	(±4.9)	88.9	(±4.6)	89.6	(±4.1)	90.3	(±4.1)*	91.7	(±4.0)*	90.4	(±4.3)*	91.4	(±4.8)*
Spokane, Washington	90.7	(±5.1)*	91.5	(±4.1)*	89.4	(±4.5)	86.3	(±5.6)	89.9	(±4.7)	NA	NA	91.8	(±4.5)*
Thurston, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.4	(±4.4)*
Whatcom, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	92.0	(±4.1)*
Yakima, Washington	88.4	(±6.1)	87.7	(±5.6)	NA	NA	91.0	(±5.1)*	NA	NA	NA	NA	NA	NA
Kanawha, West Virginia	87.7	(±5.4)	93.6	(±3.4)*	91.4	(±4.1)*	NA	NA	93.7	(±3.4)*	90.2	(±4.4)*	92.3	(±4.1)*
Brown, Wisconsin	NA	NA	NA	NA	NA	NA	92.2	(±4.1)*	NA	NA	NA	NA	NA	NA
Dane, Wisconsin	93.6	(±3.4)*	93.8	(±3.5)*	92.1	(±3.8)*	93.8	(±3.3)*	95.2	(±2.4)*	94.7	(±2.8)*	92.6	(±4.2)*
Milwaukee, Wisconsin	90.6	(±2.7)*	90.3	(±2.5)*	88.9	(±2.7)	89.9	(±2.7)	94.7	(±1.9)*	91.2	(±2.9)*	93.1	(±3.6)*
Outagamie, Wisconsin	NA	NA	91.5	(±4.6)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Waukesha, Wisconsin	93.2	(±3.6)*	92.9	(±3.6)*	94.7	(±2.3)*	91.9	(±4.0)*	94.8	(±3.0)*	94.2	(±3.0)*	NA	NA
Albany, Wyoming	NA	NA	92.8	(±3.9)*	92.4	(±3.8)*	NA	NA	93.7	(±3.6)*	NA	NA	NA	NA
Campbell, Wyoming	NA	NA	91.3	(±4.6)*	88.9	(±5.0)	93.6	(±3.4)*	90.4	(±4.3)*	92.6	(±3.7)*	92.2	(±4.0)*
Fremont, Wyoming	NA	NA	89.2	(±5.5)	88.7	(±5.1)	92.9	(±4.1)*	92.2	(±4.7)*	NA	NA	NA	NA
Laramie, Wyoming	89.5	(±4.5)	86.9	(±4.8)	91.0	(±4.2)*	90.4	(±4.4)*	90.2	(±4.1)*	92.5	(±3.7)*	88.5	(±4.9)
Natrona, Wyoming	90.9	(±4.6)*	90.8	(±3.9)*	91.0	(±3.9)*	91.7	(±4.1)*	94.0	(±3.2)*	90.9	(±4.3)*	90.8	(±4.4)*
Sweetwater, Wyoming	89.6	(±5.1)	83.2	(±6.2)	91.6	(±4.0)*	92.1	(±4.0)*	NA	NA	89.7	(±4.8)	90.0	(±4.7)
Uinta, Wyoming	NA	NA	NA	NA	91.0	(±4.5)*	NA	NA	NA	NA	NA	NA	NA	NA
United States†	90.3	(±0.5)*	91.0	(±0.5)*	90.7	(±0.5)*	91.4	(±0.5)*	93.2	(±0.4)*	91.9	(±0.5)*	92.2	(±0.5)*
Sample size, no.	37,282		44,855		45,623		45,052		43,308		38,607		35,447	
All selected counties	90.4	(±0.7)*	91.2	(±0.6)*	90.9	(±0.6)*	91.6	(±0.6)*	93.3	(±0.5)*	91.8	(±0.6)*	92.1	92.1
Sample size, no.	23,014		29,227		30,362		29,851		28,845		23,485		20,552	
Range, %	82.8–95.7		83.2–96.5		84.9–95.3		85.9–95.9		87.7–96		84.9–96.5		86.4–96.6	

Abbreviations: CI = confidence interval; MMR = measles, mumps, and rubella; NA = not available.

* Estimate exceeds the *Healthy People 2010* objective of 90% vaccination coverage.† Estimates increased significantly between the first and last biennial periods ($p < 0.05$).

TABLE 8. Estimated vaccination coverage with ≥3 doses of Hib vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Jefferson, Alabama	94.0	(±2.1)*	95.3	(±1.7)*	95.2	(±2.0)*	94.5	(±2.1)*	95.4	(±1.8)*	96.2	(±1.5)*	93.7	(±3.8)*
Madison, Alabama	NA	NA	92.8	(±3.7)*	94.4	(±3.3)*	NA	NA	94.5	(±2.8)*	93.8	(±3.3)*	92.1	(±4.8)*
Mobile, Alabama	83.3	(±7.4)	91.4	(±4.1)*	93.4	(±3.6)*	93.1	(±3.7)*	94.3	(±3.1)*	92.6	(±3.7)*	92.0	(±4.8)*
Montgomery, Alabama	NA	NA	92.3	(±4.1)*	93.5	(±3.8)*	NA	NA	NA	NA	NA	NA	NA	NA
Shelby, Alabama	NA	NA	NA	NA	94.1	(±3.7)*	94.2	(±3.5)*	94.3	(±3.1)*	NA	NA	92.9	(±4.2)*
Anchorage, Alaska	NA	NA	NA	NA	89.9	(±3.3)	92.4	(±3.0)*	91.9	(±2.7)*	90.9	(±3.6)*	90.6	(±4.3)*
Fairbanks North Star, Alaska	NA	NA	NA	NA	92.8	(±3.5)*	91.9	(±3.7)*	88.7	(±4.1)	89.8	(±4.3)	87.0	(±6.2)
Kenai Peninsula, Alaska	NA	NA	NA	NA	93.9	(±3.5)*	NA	NA	NA	NA	NA	NA	NA	NA
Matanuska-Susitna, Alaska	NA	NA	NA	NA	92.6	(±3.8)*	91.3	(±4.3)*	90.9	(±4.3)*	87.6	(±5.2)	87.8	(±5.5)
Cochise, Arizona	NA	NA	92.0	(±4.0)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Coconino, Arizona	NA	NA	91.5	(±4.2)*	NA	NA	NA	NA	92.3	(±4.0)*	NA	NA	NA	NA
Maricopa, Arizona	88.8	(±3.1)	90.1	(±2.4)*	90.8	(±2.6)*	91.4	(±2.4)*	94.5	(±1.6)*	92.0	(±2.4)*	90.9	(±3.3)*
Mohave, Arizona	NA	NA	NA	NA	85.4	(±6.3)	90.1	(±4.8)*	NA	NA	NA	NA	NA	NA
Pima, Arizona	90.1	(±4.0)*	90.5	(±3.3)*	93.0	(±3.0)*	90.7	(±3.4)*	92.2	(±2.8)*	92.3	(±3.4)*	92.3	(±4.3)*
Pinal, Arizona	88.6	(±5.7)	91.6	(±4.4)*	91.5	(±4.8)*	93.6	(±3.2)*	89.9	(±4.6)	89.3	(±5.6)	NA	NA
Yavapai, Arizona	NA	NA	NA	NA	NA	NA	92.7	(±3.9)*	91.8	(±3.8)*	NA	NA	NA	NA
Yuma, Arizona	87.5	(±6.5)	90.8	(±5.2)*	90.8	(±4.8)*	91.6	(±4.5)*	93.6	(±2.9)*	92.3	(±4.2)*	NA	NA
Benton, Arkansas	NA	NA	89.1	(±4.8)	NA	NA	93.0	(±3.8)*	93.8	(±3.2)*	93.9	(±3.4)*	93.4	(±4.0)*
Pulaski, Arkansas	88.8	(±5.3)	92.2	(±3.8)*	90.7	(±4.3)*	93.9	(±3.3)*	95.7	(±2.4)*	94.3	(±3.1)*	89.5	(±5.6)
Washington, Arkansas	91.8	(±5.0)*	92.1	(±3.8)*	NA	NA	92.1	(±4.0)*	NA	NA	NA	NA	88.3	(±6.0)
Alameda, California	89.5	(±5.1)	NA	NA	94.2	(±3.2)*	93.2	(±4.1)*	93.6	(±3.1)*	92.9	(±2.9)*	90.2	(±5.2)*
Los Angeles, California†	90.4	(±3.1)*	91.6	(±2.5)*	89.9	(±2.7)	89.9	(±3.1)	92.3	(±2.1)*	92.5	(±2.3)*	94.1	(±1.9)*
Orange, California	92.5	(±3.8)*	92.2	(±3.6)*	91.1	(±4.6)*	94.3	(±3.2)*	92.6	(±3.4)*	93.7	(±3.3)*	93.4	(±3.9)*
Riverside, California	NA	NA	NA	NA	89.5	(±5.1)	90.2	(±4.7)*	89.4	(±4.4)	NA	NA	89.5	(±5.8)
San Bernardino, California	NA	NA	88.9	(±4.7)	93.4	(±3.7)*	89.8	(±4.7)	91.8	(±3.8)*	89.1	(±3.6)	91.3	(±3.8)*
San Diego, California	89.7	(±2.9)	91.6	(±2.2)*	91.7	(±2.4)*	93.6	(±2.0)*	92.5	(±2.3)*	93.3	(±2.6)*	92.9	(±4.0)*
San Mateo, California	NA	NA	93.5	(±3.3)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Santa Clara, California	91.8	(±2.5)*	93.0	(±2.0)*	91.7	(±2.3)*	93.8	(±1.8)*	94.6	(±2.1)*	93.7	(±2.8)*	NA	NA
Adams, Colorado	91.3	(±4.6)*	91.7	(±3.9)*	91.6	(±4.2)*	93.1	(±3.7)*	92.9	(±3.4)*	NA	NA	NA	NA
Arapahoe, Colorado	94.0	(±3.3)*	91.8	(±3.8)*	95.4	(±2.2)*	91.1	(±4.0)*	93.7	(±3.1)*	NA	NA	93.5	(±4.1)*
Boulder, Colorado	NA	NA	94.9	(±2.7)*	94.6	(±3.0)*	93.8	(±3.3)*	91.6	(±3.7)*	93.6	(±3.5)*	90.3	(±5.3)*
Denver, Colorado	92.2	(±4.3)*	90.6	(±4.1)*	92.6	(±3.9)*	93.5	(±3.3)*	94.3	(±2.7)*	NA	NA	NA	NA
Douglas, Colorado	NA	NA	NA	NA	93.9	(±3.9)*	94.6	(±3.3)*	94.3	(±2.8)*	NA	NA	NA	NA
El Paso, Colorado	92.7	(±4.0)*	94.0	(±3.1)*	90.3	(±4.3)*	90.7	(±4.2)*	90.5	(±3.9)*	92.6	(±3.8)*	87.0	(±5.9)
Jefferson, Colorado	93.3	(±3.4)*	93.8	(±3.2)*	93.2	(±3.9)*	94.2	(±3.0)*	93.1	(±3.2)*	95.0	(±2.7)*	90.1	(±5.4)*
Larimer, Colorado	NA	NA	NA	NA	91.7	(±4.2)*	94.3	(±3.2)*	NA	NA	93.0	(±3.9)*	NA	NA
Weld, Colorado	NA	NA	NA	NA	91.7	(±4.5)*	93.4	(±3.7)*	90.7	(±4.1)*	NA	NA	91.1	(±5.2)*
Fairfield, Connecticut	94.2	(±3.3)*	94.4	(±2.6)*	94.8	(±2.7)*	96.5	(±1.7)*	95.8	(±1.5)*	95.4	(±2.1)*	93.6	(±3.4)*
Hartford, Connecticut†	95.8	(±1.6)*	95.3	(±2.1)*	94.2	(±3.1)*	96.2	(±1.4)*	95.8	(±1.9)*	95.5	(±2.3)*	90.3	(±4.5)*
New Haven, Connecticut	93.2	(±3.4)*	94.4	(±2.6)*	94.8	(±2.8)*	91.7	(±3.6)*	95.6	(±1.8)*	94.3	(±2.9)*	90.5	(±4.3)*
New London, Connecticut	94.1	(±3.3)*	93.7	(±3.1)*	92.8	(±3.8)*	NA	NA	94.2	(±3.1)*	94.2	(±3.2)*	87.1	(±6.2)
Kent, Delaware	94.3	(±2.9)*	93.8	(±2.9)*	94.9	(±2.7)*	93.9	(±3.1)*	93.7	(±3.0)*	93.1	(±3.5)*	91.0	(±4.8)*
New Castle, Delaware	92.5	(±2.8)*	94.5	(±2.0)*	93.4	(±2.4)*	91.5	(±2.8)*	94.8	(±2.2)*	93.5	(±2.6)*	93.5	(±2.7)*
Sussex, Delaware	92.0	(±3.9)*	92.5	(±3.5)*	95.0	(±2.8)*	93.6	(±3.5)*	93.4	(±3.1)*	94.0	(±3.0)*	86.4	(±4.9)
District of Columbia	89.0	(±3.3)	91.3	(±2.5)*	91.0	(±2.6)*	91.2	(±2.6)*	95.4	(±1.7)*	94.6	(±2.2)*	92.1	(±2.6)*
Broward, Florida	92.7	(±4.2)*	91.1	(±4.0)*	95.0	(±2.5)*	93.7	(±3.6)*	94.0	(±2.9)*	92.5	(±3.9)*	93.5	(±4.1)*
Duval, Florida	92.4	(±2.5)*	93.8	(±2.1)*	93.5	(±2.1)*	93.0	(±2.8)*	93.0	(±2.2)*	94.9	(±1.7)*	NA	NA
Hillsborough, Florida	90.6	(±5.2)*	91.2	(±4.3)*	93.3	(±3.8)*	93.2	(±3.7)*	93.4	(±3.1)*	91.0	(±4.3)*	NA	NA
Dade, Florida	NA	NA	NA	NA	94.1	(±2.2)*	93.5	(±2.0)*	95.9	(±1.4)*	96.1	(±1.3)*	93.3	(±2.6)*
Orange, Florida	NA	NA	NA	NA	92.7	(±4.1)*	NA	NA	93.4	(±3.5)*	NA	NA	93.3	(±3.3)*
Palm Beach, Florida	NA	NA	92.1	(±3.9)*	94.5	(±3.1)*	94.6	(±3.0)*	93.9	(±3.1)*	92.9	(±3.9)*	92.9	(±4.8)*
Pinellas, Florida	NA	NA	93.1	(±3.9)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobb, Georgia	91.9	(±4.2)*	93.3	(±3.4)*	93.6	(±3.6)*	93.8	(±3.3)*	94.5	(±2.8)*	95.1	(±2.5)*	88.5	(±5.2)
DeKalb, Georgia	90.4	(±4.5)*	91.4	(±3.5)*	93.3	(±2.8)*	92.9	(±2.7)*	93.3	(±2.3)*	92.3	(±3.2)*	94.4	(±3.2)*
Fulton, Georgia	91.6	(±3.9)*	91.2	(±3.2)*	92.9	(±2.7)*	92.9	(±2.7)*	92.9	(±2.4)*	94.4	(±2.5)*	91.1	(±4.8)*
Gwinnett, Georgia	93.8	(±3.6)*	93.8	(±3.3)*	95.0	(±2.6)*	93.8	(±3.5)*	92.6	(±3.3)*	95.0	(±2.6)*	86.8	(±6.8)
Hawaii, Hawaii	91.9	(±4.3)*	92.8	(±3.5)*	93.0	(±3.6)*	90.3	(±5.3)*	93.5	(±3.0)*	91.6	(±3.9)*	91.2	(±4.6)*
Honolulu, Hawaii	91.1	(±3.4)*	91.5	(±2.5)*	92.7	(±2.5)*	90.8	(±3.2)*	91.6	(±2.4)*	92.4	(±2.6)*	91.0	(±3.1)*
Maui, Hawaii	89.2	(±5.1)	92.2	(±3.9)*	94.3	(±3.4)*	90.5	(±4.9)*	93.4	(±3.2)*	92.8	(±4.0)*	94.0	(±3.6)*
Ada, Idaho	89.9	(±4.2)	92.1	(±3.1)*	92.6	(±3.4)*	93.1	(±3.2)*	93.4	(±3.0)*	94.5	(±2.8)*	85.8	(±5.4)
Bannock, Idaho	NA	NA	92.5	(±3.9)*	91.9	(±4.2)*	92.6	(±3.9)*	NA	NA	NA	NA	NA	NA
Bonneville, Idaho	89.7	(±4.7)	91.3	(±3.9)*	94.4	(±3.3)*	93.7	(±3.4)*	93.2	(±3.3)*	92.9	(±3.7)*	84.4	(±6.9)
Canyon, Idaho	NA	NA	90.6	(±4.1)*	90.4	(±4.4)*	89.4	(±4.7)	90.9	(±4.4)*	88.6	(±4.9)	86.2	(±6.0)
Kootenai, Idaho	91.9	(±4.5)*	92.4	(±4.0)*	95.1	(±2.7)*	91.1	(±4.5)*	NA	NA	NA	NA	NA	NA
Twin Falls, Idaho	NA	NA	91.3	(±4.2)*	NA	NA	93.1	(±4.2)*	NA	NA	NA	NA	NA	NA
Cook, Illinois	91.0	(±2.9)*	90.1	(±2.7)*	91.0	(±2.5)*	93.3	(±1.9)*	93.1	(±2.1)*	93.6	(±2.0)*	90.6	(±2.7)*
DuPage, Illinois	94.3	(±3.5)*	93.6	(±3.1)*	93.9	(±3.7)*	95.3	(±2.6)*	96.8	(±0.7)*	NA	NA	91.9	(±4.3)*
Lake, Illinois	92.1	(±4.2)*	95.1	(±2.5)*	92.6	(±3.9)*	95.6	(±2.5)*	92.6	(±3.6)*	NA	NA	94.4	(±2.9)*

See table footnotes on page 36.

TABLE 8. (Continued) Estimated vaccination coverage with ≥ 3 doses of Hib vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Will, Illinois	NA	NA	NA	NA	93.8	(± 3.8)*	92.8	(± 3.8)*	94.0	(± 3.0)*	93.7	(± 3.4)*	91.7	(± 5.2)*
Allen, Indiana	NA	NA	91.6	(± 3.8)*	94.2	(± 3.5)*	91.0	(± 4.3)*	92.9	(± 3.4)*	NA	NA	91.6	(± 5.0)*
Hamilton, Indiana	95.4	(± 2.3)*	93.8	(± 3.6)*	94.2	(± 3.6)*	96.5	(± 1.3)*	94.9	(± 2.6)*	NA	NA	93.0	(± 4.7)*
Lake, Indiana	89.6	(± 5.4)	87.8	(± 5.2)	91.4	(± 4.4)*	92.3	(± 4.1)*	93.5	(± 3.3)*	NA	NA	91.6	(± 4.9)*
Marion, Indiana	90.2	(± 3.1)*	93.0	(± 2.1)*	92.2	(± 2.6)*	92.9	(± 2.2)*	94.0	(± 2.1)*	94.6	(± 1.9)*	89.7	(± 4.7)
Linn, Iowa	NA	NA	93.5	(± 3.4)*	NA	NA	94.6	(± 3.0)*	93.6	(± 3.5)*	NA	NA	89.3	(± 5.9)
Polk, Iowa	93.1	(± 3.8)*	92.8	(± 3.2)*	94.8	(± 2.9)*	92.7	(± 3.4)*	94.4	(± 2.7)*	92.5	(± 3.4)*	92.9	(± 3.8)*
Scott, Iowa	NA	NA	NA	NA	93.3	(± 3.7)*	93.4	(± 3.6)*	91.7	(± 3.9)*	NA	NA	NA	NA
Johnson, Kansas	93.5	(± 3.3)*	95.0	(± 2.4)*	94.8	(± 2.7)*	95.4	(± 2.4)*	93.7	(± 2.8)*	94.9	(± 2.1)*	94.3	(± 3.3)*
Sedgwick, Kansas	89.1	(± 4.8)	93.8	(± 3.0)*	91.7	(± 3.8)*	92.9	(± 3.8)*	93.5	(± 3.3)*	93.5	(± 3.2)*	89.5	(± 5.2)
Shawnee, Kansas	NA	NA	NA	NA	93.2	(± 3.8)*	NA	NA	NA	NA	92.3	(± 4.0)*	93.1	(± 3.9)*
Fayette, Kentucky	NA	NA	94.0	(± 3.2)*	94.3	(± 3.5)*	NA	NA	95.4	(± 2.3)*	NA	NA	NA	NA
Jefferson, Kentucky	90.1	(± 4.7)*	91.0	(± 3.9)*	94.3	(± 2.9)*	93.5	(± 3.5)*	95.6	(± 2.1)*	94.4	(± 2.9)*	91.1	(± 4.2)*
Caddo, Louisiana	NA	NA	92.2	(± 4.0)*	93.1	(± 3.7)*	NA	NA	NA	NA	94.4	(± 3.1)*	90.2	(± 5.5)*
East Baton Rouge, Louisiana	91.2	(± 5.1)*	91.7	(± 4.1)*	94.2	(± 3.3)*	91.6	(± 4.3)*	94.4	(± 2.9)*	94.1	(± 3.0)*	92.2	(± 4.7)*
Jefferson, Louisiana	91.2	(± 4.6)*	92.5	(± 3.9)*	93.7	(± 3.6)*	93.4	(± 3.6)*	95.4	(± 2.3)*	95.2	(± 2.6)*	93.3	(± 3.9)*
Lafayette, Louisiana	NA	NA	92.2	(± 4.0)*	NA	NA	NA	NA	92.7	(± 3.3)*	NA	NA	91.1	(± 5.3)*
Orleans, Louisiana	90.1	(± 3.7)*	88.8	(± 2.9)	92.8	(± 2.2)*	91.0	(± 2.8)*	92.0	(± 2.4)*	92.7	(± 3.7)*	91.1	(± 5.1)*
St. Tammany, Louisiana	NA	NA	NA	NA	NA	NA	94.0	(± 3.5)*	95.0	(± 2.7)*	94.8	(± 2.6)*	NA	NA
Androscoggin, Maine	93.1	(± 3.8)*	93.4	(± 3.3)*	93.6	(± 3.5)*	94.5	(± 3.0)*	93.5	(± 3.5)*	93.4	(± 3.6)*	91.6	(± 4.4)*
Aroostook, Maine	NA	NA	94.5	(± 3.2)*	95.2	(± 2.6)*	NA	NA	94.0	(± 3.2)*	NA	NA	NA	NA
Cumberland, Maine	92.6	(± 3.4)*	92.7	(± 2.9)*	95.2	(± 2.4)*	93.7	(± 2.9)*	95.1	(± 2.2)*	95.6	(± 2.3)*	92.2	(± 3.5)*
Kennebec, Maine	92.9	(± 4.1)*	94.6	(± 2.9)*	94.2	(± 3.6)*	93.3	(± 3.4)*	94.1	(± 3.0)*	NA	NA	91.2	(± 5.1)*
Penobscot, Maine	93.9	(± 3.2)*	96.0	(± 1.5)*	92.4	(± 3.8)*	93.3	(± 3.6)*	94.1	(± 2.8)*	94.2	(± 3.2)*	87.5	(± 5.9)
York, Maine	94.8	(± 2.6)*	93.4	(± 3.1)*	94.4	(± 2.9)*	94.1	(± 2.9)*	93.3	(± 2.9)*	92.3	(± 3.7)*	89.7	(± 5.2)
Anne Arundel, Maryland	93.7	(± 3.8)*	94.4	(± 2.9)*	95.0	(± 2.8)*	93.8	(± 3.3)*	93.9	(± 2.9)*	94.5	(± 3.2)*	92.3	(± 4.6)*
Baltimore, Maryland	94.0	(± 3.5)*	93.0	(± 3.2)*	93.9	(± 3.2)*	94.6	(± 2.8)*	95.7	(± 2.2)*	94.9	(± 2.7)*	93.7	(± 3.9)*
Frederick, Maryland	NA	NA	NA	NA	94.1	(± 3.8)*	94.7	(± 3.0)*	94.0	(± 3.3)*	NA	NA	NA	NA
Harford, Maryland	NA	NA	NA	NA	NA	NA	NA	NA	94.2	(± 3.1)*	NA	NA	NA	NA
Howard, Maryland	NA	NA	94.0	(± 3.3)*	94.1	(± 3.6)*	94.3	(± 3.2)*	97.0	(± 1.4)*	NA	NA	92.2	(± 4.6)*
Montgomery, Maryland	94.2	(± 3.0)*	93.6	(± 3.0)*	92.8	(± 3.3)*	94.9	(± 2.5)*	96.8	(± 1.7)*	97.2	(± 1.1)*	94.2	(± 3.4)*
Prince George's, Maryland	91.5	(± 4.1)*	93.0	(± 3.2)*	93.8	(± 3.0)*	92.8	(± 3.8)*	93.5	(± 3.1)*	95.8	(± 1.4)*	93.0	(± 4.0)*
City of Baltimore, Maryland	NA	NA	NA	NA	91.1	(± 2.7)*	92.0	(± 2.6)*	93.9	(± 2.0)*	91.6	(± 2.9)*	92.2	(± 3.4)*
Bristol, Massachusetts	92.5	(± 4.6)*	93.4	(± 3.6)*	94.0	(± 3.5)*	93.9	(± 3.7)*	94.3	(± 2.9)*	94.1	(± 3.1)*	NA	NA
Essex, Massachusetts	92.9	(± 3.9)*	94.2	(± 2.9)*	96.2	(± 1.4)*	95.4	(± 2.4)*	93.8	(± 3.0)*	93.4	(± 3.5)*	91.7	(± 5.3)*
Hampden, Massachusetts	91.8	(± 5.0)*	94.5	(± 2.6)*	93.9	(± 3.5)*	93.1	(± 3.9)*	94.7	(± 2.9)*	NA	NA	NA	NA
Middlesex, Massachusetts	94.6	(± 2.9)*	95.3	(± 2.4)*	94.4	(± 2.9)*	95.9	(± 2.1)*	95.9	(± 1.9)*	96.9	(± 0.9)*	95.4	(± 2.2)*
Norfolk, Massachusetts	95.0	(± 2.7)*	94.6	(± 2.8)*	92.1	(± 4.1)*	95.8	(± 2.3)*	96.0	(± 2.1)*	96.4	(± 2.1)*	92.7	(± 4.3)*
Plymouth, Massachusetts	93.1	(± 3.8)*	94.3	(± 3.1)*	94.7	(± 3.1)*	94.7	(± 3.0)*	94.7	(± 2.8)*	NA	NA	92.8	(± 4.8)*
Suffolk, Massachusetts†	92.2	(± 4.1)*	96.1	(± 1.4)*	95.2	(± 1.9)*	94.8	(± 1.8)*	96.2	(± 1.7)*	96.7	(± 1.0)*	96.5	(± 1.0)*
Worcester, Massachusetts	94.7	(± 2.7)*	94.9	(± 2.6)*	95.4	(± 2.3)*	96.1	(± 1.5)*	95.3	(± 2.4)*	95.2	(± 2.7)*	92.5	(± 4.3)*
Kent, Michigan	92.9	(± 4.4)*	92.1	(± 3.9)*	92.8	(± 4.0)*	93.7	(± 3.6)*	94.1	(± 3.1)*	NA	NA	89.1	(± 5.2)
Macomb, Michigan	93.6	(± 3.7)*	92.8	(± 3.7)*	94.1	(± 3.7)*	95.1	(± 2.6)*	93.7	(± 3.2)*	92.9	(± 3.5)*	NA	NA
Oakland, Michigan	94.0	(± 3.2)*	93.8	(± 3.1)*	95.3	(± 2.4)*	95.8	(± 2.2)*	94.6	(± 2.6)*	95.8	(± 2.2)*	92.8	(± 4.3)*
Wayne, Michigan	86.4	(± 3.1)	86.3	(± 3.2)	90.4	(± 3.2)*	86.3	(± 4.3)	93.0	(± 2.7)*	90.8	(± 3.8)*	89.1	(± 4.9)
Anoka, Minnesota	93.7	(± 4.0)*	93.8	(± 3.5)*	94.1	(± 3.7)*	94.5	(± 3.1)*	NA	NA	NA	NA	91.6	(± 4.6)*
Dakota, Minnesota	95.1	(± 2.6)*	93.8	(± 3.5)*	94.7	(± 3.1)*	94.6	(± 3.0)*	94.3	(± 2.9)*	94.6	(± 2.9)*	91.3	(± 5.0)*
Hennepin, Minnesota	92.3	(± 3.4)*	93.4	(± 2.9)*	95.1	(± 2.6)*	94.2	(± 3.1)*	94.2	(± 2.7)*	95.0	(± 2.6)*	88.2	(± 4.1)
Ramsey, Minnesota	92.5	(± 4.2)*	93.4	(± 3.4)*	94.6	(± 3.1)*	93.0	(± 3.6)*	94.9	(± 2.7)*	94.2	(± 3.0)*	91.0	(± 5.1)*
Washington, Minnesota	NA	NA	94.6	(± 2.9)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Harrison, Mississippi	NA	NA	91.3	(± 4.0)*	NA	NA	NA	NA	NA	NA	91.2	(± 4.1)*	NA	NA
Hinds, Mississippi	91.2	(± 5.1)*	92.3	(± 3.9)*	93.7	(± 3.4)*	89.2	(± 5.3)	NA	NA	90.6	(± 4.6)*	87.8	(± 6.3)
Greene, Missouri	NA	NA	NA	NA	NA	NA	93.1	(± 3.9)*	NA	NA	NA	NA	NA	NA
Jackson, Missouri	90.6	(± 4.8)*	92.3	(± 4.0)*	92.2	(± 4.2)*	93.3	(± 3.6)*	94.2	(± 2.8)*	94.8	(± 2.6)*	89.0	(± 5.1)
Jefferson, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	92.2	(± 4.7)*
St. Charles, Missouri	NA	NA	94.1	(± 3.1)*	NA	NA	NA	NA	NA	NA	NA	NA	92.3	(± 4.5)*
St. Louis, Missouri†	91.2	(± 4.0)*	94.5	(± 2.8)*	94.0	(± 3.2)*	94.9	(± 2.8)*	95.7	(± 2.2)*	95.5	(± 2.3)*	96.4	(± 1.1)*
City of St. Louis, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	92.3	(± 4.8)*
Cascade, Montana	90.6	(± 4.7)*	92.9	(± 3.2)*	94.6	(± 3.2)*	93.5	(± 3.4)*	94.8	(± 2.6)*	93.3	(± 3.4)*	87.5	(± 6.3)
Flathead, Montana	87.4	(± 5.9)	89.3	(± 4.8)	94.4	(± 3.2)*	86.0	(± 5.5)	91.6	(± 3.9)*	89.1	(± 5.3)	89.5	(± 5.2)
Gallatin, Montana	91.7	(± 4.3)*	94.6	(± 2.9)*	92.4	(± 3.9)*	90.7	(± 4.4)*	92.3	(± 3.6)*	91.6	(± 4.0)*	88.2	(± 5.8)
Lewis and Clark, Montana	NA	NA	93.3	(± 3.5)*	94.8	(± 3.0)*	94.0	(± 3.4)*	NA	NA	NA	NA	90.1	(± 5.9)*
Missoula, Montana	91.3	(± 4.4)*	93.6	(± 3.2)*	93.5	(± 3.7)*	93.6	(± 3.4)*	92.6	(± 3.3)*	91.8	(± 3.5)*	89.2	(± 5.4)
Yellowstone, Montana	89.6	(± 4.7)	92.8	(± 3.4)*	90.3	(± 4.4)*	93.1	(± 3.4)*	94.4	(± 2.6)*	93.8	(± 2.9)*	88.1	(± 5.5)
Douglas, Nebraska	91.0	(± 3.8)*	93.6	(± 2.8)*	93.2	(± 3.0)*	92.0	(± 3.3)*	94.5	(± 2.3)*	94.6	(± 2.4)*	93.1	(± 2.8)*
Lancaster, Nebraska	92.4	(± 3.9)*	94.3	(± 2.8)*	94.1	(± 3.2)*	93.1	(± 3.5)*	94.4	(± 2.7)*	95.5	(± 2.0)*	90.3	(± 5.0)*
Sarpy, Nebraska	94.4	(± 3.3)*	92.2	(± 3.6)*	92.1	(± 4.2)*	92.4	(± 3.9)*	93.9	(± 3.2)*	NA	NA	NA	NA
Clark, Nevada	89.1	(± 3.5)	87.7	(± 3.3)	89.4	(± 2.9)	87.5	(± 3.4)	88.2	(± 2.9)	87.2	(± 3.3)	84.8	(± 4.0)

See table footnotes

TABLE 8. (Continued) Estimated vaccination coverage with ≥ 3 doses of Hib vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Washoe, Nevada	90.2	(±4.4)*	94.2	(±2.9)*	94.3	(±2.9)*	94.6	(±3.1)*	93.1	(±3.4)*	94.8	(±2.2)*	92.9	(±3.8)*
Grafton, New Hampshire	NA	NA	95.7	(±2.4)*	94.2	(±3.4)*	94.5	(±3.1)*	97.0	(±1.7)*	NA	NA	94.2	(±3.4)*
Hillsborough, New Hampshire	95.9	(±1.7)*	94.8	(±2.4)*	94.8	(±2.8)*	96.0	(±1.7)*	95.1	(±2.3)*	95.2	(±2.2)*	93.5	(±3.4)*
Merrimack, New Hampshire	94.2	(±3.4)*	94.6	(±2.8)*	95.0	(±2.8)*	94.5	(±3.0)*	94.8	(±2.7)*	94.1	(±3.1)*	93.2	(±4.2)*
Rockingham, New Hampshire	94.4	(±2.9)*	94.7	(±2.5)*	95.6	(±2.1)*	95.8	(±2.2)*	94.8	(±2.5)*	94.8	(±2.5)*	96.1	(±1.4)*
Strafford, New Hampshire	91.2	(±4.4)*	95.6	(±2.5)*	93.7	(±3.3)*	94.0	(±3.6)*	94.3	(±3.0)*	94.0	(±3.3)*	91.0	(±5.9)*
Bergen, New Jersey	93.8	(±3.9)*	94.2	(±3.1)*	94.2	(±3.4)*	95.6	(±2.7)*	95.9	(±2.0)*	96.0	(±2.6)*	93.0	(±4.5)*
Burlington, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.6	(±5.2)*
Camden, New Jersey	NA	NA	93.5	(±3.4)*	93.8	(±3.6)*	93.0	(±3.7)*	NA	NA	92.2	(±4.0)*	93.3	(±4.3)*
Essex, New Jersey	93.1	(±3.0)*	93.5	(±2.4)*	95.6	(±1.5)*	89.3	(±5.2)	93.3	(±3.1)*	92.3	(±3.7)*	92.9	(±4.4)*
Hudson, New Jersey	90.0	(±5.2)	91.7	(±4.3)*	92.9	(±4.1)*	89.9	(±4.9)	93.0	(±3.5)*	NA	NA	91.8	(±4.8)*
Middlesex, New Jersey	NA	NA	94.5	(±2.9)*	94.6	(±3.0)*	94.4	(±2.9)*	94.7	(±2.7)*	93.8	(±3.4)*	93.3	(±4.3)*
Monmouth, New Jersey	NA	NA	92.5	(±3.8)*	94.6	(±3.1)*	93.3	(±3.5)*	NA	NA	94.9	(±2.9)*	92.8	(±4.8)*
Morris, New Jersey	92.2	(±4.4)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ocean, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	91.4	(±4.1)*	90.8	(±4.4)*	92.3	(±4.5)*
Passaic, New Jersey	NA	NA	NA	NA	92.2	(±4.5)*	92.6	(±4.4)*	92.5	(±3.6)*	NA	NA	NA	NA
Union, New Jersey	NA	NA	93.3	(±3.4)*	95.0	(±2.5)*	94.1	(±3.5)*	93.4	(±3.2)*	NA	NA	90.9	(±5.2)*
Bernalillo, New Mexico	93.0	(±3.4)*	88.4	(±4.2)	89.1	(±4.5)	92.3	(±3.1)*	94.4	(±2.4)*	88.8	(±4.0)	87.9	(±5.5)
Dona Ana, New Mexico	88.3	(±6.4)	89.0	(±5.6)	90.1	(±4.9)*	90.6	(±4.4)*	90.9	(±4.4)*	NA	NA	90.5	(±5.3)*
Sandoval, New Mexico	NA	NA	NA	NA	NA	NA	NA	NA	91.4	(±4.1)*	NA	NA	79.8	(±10.9) [§]
San Juan, New Mexico	NA	NA	NA	NA	93.5	(±3.7)*	88.5	(±5.1)	91.9	(±4.0)*	91.1	(±4.7)*	79.2	(±16.0) [§]
Santa Fe, New Mexico	92.2	(±4.3)*	NA	NA	89.5	(±5.6)	NA	NA	93.3	(±3.1)*	NA	NA	NA	NA
Bronx, New York	86.9	(±6.2)	89.4	(±5.1)	91.1	(±4.4)*	90.8	(±4.4)*	90.9	(±3.9)*	85.5	(±6.0)	93.7	(±3.5)*
Erie, New York	91.4	(±4.4)*	94.4	(±2.6)*	94.6	(±3.2)*	94.0	(±3.4)*	93.7	(±3.2)*	93.5	(±3.3)*	NA	NA
Kings, New York	88.1	(±6.1)	90.2	(±4.1)*	90.8	(±3.5)*	91.2	(±4.1)*	90.0	(±3.6)	91.1	(±3.4)*	89.0	(±3.6)
Monroe, New York	NA	NA	92.9	(±3.7)*	93.9	(±3.6)*	93.1	(±3.7)*	95.6	(±2.3)*	95.3	(±2.4)*	91.8	(±4.7)*
Nassau, New York	93.3	(±3.9)*	94.0	(±3.4)*	93.4	(±3.4)*	95.4	(±2.5)*	95.7	(±2.3)*	96.4	(±2.4)*	93.9	(±3.7)*
New York, New York	86.9	(±7.1)	89.6	(±4.8)	92.4	(±3.8)*	97.3	(±1.6)*	95.5	(±2.3)*	95.0	(±2.6)*	89.7	(±4.4)
Queens, New York	90.8	(±4.5)*	92.6	(±3.3)*	91.3	(±3.8)*	92.2	(±3.5)*	92.9	(±3.2)*	94.0	(±2.9)*	94.3	(±3.1)*
Suffolk, New York	94.2	(±3.2)*	93.9	(±3.0)*	94.0	(±3.2)*	95.7	(±2.0)*	92.9	(±3.5)*	93.3	(±3.5)*	92.0	(±4.2)*
Westchester, New York	NA	NA	94.1	(±3.0)*	93.2	(±3.9)*	95.6	(±2.8)*	96.0	(±2.3)*	96.3	(±2.4)*	NA	NA
Durham, North Carolina	NA	NA	NA	NA	NA	NA	NA	NA	95.2	(±2.4)*	NA	NA	NA	NA
Guilford, North Carolina	NA	NA	93.7	(±3.6)*	93.9	(±3.5)*	NA	NA	NA	NA	NA	NA	NA	NA
Mecklenburg, North Carolina	92.4	(±4.1)*	93.5	(±3.3)*	94.0	(±3.8)*	94.4	(±3.1)*	95.3	(±2.3)*	95.0	(±2.7)*	92.4	(±4.4)*
Wake, North Carolina	93.2	(±3.8)*	94.3	(±3.0)*	93.7	(±3.7)*	95.0	(±2.6)*	95.1	(±2.5)*	95.7	(±2.5)*	92.1	(±3.6)*
Burleigh, North Dakota	92.2	(±3.8)*	93.3	(±3.3)*	94.5	(±3.2)*	93.7	(±3.7)*	95.1	(±2.3)*	94.1	(±3.1)*	88.7	(±5.4)
Cass, North Dakota	94.8	(±2.7)*	94.6	(±2.5)*	93.8	(±3.1)*	96.1	(±1.5)*	95.6	(±2.1)*	95.6	(±2.2)*	92.3	(±4.1)*
Grand Forks, North Dakota	92.3	(±4.1)*	94.9	(±2.7)*	94.0	(±3.2)*	93.9	(±3.4)*	94.4	(±2.8)*	94.2	(±3.1)*	90.4	(±5.4)*
Ward, North Dakota	91.9	(±4.1)*	93.0	(±3.3)*	94.1	(±3.3)*	93.8	(±3.4)*	94.2	(±3.0)*	94.9	(±2.7)*	89.5	(±5.3)
Cuyahoga, Ohio	91.6	(±2.8)*	90.9	(±2.5)*	92.3	(±2.4)*	92.4	(±2.5)*	96.0	(±1.5)*	96.3	(±1.2)*	93.5	(±4.0)*
Franklin, Ohio	92.0	(±2.5)*	93.9	(±1.9)*	94.2	(±1.8)*	93.9	(±2.0)*	95.0	(±1.8)*	94.1	(±2.9)*	91.7	(±4.9)*
Hamilton, Ohio	93.2	(±3.7)*	93.6	(±3.3)*	94.2	(±3.6)*	95.5	(±2.0)*	95.1	(±2.5)*	93.7	(±3.1)*	93.4	(±4.2)*
Lucas, Ohio	NA	NA	92.3	(±4.0)*	NA	NA	93.2	(±4.1)*	NA	NA	NA	NA	NA	NA
Montgomery, Ohio	NA	NA	NA	NA	NA	NA	92.7	(±3.8)*	NA	NA	NA	NA	NA	NA
Cleveland, Oklahoma	NA	NA	94.2	(±3.3)*	NA	NA	93.9	(±3.3)*	92.8	(±3.6)*	93.1	(±4.0)*	90.0	(±5.4)
Oklahoma, Oklahoma	87.5	(±5.5)	90.4	(±4.2)*	92.2	(±3.5)*	91.7	(±3.5)*	91.9	(±3.3)*	91.7	(±3.6)*	88.3	(±5.6)
Tulsa, Oklahoma	88.8	(±5.0)	92.7	(±3.2)*	94.3	(±3.0)*	92.2	(±4.0)*	92.1	(±3.3)*	93.5	(±2.9)*	89.4	(±5.3)
Clackamas, Oregon	94.3	(±3.1)*	93.5	(±3.3)*	94.3	(±3.4)*	94.0	(±3.3)*	92.9	(±3.4)*	NA	NA	88.7	(±6.1)
Lane, Oregon	89.3	(±5.0)	93.2	(±3.2)*	94.0	(±3.8)*	93.2	(±3.5)*	93.1	(±3.4)*	88.8	(±4.9)	88.6	(±6.1)
Marion, Oregon	92.2	(±4.2)*	94.0	(±3.1)*	93.9	(±3.4)*	91.2	(±4.2)*	91.4	(±3.9)*	91.7	(±4.1)*	90.0	(±5.9)
Multnomah, Oregon	92.4	(±3.5)*	90.2	(±3.7)*	91.9	(±3.7)*	91.6	(±3.5)*	93.4	(±2.9)*	94.0	(±2.9)*	87.7	(±5.5)
Washington, Oregon	90.8	(±4.2)*	93.8	(±3.1)*	89.1	(±4.6)	94.0	(±3.0)*	94.5	(±2.5)*	93.3	(±3.5)*	91.8	(±4.9)*
Allegheny, Pennsylvania	93.2	(±3.8)*	94.0	(±3.1)*	94.3	(±3.3)*	95.1	(±2.6)*	95.3	(±2.5)*	96.1	(±1.5)*	93.8	(±3.8)*
Delaware, Pennsylvania	NA	NA	93.6	(±3.3)*	NA	NA	NA	NA	95.4	(±2.5)*	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	92.0	(±4.6)*
Montgomery, Pennsylvania	94.2	(±3.4)*	95.0	(±2.7)*	94.1	(±3.7)*	NA	NA	96.1	(±2.2)*	NA	NA	93.3	(±4.3)*
Philadelphia, Pennsylvania†	87.7	(±3.5)	92.7	(±2.1)*	94.1	(±1.8)*	91.2	(±2.5)*	94.7	(±1.7)*	91.2	(±2.6)*	93.4	(±2.3)*
Kent, Rhode Island	94.6	(±2.9)*	93.9	(±2.9)*	96.2	(±1.5)*	95.2	(±2.5)*	94.7	(±2.6)*	95.3	(±2.4)*	92.2	(±3.9)*
Newport, Rhode Island	93.2	(±4.2)*	94.9	(±2.8)*	93.4	(±3.8)*	94.6	(±2.9)*	NA	NA	91.7	(±4.0)*	NA	NA
Providence, Rhode Island	94.7	(±2.5)*	95.5	(±1.9)*	95.5	(±2.0)*	93.6	(±2.7)*	94.7	(±2.0)*	94.6	(±2.2)*	93.1	(±2.7)*
Washington, Rhode Island	94.1	(±3.3)*	95.6	(±2.4)*	95.6	(±2.1)*	95.5	(±2.3)*	95.5	(±2.2)*	96.7	(±1.3)*	90.7	(±5.2)*
Charleston, South Carolina	91.0	(±5.5)*	92.6	(±3.6)*	94.0	(±3.5)*	91.8	(±4.6)*	95.2	(±2.5)*	94.6	(±3.2)*	88.1	(±6.1)
Greenville, South Carolina	93.4	(±3.8)*	93.7	(±3.3)*	94.7	(±3.1)*	94.0	(±3.3)*	94.6	(±2.9)*	93.3	(±3.6)*	88.0	(±5.9)
Horry, South Carolina	NA	NA	NA	NA	NA	NA	93.5	(±3.6)*	NA	NA	NA	NA	94.1	(±3.5)*
Richland, South Carolina	NA	NA	95.3	(±2.8)*	95.2	(±2.6)*	92.6	(±4.0)*	NA	NA	94.6	(±2.7)*	89.5	(±5.7)
Spartanburg, South Carolina	93.0	(±4.0)*	93.3	(±3.4)*	94.8	(±3.0)*	NA	NA	NA	NA	92.5	(±4.0)*	91.0	(±5.1)*
York, South Carolina	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	91.2	(±4.8)*
Minnehaha, South Dakota	93.0	(±3.6)*	93.1	(±3.0)*	93.1	(±3.4)*	93.0	(±3.2)*	94.7	(±2.6)*	95.2	(±2.3)*	95.1	(±2.5)*

See table footnotes on page 36.

TABLE 8. (Continued) Estimated vaccination coverage with ≥ 3 doses of Hib vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Pennington, South Dakota [†]	95.2	(±2.1)*	93.8	(±3.1)*	94.8	(±3.0)*	94.5	(±2.9)*	94.2	(±3.0)*	93.5	(±3.3)*	84.0	(±8.0)
Davidson, Tennessee	90.6	(±2.6)*	94.1	(±1.9)*	91.4	(±2.6)*	94.8	(±2.0)*	95.0	(±1.7)*	93.5	(±3.0)*	93.1	(±3.7)*
Hamilton, Tennessee	NA	NA	92.1	(±3.8)*	94.9	(±2.9)*	93.3	(±4.0)*	NA	NA	NA	NA	NA	NA
Knox, Tennessee	91.5	(±4.8)*	94.2	(±3.1)*	94.8	(±3.0)*	94.7	(±2.8)*	95.4	(±2.5)*	95.4	(±2.7)*	92.8	(±4.8)*
Shelby, Tennessee	89.4	(±2.9)	91.8	(±2.3)*	92.4	(±2.2)*	91.4	(±2.5)*	89.6	(±2.6)	90.7	(±2.6)*	91.9	(±4.3)*
Bexar, Texas	90.7	(±2.8)*	92.3	(±2.3)*	89.7	(±2.9)	93.1	(±2.0)*	92.6	(±2.6)*	92.1	(±2.7)*	93.0	(±2.4)*
Collin, Texas	NA	NA	NA	NA	NA	NA	96.4	(±1.3)*	NA	NA	95.0	(±3.0)*	NA	NA
Dallas, Texas [†]	87.5	(±3.3)	90.3	(±2.5)*	89.6	(±2.7)	88.0	(±2.6)	90.7	(±2.3)*	91.7	(±2.7)*	92.1	(±2.2)*
El Paso, Texas [†]	86.3	(±3.7)	88.3	(±2.7)	88.6	(±3.2)	92.6	(±2.3)*	92.1	(±2.3)*	91.7	(±2.4)*	93.3	(±2.4)*
Harris, Texas	86.1	(±3.4)	86.6	(±3.0)	87.5	(±3.1)	90.5	(±2.7)*	89.7	(±2.7)	91.5	(±2.9)*	90.7	(±4.6)*
Hidalgo, Texas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	92.0	(±4.6)*	NA	NA
Tarrant, Texas	90.6	(±4.5)*	90.6	(±4.3)*	90.1	(±4.9)*	92.8	(±3.6)*	92.8	(±3.4)*	93.7	(±3.4)*	90.6	(±5.3)*
Travis, Texas	NA	NA	NA	NA	92.1	(±4.4)*	NA	NA	93.9	(±3.1)*	93.3	(±3.8)*	NA	NA
Cache, Utah	NA	NA	91.7	(±3.8)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Davis, Utah	92.3	(±3.8)*	93.2	(±3.5)*	90.7	(±4.3)*	92.9	(±3.6)*	93.2	(±3.4)*	93.3	(±3.4)*	92.0	(±4.5)*
Salt Lake, Utah	89.6	(±3.6)	92.1	(±2.9)*	93.9	(±2.7)*	92.6	(±3.2)*	91.6	(±3.2)*	92.9	(±3.5)*	92.0	(±3.9)*
Utah, Utah [†]	85.3	(±5.0)	92.7	(±3.1)*	91.0	(±3.8)*	92.3	(±3.6)*	91.8	(±3.3)*	92.7	(±3.7)*	91.9	(±4.0)*
Weber, Utah	91.4	(±4.3)*	91.2	(±3.9)*	92.8	(±3.8)*	94.1	(±3.2)*	93.6	(±3.2)*	NA	NA	NA	NA
Addison, Vermont	93.2	(±3.9)*	95.4	(±2.8)*	NA	NA	93.9	(±3.5)*	96.3	(±1.9)*	NA	NA	NA	NA
Bennington, Vermont	NA	NA	94.3	(±3.0)*	94.2	(±3.7)*	NA	NA	NA	NA	NA	NA	NA	NA
Chittenden, Vermont	93.8	(±3.2)*	95.6	(±2.1)*	95.6	(±2.2)*	94.8	(±2.5)*	96.6	(±1.5)*	96.7	(±1.6)*	91.7	(±4.2)*
Franklin, Vermont	92.6	(±4.5)*	94.2	(±2.8)*	94.4	(±3.5)*	93.9	(±3.4)*	95.2	(±2.3)*	NA	NA	90.7	(±6.1)*
Lamoille, Vermont	NA	NA	NA	NA	NA	NA	NA	NA	92.2	(±4.1)*	NA	NA	NA	NA
Orange, Vermont	93.1	(±4.1)*	94.8	(±2.5)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rutland, Vermont	90.8	(±4.6)*	94.2	(±3.1)*	96.1	(±1.6)*	93.8	(±3.7)*	93.3	(±3.2)*	NA	NA	NA	NA
Washington, Vermont	92.9	(±4.4)*	94.6	(±2.7)*	94.2	(±3.7)*	94.1	(±3.6)*	94.7	(±2.7)*	94.4	(±2.9)*	94.9	(±2.4)*
Windham, Vermont	NA	NA	94.3	(±2.9)*	94.3	(±3.6)*	95.1	(±2.5)*	NA	NA	NA	NA	89.8	(±5.7)
Windsor, Vermont	92.4	(±3.8)*	93.5	(±3.3)*	95.1	(±2.6)*	95.4	(±2.2)*	95.9	(±2.0)*	94.6	(±2.9)*	NA	NA
Fairfax, Virginia	93.9	(±3.3)*	93.6	(±3.1)*	92.5	(±3.9)*	95.0	(±2.9)*	95.1	(±2.3)*	95.9	(±2.3)*	95.3	(±2.3)*
Loudoun, Virginia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	93.6	(±3.9)*
Virginia Beach, Virginia	NA	NA	91.1	(±4.0)*	93.6	(±3.5)*	NA	NA	NA	NA	NA	NA	91.3	(±5.0)*
Clark, Washington	92.4	(±4.6)*	92.0	(±4.0)*	91.8	(±4.2)*	92.4	(±3.9)*	93.0	(±3.5)*	92.6	(±4.0)*	NA	NA
King, Washington [†]	94.5	(±1.9)*	93.2	(±2.0)*	92.5	(±2.1)*	92.5	(±2.2)*	95.1	(±1.6)*	93.6	(±2.4)*	89.6	(±4.3)
Kitsap, Washington	NA	NA	NA	NA	95.0	(±2.8)*	NA	NA	91.3	(±4.0)*	NA	NA	89.7	(±5.2)
Pierce, Washington	89.9	(±4.8)	94.8	(±2.6)*	94.0	(±3.0)*	90.3	(±4.4)*	94.4	(±2.4)*	92.6	(±3.8)*	88.9	(±5.4)
Snohomish, Washington	92.4	(±4.0)*	92.8	(±3.4)*	93.5	(±3.3)*	92.4	(±3.7)*	92.2	(±3.8)*	92.1	(±4.1)*	89.7	(±5.7)
Spokane, Washington	94.1	(±3.1)*	92.8	(±3.5)*	94.9	(±2.8)*	87.2	(±5.3)	91.2	(±4.0)*	NA	NA	91.5	(±4.3)*
Thurston, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.4	(±4.9)*
Whatcom, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	91.0	(±5.2)*
Yakima, Washington	90.1	(±6.0)*	91.9	(±4.2)*	NA	NA	91.6	(±4.8)*	NA	NA	NA	NA	NA	NA
Kanawha, West Virginia	88.7	(±5.0)	93.6	(±3.1)*	94.5	(±3.4)*	NA	NA	95.2	(±2.6)*	94.1	(±3.0)*	93.0	(±4.3)*
Brown, Wisconsin	NA	NA	NA	NA	NA	NA	93.6	(±3.4)*	NA	NA	NA	NA	NA	NA
Dane, Wisconsin	93.8	(±3.5)*	95.4	(±2.3)*	95.3	(±2.5)*	94.4	(±3.2)*	95.4	(±2.4)*	95.8	(±2.3)*	88.0	(±6.4)
Milwaukee, Wisconsin [†]	87.0	(±3.3)	89.3	(±2.5)	91.4	(±2.6)*	88.7	(±3.1)	93.9	(±2.0)*	91.9	(±3.1)*	92.9	(±3.8)*
Outagamie, Wisconsin	NA	NA	93.7	(±3.3)*	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Waukesha, Wisconsin [†]	91.7	(±4.1)*	94.3	(±3.0)*	93.6	(±3.5)*	94.4	(±3.0)*	94.9	(±2.4)*	96.4	(±2.2)*	NA	NA
Albany, Wyoming	NA	NA	96.0	(±2.5)*	93.8	(±3.9)*	NA	NA	92.8	(±3.6)*	NA	NA	NA	NA
Campbell, Wyoming	NA	NA	92.7	(±3.7)*	92.9	(±3.8)*	94.7	(±2.9)*	94.8	(±2.6)*	94.1	(±3.1)*	91.3	(±5.0)*
Fremont, Wyoming	NA	NA	92.2	(±4.1)*	94.8	(±3.0)*	91.9	(±4.5)*	93.9	(±3.1)*	NA	NA	NA	NA
Laramie, Wyoming [†]	91.7	(±4.1)*	93.8	(±3.0)*	92.9	(±3.6)*	92.8	(±3.7)*	93.6	(±2.8)*	94.4	(±2.9)*	82.4	(±6.8)
Natrona, Wyoming	91.5	(±4.3)*	92.9	(±3.3)*	94.2	(±3.1)*	94.5	(±3.1)*	93.6	(±3.1)*	93.5	(±3.5)*	88.7	(±5.8)
Sweetwater, Wyoming [†]	93.9	(±3.5)*	88.6	(±4.7)	95.1	(±2.6)*	93.8	(±3.4)*	NA	NA	90.1	(±4.5)*	85.1	(±6.2)
Uinta, Wyoming	NA	NA	NA	NA	95.5	(±2.2)*	NA	NA	NA	NA	NA	NA	NA	NA
United States	91.5	(±0.5)*	92.7	(±0.4)*	93.2	(±0.4)*	92.9	(±0.4)*	93.8	(±0.4)*	93.6	(±0.4)*	91.7	(±0.5)*
Sample size, no.	37,282		44,855		45,623		45,052		43,308		38,607		35,447	
All selected counties	91.2	(±0.7)*	92.2	(±0.5)*	92.6	(±0.5)*	92.8	(±0.5)*	93.4	(±0.5)*	93.7	(±0.5)*	91.8	(±0.7)*
Sample size, no.	23,014		29,227		30,362		29,851		28,845		23,485		20,552	
Range, %	83.3–95.9		86.3–96.1		85.4–96.2		86–97.3		88.2–97		85.5–97.2		79.2–96.5	

Abbreviations: CI = confidence interval; Hib = *Haemophilus influenzae* type B; NA = not available.* Estimate exceeds the *Healthy People 2010* objective of 90% vaccination coverage.[†] Estimate increased significantly between the first biennial period and the last biennial period ($p < 0.05$).[§] Estimate has 95% CI half-width that exceeds 10% and might be imprecise.

TABLE 9. Estimated vaccination coverage with ≥ 3 doses of hepatitis B vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Jefferson, Alabama*	73.5	(± 4.1)	87.6	(± 2.7)	91.6	(± 2.3) [†]	88.2	(± 3.0)	93.5	(± 2.2) [†]	95.8	(± 1.8) [†]	94.3	(± 3.1) [†]
Madison, Alabama*	NA	NA	79.8	(± 6.8)	90.4	(± 5.2) [†]	NA	NA	94.1	(± 3.2) [†]	93.3	(± 3.7) [†]	95.1	(± 2.9) [†]
Mobile, Alabama*	68.7	(± 10.1) [§]	85.3	(± 5.7)	87.6	(± 5.8)	90.1	(± 4.8) [†]	91.3	(± 4.4) [†]	92.8	(± 3.6) [†]	94.6	(± 3.3) [†]
Montgomery, Alabama	NA	NA	84.2	(± 6.8)	88.9	(± 6.1)	NA	NA	NA	NA	NA	NA	NA	NA
Shelby, Alabama	NA	NA	NA	NA	96.1	(± 1.1) [†]	90.1	(± 5.1) [†]	91.3	(± 5.1) [†]	NA	NA	94.8	(± 3.1) [†]
Anchorage, Alaska*	NA	NA	NA	NA	84.9	(± 4.1)	87.0	(± 4.1)	90.6	(± 3.1) [†]	90.1	(± 4.0) [†]	93.0	(± 3.4) [†]
Fairbanks North Star, Alaska*	NA	NA	NA	NA	86.5	(± 5.3)	86.8	(± 5.0)	87.6	(± 4.7)	89.4	(± 4.7)	93.3	(± 3.9) [†]
Kenai Peninsula, Alaska	NA	NA	NA	NA	88.4	(± 5.8)	NA	NA	NA	NA	NA	NA	NA	NA
Matanuska-Susitna, Alaska*	NA	NA	NA	NA	83.0	(± 6.8)	87.9	(± 5.7)	89.9	(± 5.1)	89.0	(± 5.2)	92.8	(± 3.8) [†]
Cochise, Arizona	NA	NA	81.2	(± 7.4)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Coconino, Arizona*	NA	NA	80.1	(± 7.4)	NA	NA	NA	NA	91.3	(± 4.9) [†]	NA	NA	NA	NA
Maricopa, Arizona*	76.3	(± 4.4)	81.1	(± 3.4)	84.0	(± 3.4)	87.5	(± 2.9)	91.5	(± 2.3) [†]	89.5	(± 2.7)	92.6	(± 2.7) [†]
Mohave, Arizona	NA	NA	NA	NA	85.2	(± 6.8)	83.5	(± 7.0)	NA	NA	NA	NA	NA	NA
Pima, Arizona*	70.2	(± 6.4)	82.1	(± 4.4)	89.2	(± 4.0)	84.6	(± 4.4)	92.3	(± 3.0) [†]	90.6	(± 4.0) [†]	91.9	(± 4.2) [†]
Pinal, Arizona*	68.0	(± 10.3) [§]	80.4	(± 7.5)	88.7	(± 6.0)	87.6	(± 5.3)	90.5	(± 5.0) [†]	88.1	(± 6.6)	NA	NA
Yavapai, Arizona	NA	NA	NA	NA	NA	NA	87.7	(± 5.6)	89.1	(± 4.8)	NA	NA	NA	NA
Yuma, Arizona*	79.3	(± 9.0)	85.5	(± 6.2)	91.7	(± 4.6) [†]	88.8	(± 5.7)	93.8	(± 3.2) [†]	93.3	(± 3.3) [†]	NA	NA
Benton, Arkansas*	NA	NA	82.2	(± 6.8)	NA	NA	88.2	(± 5.4)	93.8	(± 3.3) [†]	91.9	(± 4.5) [†]	94.9	(± 3.1) [†]
Pulaski, Arkansas*	71.2	(± 9.0)	87.4	(± 4.9)	81.0	(± 6.7)	86.8	(± 5.1)	93.5	(± 3.4) [†]	93.0	(± 3.8) [†]	94.9	(± 3.0) [†]
Washington, Arkansas*	72.5	(± 9.8)	79.7	(± 7.1)	NA	NA	82.9	(± 6.9)	NA	NA	NA	NA	94.3	(± 3.3) [†]
Alameda, California*	81.3	(± 8.4)	NA	NA	89.6	(± 5.7)	91.3	(± 4.6) [†]	88.8	(± 5.7)	91.7	(± 3.1) [†]	91.7	(± 4.4) [†]
Los Angeles, California*	77.8	(± 4.6)	84.2	(± 3.3)	87.5	(± 3.0)	90.0	(± 2.7)	91.6	(± 2.2) [†]	92.7	(± 2.3) [†]	94.0	(± 2.0) [†]
Orange, California*	77.8	(± 8.0)	86.9	(± 5.2)	88.2	(± 5.7)	87.8	(± 5.0)	91.7	(± 3.9) [†]	93.3	(± 3.7) [†]	91.0	(± 4.8) [†]
Riverside, California	NA	NA	NA	NA	87.2	(± 6.1)	86.3	(± 6.1)	87.5	(± 5.5)	NA	NA	89.9	(± 5.3)
San Bernardino, California*	NA	NA	79.2	(± 7.1)	92.1	(± 4.3) [†]	89.5	(± 5.0)	88.9	(± 5.3)	90.8	(± 2.9) [†]	94.9	(± 1.9) [†]
San Diego, California*	74.4	(± 4.3)	81.8	(± 3.1)	87.1	(± 2.9)	88.6	(± 2.7)	89.9	(± 2.8)	91.3	(± 3.8) [†]	93.1	(± 4.2) [†]
San Mateo, California	NA	NA	85.4	(± 6.3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Santa Clara, California*	80.4	(± 3.8)	86.0	(± 2.9)	88.2	(± 2.7)	90.6	(± 2.3) [†]	93.3	(± 2.2) [†]	94.0	(± 2.5) [†]	NA	NA
Adams, Colorado*	69.4	(± 10.0) [§]	81.6	(± 6.5)	86.8	(± 5.8)	88.8	(± 5.2)	91.9	(± 4.2) [†]	NA	NA	NA	NA
Arapahoe, Colorado*	82.1	(± 7.6)	84.9	(± 6.2)	91.1	(± 5.0) [†]	88.0	(± 5.1)	93.4	(± 3.5) [†]	NA	NA	93.7	(± 3.8) [†]
Boulder, Colorado*	NA	NA	82.8	(± 6.5)	86.8	(± 6.6)	88.6	(± 5.2)	88.4	(± 5.1)	90.6	(± 4.9) [†]	93.1	(± 4.1) [†]
Denver, Colorado*	75.4	(± 8.4)	86.6	(± 5.2)	84.7	(± 6.1)	90.5	(± 4.4) [†]	91.5	(± 3.9) [†]	NA	NA	NA	NA
Douglas, Colorado	NA	NA	NA	NA	89.7	(± 5.7)	88.7	(± 5.6)	94.7	(± 2.8) [†]	NA	NA	NA	NA
El Paso, Colorado*	67.9	(± 10.1) [§]	84.2	(± 6.4)	88.1	(± 5.3)	86.7	(± 5.3)	90.7	(± 4.1) [†]	91.9	(± 4.3) [†]	93.2	(± 3.6) [†]
Jefferson, Colorado*	71.0	(± 8.9)	84.6	(± 5.6)	87.2	(± 6.1)	90.7	(± 4.3) [†]	88.7	(± 4.9)	94.0	(± 3.2) [†]	93.7	(± 3.6) [†]
Larimer, Colorado	NA	NA	NA	NA	87.6	(± 5.9)	90.6	(± 5.0) [†]	NA	NA	90.7	(± 5.1) [†]	NA	NA
Weld, Colorado	NA	NA	NA	NA	88.6	(± 5.8)	89.4	(± 5.3)	87.7	(± 5.5)	NA	NA	92.5	(± 4.3) [†]
Fairfield, Connecticut*	82.5	(± 5.8)	86.2	(± 4.2)	91.6	(± 3.8) [†]	92.7	(± 3.1) [†]	93.6	(± 3.3) [†]	93.6	(± 3.1) [†]	94.6	(± 2.8) [†]
Hartford, Connecticut*	83.0	(± 6.0)	86.4	(± 4.7)	90.6	(± 4.1) [†]	89.9	(± 4.0)	95.2	(± 2.2) [†]	94.9	(± 2.6) [†]	95.1	(± 2.9) [†]
New Haven, Connecticut*	77.9	(± 6.5)	87.9	(± 4.1)	91.8	(± 4.2) [†]	86.9	(± 5.0)	93.7	(± 3.1) [†]	91.6	(± 4.2) [†]	93.7	(± 3.4) [†]
New London, Connecticut*	79.1	(± 9.1)	83.2	(± 6.2)	89.6	(± 5.4)	NA	NA	90.9	(± 4.9) [†]	93.7	(± 3.6) [†]	94.6	(± 3.3) [†]
Kent, Delaware*	83.3	(± 7.2)	82.2	(± 5.5)	90.0	(± 4.3)	89.8	(± 4.6)	93.6	(± 3.2) [†]	93.5	(± 3.6) [†]	95.6	(± 2.3) [†]
New Castle, Delaware*	79.7	(± 4.9)	83.5	(± 3.7)	87.8	(± 3.4)	89.7	(± 3.2)	93.9	(± 2.5) [†]	93.7	(± 2.5) [†]	96.2	(± 1.6) [†]
Sussex, Delaware*	74.6	(± 8.1)	82.4	(± 5.8)	89.6	(± 4.4)	90.8	(± 4.7) [†]	92.2	(± 3.4) [†]	93.2	(± 3.4) [†]	92.3	(± 3.3) [†]
District of Columbia*	76.5	(± 4.4)	82.0	(± 3.4)	88.2	(± 2.7)	88.4	(± 2.9)	93.0	(± 2.3) [†]	91.1	(± 2.4) [†]	93.5	(± 2.3) [†]
Broward, Florida*	73.7	(± 8.6)	86.8	(± 5.2)	91.6	(± 4.6) [†]	87.1	(± 5.8)	93.4	(± 3.3) [†]	90.7	(± 4.8) [†]	93.3	(± 4.1) [†]
Duval, Florida*	78.1	(± 4.3)	90.4	(± 2.7) [†]	92.0	(± 2.4) [†]	91.7	(± 2.8) [†]	93.3	(± 2.2) [†]	94.0	(± 1.7) [†]	NA	NA
Hillsborough, Florida*	73.0	(± 10.3) [§]	86.0	(± 6.1)	87.2	(± 6.1)	88.3	(± 5.5)	92.1	(± 3.8) [†]	87.7	(± 5.6)	NA	NA
Dade, Florida	NA	NA	NA	NA	92.7	(± 2.3) [†]	91.4	(± 2.3) [†]	94.4	(± 1.8) [†]	94.4	(± 2.7) [†]	93.8	(± 2.2) [†]
Orange, Florida*	NA	NA	NA	NA	86.7	(± 6.3)	NA	NA	92.7	(± 4.2) [†]	NA	NA	94.9	(± 2.5) [†]
Palm Beach, Florida*	NA	NA	84.7	(± 6.0)	92.0	(± 4.4) [†]	91.3	(± 4.4) [†]	92.6	(± 3.9) [†]	90.2	(± 5.4) [†]	93.9	(± 3.5) [†]
Pinellas, Florida	NA	NA	89.4	(± 4.6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobb, Georgia*	78.5	(± 8.3)	86.5	(± 5.6)	89.8	(± 5.2)	91.4	(± 4.2) [†]	94.0	(± 3.2) [†]	94.1	(± 3.2) [†]	92.9	(± 3.5) [†]
DeKalb, Georgia*	80.0	(± 6.8)	85.8	(± 4.5)	91.2	(± 3.4) [†]	90.2	(± 3.3) [†]	92.1	(± 2.9) [†]	92.1	(± 3.5) [†]	92.9	(± 4.1) [†]
Fulton, Georgia*	83.7	(± 5.0)	86.2	(± 3.8)	90.0	(± 3.5)	91.7	(± 3.0) [†]	92.1	(± 2.8) [†]	94.1	(± 2.7) [†]	92.3	(± 4.3) [†]
Gwinnett, Georgia*	77.9	(± 8.8)	86.5	(± 5.7)	92.8	(± 3.8) [†]	90.3	(± 4.8) [†]	90.1	(± 4.8) [†]	95.0	(± 2.7) [†]	94.2	(± 3.5) [†]
Hawaii, Hawaii*	81.4	(± 8.4)	85.6	(± 5.5)	88.8	(± 5.1)	90.7	(± 4.8) [†]	91.4	(± 3.8) [†]	91.2	(± 4.2) [†]	92.0	(± 4.2) [†]
Honolulu, Hawaii*	81.8	(± 5.2)	86.0	(± 3.4)	90.0	(± 3.3)	89.0	(± 3.5)	89.7	(± 2.8)	91.8	(± 2.9) [†]	92.0	(± 3.3) [†]
Maui, Hawaii*	78.4	(± 8.6)	87.0	(± 5.8)	90.7	(± 4.9) [†]	86.2	(± 5.7)	89.6	(± 4.7)	93.1	(± 3.9) [†]	95.0	(± 2.4) [†]
Ada, Idaho*	69.9	(± 7.6)	84.9	(± 4.6)	89.8	(± 4.2)	87.2	(± 4.7)	91.2	(± 4.0) [†]	92.5	(± 3.3) [†]	93.1	(± 3.4) [†]
Bannock, Idaho	NA	NA	81.9	(± 7.1)	88.2	(± 5.9)	85.3	(± 6.5)	NA	NA	NA	NA	NA	NA
Bonneville, Idaho*	62.7	(± 9.2)	75.2	(± 7.2)	87.7	(± 5.4)	89.5	(± 5.1)	93.9	(± 3.2) [†]	93.5	(± 3.7) [†]	94.4	(± 3.7) [†]
Canyon, Idaho*	NA	NA	79.8	(± 6.4)	82.2	(± 6.5)	82.9	(± 6.4)	93.4	(± 3.3) [†]	90.0	(± 4.9)	90.9	(± 4.6) [†]
Kootenai, Idaho*	73.1	(± 9.3)	82.5	(± 6.7)	89.0	(± 5.5)	85.9	(± 6.5)	NA	NA	NA	NA	NA	NA
Twin Falls, Idaho	NA	NA	82.8	(± 6.9)	NA	NA	89.2	(± 5.5)	NA	NA	NA	NA	NA	NA
Cook, Illinois*	71.5	(± 4.7)	82.3	(± 3.6)	84.6	(± 3.6)	89.7							

TABLE 9. (Continued) Estimated vaccination coverage with ≥3 doses of hepatitis B vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Will, Illinois	NA	NA	NA	NA	89.3	(±5.6)	87.3	(±5.6)	92.0	(±4.4) [†]	93.5	(±3.6) [†]	93.9	(±3.5) [†]
Allen, Indiana*	NA	NA	83.4	(±6.3)	90.0	(±5.6)	87.3	(±5.6)	90.5	(±4.3) [†]	NA	NA	95.1	(±2.9) [†]
Hamilton, Indiana*	75.7	(±10.2) [§]	83.2	(±6.5)	91.0	(±5.0) [†]	93.8	(±3.0) [†]	94.3	(±3.1) [†]	NA	NA	94.7	(±3.3) [†]
Lake, Indiana*	66.2	(±11.0) [§]	78.7	(±7.4)	85.9	(±6.0)	89.7	(±5.2)	94.0	(±3.3) [†]	NA	NA	94.5	(±3.3) [†]
Marion, Indiana*	72.3	(±4.8)	80.8	(±3.4)	81.1	(±3.9)	88.7	(±3.0)	91.1	(±2.5) [†]	94.6	(±2.1) [†]	93.9	(±3.0) [†]
Linn, Iowa*	NA	NA	84.8	(±6.8)	NA	NA	89.6	(±5.1)	94.2	(±3.1) [†]	NA	NA	94.3	(±3.3) [†]
Polk, Iowa*	68.5	(±8.8)	85.9	(±5.2)	90.8	(±4.5) [†]	87.2	(±5.2)	94.5	(±2.8) [†]	92.7	(±3.6) [†]	95.2	(±2.8) [†]
Scott, Iowa	NA	NA	NA	NA	89.2	(±5.5)	89.7	(±5.4)	91.6	(±4.4) [†]	NA	NA	NA	NA
Johnson, Kansas*	78.6	(±7.3)	86.6	(±4.6)	89.8	(±4.2)	89.6	(±4.6)	92.6	(±3.2) [†]	93.6	(±2.4) [†]	95.2	(±2.7) [†]
Sedgwick, Kansas*	68.2	(±8.3)	79.3	(±5.9)	86.3	(±5.2)	87.8	(±5.5)	94.1	(±3.0) [†]	92.2	(±3.7) [†]	93.8	(±3.4) [†]
Shawnee, Kansas*	NA	NA	NA	NA	77.8	(±8.7)	NA	NA	NA	NA	88.0	(±5.4)	93.7	(±3.5) [†]
Fayette, Kentucky	NA	NA	86.4	(±5.7)	89.3	(±5.8)	NA	NA	90.8	(±4.6) [†]	NA	NA	NA	NA
Jefferson, Kentucky*	72.5	(±8.2)	85.2	(±5.2)	90.1	(±4.5) [†]	89.3	(±5.0)	95.9	(±1.7) [†]	93.6	(±3.2) [†]	94.7	(±3.0) [†]
Caddo, Louisiana*	NA	NA	86.1	(±5.7)	89.0	(±5.7)	NA	NA	NA	NA	94.9	(±2.9) [†]	94.7	(±3.2) [†]
East Baton Rouge, Louisiana*	73.9	(±9.5)	83.6	(±6.3)	89.1	(±5.3)	87.8	(±5.4)	91.8	(±4.3) [†]	96.1	(±1.5) [†]	94.2	(±3.3) [†]
Jefferson, Louisiana*	79.9	(±8.0)	86.9	(±5.4)	91.5	(±4.6) [†]	88.3	(±5.4)	94.4	(±2.9) [†]	94.6	(±3.0) [†]	93.9	(±3.2) [†]
Lafayette, Louisiana*	NA	NA	82.3	(±6.9)	NA	NA	NA	NA	91.8	(±3.9) [†]	NA	NA	94.9	(±3.1) [†]
Orleans, Louisiana*	76.7	(±5.3)	80.3	(±3.7)	84.0	(±3.7)	84.1	(±3.7)	89.3	(±3.0)	92.9	(±3.5) [†]	92.3	(±4.3) [†]
St. Tammany, Louisiana	NA	NA	NA	NA	NA	NA	89.2	(±5.5)	94.1	(±3.4) [†]	94.9	(±2.8) [†]	NA	NA
Androscoggin, Maine*	71.5	(±9.2)	82.6	(±6.9)	88.2	(±5.8)	88.4	(±5.3)	94.4	(±3.0) [†]	90.3	(±4.9) [†]	92.8	(±3.7) [†]
Aroostook, Maine*	NA	NA	83.0	(±7.8)	90.2	(±5.3) [†]	NA	NA	92.4	(±4.3) [†]	NA	NA	NA	NA
Cumberland, Maine*	58.4	(±7.6)	84.4	(±4.6)	86.8	(±4.6)	90.2	(±3.9) [†]	86.1	(±4.7)	92.4	(±3.4) [†]	91.8	(±3.6) [†]
Kennebec, Maine*	75.5	(±8.6)	87.3	(±5.3)	91.3	(±4.9) [†]	89.6	(±5.1)	94.1	(±3.1) [†]	NA	NA	95.7	(±2.1) [†]
Penobscot, Maine*	70.1	(±8.5)	84.7	(±6.1)	86.6	(±5.6)	87.3	(±5.7)	92.2	(±4.1) [†]	93.2	(±4.1) [†]	92.6	(±4.0) [†]
York, Maine*	69.4	(±8.2)	85.9	(±5.2)	89.2	(±4.7)	89.1	(±4.5)	92.1	(±3.7) [†]	90.9	(±4.4) [†]	94.4	(±3.2) [†]
Anne Arundel, Maryland*	78.4	(±8.9)	85.7	(±5.8)	88.3	(±5.7)	90.8	(±4.5) [†]	93.5	(±3.4) [†]	94.7	(±2.9) [†]	94.2	(±3.2) [†]
Baltimore, Maryland*	71.7	(±8.5)	86.5	(±5.3)	88.2	(±4.9)	90.3	(±4.4) [†]	90.6	(±4.4) [†]	92.3	(±3.7) [†]	95.5	(±2.4) [†]
Frederick, Maryland	NA	NA	NA	NA	89.5	(±5.6)	89.6	(±5.9)	93.8	(±3.6) [†]	NA	NA	NA	NA
Harford, Maryland	NA	NA	NA	NA	NA	NA	NA	NA	93.2	(±4.0) [†]	NA	NA	NA	NA
Howard, Maryland	NA	NA	92.2	(±3.9) [†]	89.9	(±5.7)	88.6	(±5.4)	91.6	(±4.2) [†]	NA	NA	94.8	(±3.2) [†]
Montgomery, Maryland*	79.6	(±7.0)	90.4	(±3.9) [†]	90.3	(±4.3) [†]	91.4	(±3.6) [†]	92.5	(±3.8) [†]	96.6	(±1.9) [†]	95.0	(±2.8) [†]
Prince George's, Maryland*	73.1	(±8.6)	84.8	(±5.6)	89.8	(±4.7)	91.1	(±4.3) [†]	93.1	(±3.6) [†]	90.5	(±4.9) [†]	93.8	(±3.3) [†]
City of Baltimore, Maryland*	NA	NA	NA	NA	86.6	(±3.3)	87.5	(±3.0)	91.3	(±2.5) [†]	93.0	(±2.4) [†]	93.3	(±3.5) [†]
Bristol, Massachusetts*	77.3	(±9.5)	83.7	(±6.5)	89.2	(±5.2)	89.5	(±5.7)	94.5	(±3.0) [†]	92.9	(±3.7) [†]	NA	NA
Essex, Massachusetts*	82.1	(±7.3)	85.7	(±5.3)	92.5	(±4.0) [†]	91.8	(±4.0) [†]	93.2	(±3.7) [†]	92.2	(±4.2) [†]	92.4	(±4.4) [†]
Hampden, Massachusetts*	77.8	(±8.7)	86.2	(±6.3)	91.0	(±5.1) [†]	89.3	(±5.5)	94.2	(±3.4) [†]	NA	NA	NA	NA
Middlesex, Massachusetts*	86.3	(±5.3)	89.2	(±3.9)	90.7	(±4.3) [†]	92.1	(±3.3) [†]	93.5	(±2.9) [†]	96.0	(±2.2) [†]	95.0	(±2.8) [†]
Norfolk, Massachusetts*	83.1	(±7.0)	91.1	(±4.2) [†]	87.1	(±6.1)	92.5	(±4.1) [†]	94.6	(±2.7) [†]	95.8	(±2.5) [†]	93.7	(±3.6) [†]
Plymouth, Massachusetts*	79.5	(±8.5)	85.4	(±6.1)	91.3	(±4.9) [†]	88.0	(±5.4)	94.6	(±2.8) [†]	NA	NA	95.1	(±2.8) [†]
Suffolk, Massachusetts*	84.2	(±5.2)	92.8	(±2.0) [†]	89.6	(±3.5)	90.6	(±2.6) [†]	92.8	(±2.7) [†]	96.4	(±1.3) [†]	94.3	(±3.1) [†]
Worcester, Massachusetts*	79.2	(±7.6)	84.8	(±5.2)	88.8	(±5.1)	91.7	(±4.3) [†]	92.4	(±3.9) [†]	95.2	(±2.6) [†]	94.6	(±3.1) [†]
Kent, Michigan*	76.1	(±9.5)	81.6	(±7.2)	88.1	(±6.0)	89.3	(±5.1)	94.2	(±3.4) [†]	NA	NA	94.4	(±3.2) [†]
Macomb, Michigan*	67.2	(±9.3)	83.0	(±6.5)	90.0	(±5.6)	90.2	(±4.6) [†]	94.0	(±3.2) [†]	93.0	(±3.7) [†]	NA	NA
Oakland, Michigan*	76.9	(±8.0)	90.2	(±4.3) [†]	90.6	(±4.9) [†]	90.9	(±4.3) [†]	91.6	(±3.8) [†]	95.6	(±2.4) [†]	93.7	(±3.6) [†]
Wayne, Michigan*	65.7	(±5.5)	79.7	(±4.3)	90.2	(±4.2) [†]	83.4	(±4.5)	95.2	(±1.5) [†]	92.7	(±3.3) [†]	92.0	(±3.7) [†]
Anoka, Minnesota*	71.4	(±10.3) [§]	81.6	(±7.0)	89.4	(±6.4)	90.8	(±4.7) [†]	NA	NA	NA	NA	93.6	(±3.5) [†]
Dakota, Minnesota*	67.8	(±9.2)	80.3	(±7.0)	90.5	(±4.9) [†]	88.8	(±5.4)	92.2	(±4.3) [†]	94.3	(±3.2) [†]	94.9	(±3.1) [†]
Hennepin, Minnesota*	68.7	(±7.3)	84.7	(±4.7)	89.8	(±4.4)	92.4	(±3.7) [†]	92.8	(±3.5) [†]	95.2	(±2.6) [†]	93.3	(±2.9) [†]
Ramsey, Minnesota*	70.4	(±8.2)	81.7	(±6.5)	84.7	(±6.7)	90.3	(±5.0) [†]	91.1	(±4.8) [†]	94.3	(±3.2) [†]	94.2	(±3.5) [†]
Washington, Minnesota	NA	NA	81.4	(±7.4)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Harrison, Mississippi*	NA	NA	84.3	(±6.1)	NA	NA	NA	NA	NA	NA	94.2	(±3.3) [†]	NA	NA
Hinds, Mississippi*	71.4	(±10.1) [§]	85.9	(±5.4)	84.9	(±6.8)	83.3	(±6.9)	NA	NA	91.8	(±4.4) [†]	91.5	(±4.5) [†]
Greene, Missouri	NA	NA	NA	NA	NA	NA	88.7	(±5.9)	NA	NA	NA	NA	NA	NA
Jackson, Missouri*	75.7	(±8.9)	81.8	(±6.6)	84.4	(±6.9)	87.5	(±5.6)	92.8	(±3.4) [†]	96.4	(±1.1) [†]	93.5	(±3.6) [†]
Jefferson, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	95.2	(±2.8) [†]
St. Charles, Missouri*	NA	NA	82.5	(±7.0)	NA	NA	NA	NA	NA	NA	NA	NA	93.5	(±3.8) [†]
St. Louis, Missouri*	75.0	(±8.1)	85.7	(±5.0)	89.9	(±4.7)	91.0	(±4.3) [†]	93.8	(±3.1) [†]	94.2	(±2.7) [†]	94.2	(±3.0) [†]
City of St. Louis, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	91.7	(±4.9) [†]
Cascade, Montana*	71.0	(±9.4)	83.2	(±5.5)	89.7	(±5.1)	89.5	(±4.8)	94.6	(±3.0) [†]	93.1	(±3.8) [†]	94.6	(±3.4) [†]
Flathead, Montana*	64.3	(±10.7) [§]	78.6	(±7.3)	84.6	(±6.7)	78.8	(±7.3)	89.0	(±4.8)	88.0	(±5.5)	91.1	(±4.5) [†]
Gallatin, Montana*	71.2	(±9.5)	82.6	(±6.8)	88.1	(±5.6)	85.7	(±6.2)	91.3	(±4.1) [†]	91.2	(±4.6) [†]	91.6	(±4.5) [†]
Lewis and Clark, Montana*	NA	NA	86.2	(±5.7)	90.0	(±5.0)	88.9	(±5.7)	NA	NA	NA	NA	93.7	(±3.8) [†]
Missoula, Montana*	72.9	(±8.6)	85.4	(±6.0)	87.8	(±6.1)	87.9	(±5.3)	91.0	(±4.1) [†]	89.4	(±4.9)	88.8	(±5.5)
Yellowstone, Montana*	78.5	(±7.7)	86.5	(±5.2)	89.8	(±5.3)	89.8	(±4.7)	92.7	(±3.2) [†]	93.2	(±3.3) [†]	87.9	(±5.2)
Douglas, Nebraska*	79.9	(±6.0)	86.0	(±4.5)	90.6	(±3.9) [†]	89.7	(±4.0)	93.8	(±2.7) [†]	94.4	(±2.6) [†]	94.6	(±2.5) [†]
Lancaster, Nebraska*	75.6	(±7.8)	84.9	(±5.3)	89.5	(±4.8)	90.3	(±5.0) [†]	91.6	(±4.1) [†]	95.3	(±2.2) [†]	94.4	(±3.1) [†]
Sarpy, Nebraska*	73.0	(±9.8)	82.2	(±6.7)	89.3	(±5.6)	88.4	(±5.5)	94.3	(±3.1) [†]	NA	NA	NA	NA
Clark, Nevada*	74.6	(±5.4)	82.5	(±3.9)	83.2	(±3.5)	85.2	(±3.7)	86.9	(±3.1)	80.7	(±4.2)	85.8	(±3.8)

See table footnotes on page 40.

TABLE 9. (Continued) Estimated vaccination coverage with ≥3 doses of hepatitis B vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Washoe, Nevada*	73.5	(±8.0)	86.4	(±5.2)	90.6	(±4.0) [†]	91.3	(±4.5) [†]	96.1	(±1.3) [†]	94.2	(±2.6) [†]	92.0	(±4.0) [†]
Grafton, New Hampshire*	NA	NA	86.4	(±5.6)	87.0	(±5.9)	89.6	(±5.0)	94.6	(±3.0) [†]	NA	NA	94.4	(±3.7) [†]
Hillsborough, New Hampshire*	81.7	(±5.3)	88.2	(±3.7)	91.4	(±3.7) [†]	90.8	(±3.5) [†]	94.3	(±2.7) [†]	93.1	(±3.1) [†]	95.4	(±2.5) [†]
Merrimack, New Hampshire*	77.1	(±8.0)	85.2	(±5.5)	89.6	(±5.4)	88.8	(±4.9)	94.0	(±3.1) [†]	92.8	(±3.8) [†]	94.7	(±3.3) [†]
Rockingham, New Hampshire*	82.3	(±6.3)	87.4	(±4.5)	91.0	(±3.9) [†]	91.0	(±3.7) [†]	94.8	(±2.8) [†]	93.5	(±3.1) [†]	95.3	(±2.5) [†]
Strafford, New Hampshire*	78.9	(±8.7)	85.4	(±6.0)	87.1	(±6.1)	90.7	(±4.9) [†]	94.5	(±2.9) [†]	95.5	(±1.9) [†]	94.9	(±3.1) [†]
Bergen, New Jersey*	81.0	(±7.9)	92.9	(±3.4) [†]	89.7	(±4.9)	92.3	(±4.2) [†]	94.2	(±2.8) [†]	94.6	(±3.1) [†]	92.5	(±4.4) [†]
Burlington, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	94.2	(±3.6) [†]
Camden, New Jersey*	NA	NA	85.7	(±6.0)	89.7	(±5.6)	89.3	(±5.3)	NA	NA	91.8	(±4.5) [†]	93.5	(±3.9) [†]
Essex, New Jersey*	78.8	(±6.1)	90.5	(±3.2) [†]	88.5	(±4.9)	86.0	(±6.3)	95.5	(±1.6) [†]	93.4	(±3.0) [†]	90.7	(±4.8) [†]
Hudson, New Jersey*	71.7	(±11.1) [§]	86.1	(±6.0)	89.7	(±5.3)	81.2	(±7.7)	93.5	(±3.6) [†]	NA	NA	90.9	(±4.9) [†]
Middlesex, New Jersey	NA	NA	88.8	(±5.1)	88.1	(±5.3)	87.9	(±5.4)	93.1	(±3.7) [†]	91.6	(±4.4) [†]	92.9	(±4.2) [†]
Monmouth, New Jersey	NA	NA	89.2	(±4.9)	87.2	(±6.5)	86.1	(±5.9)	NA	NA	93.5	(±3.8) [†]	92.8	(±4.4) [†]
Morris, New Jersey	77.2	(±9.6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ocean, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	93.0	(±3.6) [†]	88.5	(±5.6)	91.1	(±4.8) [†]
Passaic, New Jersey	NA	NA	NA	NA	89.9	(±5.4)	88.7	(±5.3)	89.9	(±5.0)	NA	NA	NA	NA
Union, New Jersey*	NA	NA	88.1	(±5.1)	91.3	(±4.9) [†]	92.0	(±4.3) [†]	89.5	(±5.0)	NA	NA	94.3	(±3.1) [†]
Bernalillo, New Mexico*	72.3	(±7.8)	82.1	(±5.4)	88.3	(±4.9)	86.5	(±4.2)	94.4	(±2.6) [†]	88.4	(±4.3)	93.2	(±3.5) [†]
Dona Ana, New Mexico*	66.6	(±9.6)	83.5	(±6.0)	89.5	(±4.8)	83.5	(±7.0)	91.8	(±4.0) [†]	NA	NA	93.2	(±3.8) [†]
Sandoval, New Mexico	NA	NA	NA	NA	NA	NA	NA	NA	90.4	(±4.7) [†]	NA	NA	89.3	(±5.8)
San Juan, New Mexico	NA	NA	NA	NA	90.7	(±5.1) [†]	88.4	(±5.3)	93.1	(±3.7) [†]	91.4	(±4.9) [†]	92.5	(±4.3) [†]
Santa Fe, New Mexico*	75.2	(±9.4)	NA	NA	85.5	(±6.7)	NA	NA	91.4	(±4.1) [†]	NA	NA	NA	NA
Bronx, New York*	74.2	(±9.2)	86.9	(±5.5)	90.5	(±4.6) [†]	91.1	(±4.5) [†]	89.9	(±4.3)	89.6	(±5.0)	94.3	(±3.1) [†]
Erie, New York*	81.6	(±7.8)	86.5	(±5.9)	92.0	(±4.4) [†]	87.3	(±5.8)	90.2	(±5.2) [†]	91.8	(±4.3) [†]	NA	NA
Kings, New York*	76.4	(±7.6)	86.0	(±4.7)	87.1	(±4.2)	89.7	(±4.0)	92.3	(±3.1) [†]	90.9	(±3.5) [†]	90.6	(±3.4) [†]
Monroe, New York	NA	NA	87.8	(±5.6)	92.6	(±3.9) [†]	88.3	(±5.7)	94.3	(±3.2) [†]	95.2	(±2.6) [†]	94.3	(±3.4) [†]
Nassau, New York	88.9	(±6.2)	92.9	(±3.6) [†]	91.0	(±4.7) [†]	91.1	(±4.6) [†]	92.5	(±3.8) [†]	95.2	(±3.2) [†]	93.7	(±3.7) [†]
New York, New York	81.7	(±7.8)	92.2	(±3.8) [†]	90.7	(±4.4) [†]	94.3	(±3.5) [†]	91.7	(±4.0) [†]	92.5	(±3.7) [†]	90.0	(±4.5)
Queens, New York*	84.3	(±6.2)	86.2	(±4.7)	91.1	(±3.9) [†]	91.1	(±3.8) [†]	93.2	(±3.4) [†]	93.5	(±3.3) [†]	94.3	(±2.8) [†]
Suffolk, New York*	79.3	(±7.8)	87.4	(±5.1)	90.9	(±4.7) [†]	90.1	(±4.6) [†]	92.0	(±3.7) [†]	93.0	(±3.8) [†]	93.6	(±3.6) [†]
Westchester, New York	NA	NA	92.2	(±3.8) [†]	91.7	(±4.6) [†]	94.5	(±2.7) [†]	92.2	(±4.1) [†]	94.9	(±3.4) [†]	NA	NA
Durham, North Carolina	NA	NA	NA	NA	NA	NA	NA	NA	91.1	(±4.5) [†]	NA	NA	NA	NA
Guilford, North Carolina	NA	NA	86.2	(±6.2)	88.5	(±5.5)	NA	NA	NA	NA	NA	NA	NA	NA
Mecklenburg, North Carolina*	78.5	(±8.3)	85.6	(±5.5)	91.2	(±5.0) [†]	88.8	(±5.4)	94.8	(±2.7) [†]	94.1	(±3.3) [†]	94.6	(±3.3) [†]
Wake, North Carolina*	83.0	(±7.8)	89.2	(±4.9)	87.9	(±5.9)	90.4	(±4.7) [†]	93.7	(±3.3) [†]	95.5	(±2.4) [†]	94.9	(±2.9) [†]
Burleigh, North Dakota*	82.1	(±7.8)	87.1	(±5.0)	89.9	(±4.9)	89.1	(±5.9)	93.3	(±3.8) [†]	93.3	(±3.6) [†]	95.0	(±3.0) [†]
Cass, North Dakota*	82.1	(±6.5)	85.3	(±4.7)	91.1	(±4.3) [†]	91.3	(±3.8) [†]	93.9	(±2.9) [†]	94.8	(±2.7) [†]	95.0	(±2.7) [†]
Grand Forks, North Dakota*	74.5	(±9.6)	84.4	(±6.4)	90.1	(±4.9) [†]	90.2	(±5.0) [†]	93.8	(±3.2) [†]	95.1	(±2.4) [†]	94.4	(±3.7) [†]
Ward, North Dakota*	80.6	(±8.3)	83.7	(±6.0)	90.8	(±4.9) [†]	88.8	(±5.5)	94.1	(±3.2) [†]	93.4	(±3.9) [†]	94.5	(±3.3) [†]
Cuyahoga, Ohio*	74.6	(±4.4)	85.7	(±3.2)	86.0	(±3.1)	88.3	(±3.0)	93.2	(±2.4) [†]	95.4	(±1.9) [†]	94.5	(±3.1) [†]
Franklin, Ohio*	68.3	(±4.4)	81.2	(±3.6)	85.7	(±3.0)	90.2	(±2.5) [†]	94.7	(±1.8) [†]	93.9	(±3.1) [†]	92.7	(±4.1) [†]
Hamilton, Ohio*	75.9	(±8.1)	85.6	(±5.6)	89.6	(±5.7)	91.2	(±4.5) [†]	93.6	(±3.6) [†]	93.4	(±3.4) [†]	94.4	(±3.7) [†]
Lucas, Ohio	NA	NA	85.6	(±6.0)	NA	NA	91.9	(±4.1) [†]	NA	NA	NA	NA	NA	NA
Montgomery, Ohio	NA	NA	NA	NA	NA	NA	89.0	(±5.2)	NA	NA	NA	NA	NA	NA
Cleveland, Oklahoma*	NA	NA	80.0	(±7.3)	NA	NA	88.6	(±5.5)	93.8	(±3.5) [†]	92.1	(±4.2) [†]	94.8	(±3.2) [†]
Oklahoma, Oklahoma*	67.0	(±8.7)	85.3	(±5.3)	90.4	(±4.0) [†]	86.7	(±4.9)	91.3	(±3.6) [†]	91.5	(±3.8) [†]	93.1	(±3.5) [†]
Tulsa, Oklahoma*	65.3	(±9.0)	86.5	(±4.9)	89.6	(±4.6)	89.0	(±4.8)	92.3	(±3.7) [†]	92.2	(±3.5) [†]	94.2	(±2.9) [†]
Clackamas, Oregon	81.1	(±7.8)	79.7	(±6.7)	85.4	(±6.3)	87.8	(±5.3)	87.5	(±5.9)	NA	NA	89.4	(±5.4)
Lane, Oregon*	71.1	(±9.7)	80.1	(±6.9)	89.8	(±5.5)	87.0	(±6.0)	89.2	(±5.2)	86.8	(±6.1)	90.8	(±5.0) [†]
Marion, Oregon*	73.7	(±9.5)	82.1	(±6.3)	90.2	(±4.9) [†]	89.0	(±5.4)	92.0	(±4.0) [†]	91.2	(±4.7) [†]	91.8	(±4.8) [†]
Multnomah, Oregon*	77.4	(±6.6)	85.9	(±4.7)	88.1	(±4.7)	85.9	(±5.1)	91.3	(±3.8) [†]	89.8	(±4.3)	90.2	(±4.5) [†]
Washington, Oregon*	76.7	(±7.9)	83.2	(±5.9)	82.3	(±6.3)	90.9	(±4.2) [†]	93.5	(±3.2) [†]	90.2	(±4.6) [†]	93.4	(±4.0) [†]
Allegheny, Pennsylvania*	82.6	(±7.2)	85.1	(±5.5)	95.7	(±1.4) [†]	90.5	(±4.5) [†]	95.0	(±2.4) [†]	96.0	(±1.6) [†]	95.1	(±2.9) [†]
Delaware, Pennsylvania*	NA	NA	85.7	(±6.0)	NA	NA	NA	NA	94.4	(±3.0) [†]	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	93.6	(±3.7) [†]
Montgomery, Pennsylvania*	84.3	(±7.2)	90.1	(±4.4) [†]	90.3	(±5.7) [†]	NA	NA	94.1	(±3.3) [†]	NA	NA	94.6	(±3.2) [†]
Philadelphia, Pennsylvania*	76.0	(±4.6)	82.6	(±3.2)	87.6	(±2.8)	86.9	(±2.9)	93.0	(±2.1) [†]	93.5	(±2.1) [†]	95.1	(±1.9) [†]
Kent, Rhode Island*	75.9	(±7.7)	84.5	(±5.2)	91.1	(±4.6) [†]	91.1	(±4.6) [†]	94.1	(±3.2) [†]	95.4	(±2.3) [†]	94.7	(±3.4) [†]
Newport, Rhode Island*	77.2	(±8.7)	79.5	(±7.1)	89.5	(±6.0)	90.1	(±4.6) [†]	NA	NA	92.2	(±4.1) [†]	NA	NA
Providence, Rhode Island*	79.9	(±4.5)	89.1	(±3.0)	93.8	(±2.4) [†]	93.6	(±2.6) [†]	93.4	(±2.3) [†]	94.6	(±2.4) [†]	94.5	(±2.6) [†]
Washington, Rhode Island*	82.8	(±7.2)	86.7	(±5.2)	91.2	(±4.8) [†]	91.9	(±4.2) [†]	92.0	(±4.3) [†]	95.5	(±2.8) [†]	94.6	(±3.5) [†]
Charleston, South Carolina	85.8	(±6.9)	88.5	(±5.0)	90.4	(±5.6) [†]	88.0	(±6.1)	93.2	(±3.8) [†]	93.2	(±4.2) [†]	91.4	(±4.8) [†]
Greenville, South Carolina*	80.3	(±9.3)	86.5	(±5.8)	90.5	(±5.2) [†]	89.5	(±4.8)	94.2	(±3.3) [†]	92.6	(±4.1) [†]	94.0	(±3.3) [†]
Horry, South Carolina*	NA	NA	NA	NA	NA	NA	89.4	(±5.6)	NA	NA	NA	NA	95.8	(±2.1) [†]
Richland, South Carolina	NA	NA	86.9	(±5.7)	93.5	(±3.2) [†]	90.6	(±4.8) [†]	NA	NA	94.8	(±2.9) [†]	92.9	(±3.9) [†]
Spartanburg, South Carolina*	77.6	(±9.7)	84.8	(±6.5)	91.5	(±4.5) [†]	NA	NA	NA	NA	92.6	(±4.5) [†]	94.4	(±3.4) [†]
York, South Carolina	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	94.5	(±3.6) [†]

See table footnotes on page 40.

TABLE 9. (Continued) Estimated vaccination coverage with ≥3 doses of hepatitis B vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Minnehaha, South Dakota*	48.6	(±8.8)	79.0	(±6.1)	91.2	(±4.0) [†]	88.1	(±4.4)	94.3	(±2.7) [†]	94.6	(±2.6) [†]	95.8	(±2.1) [†]
Pennington, South Dakota*	66.5	(±9.8)	85.7	(±5.8)	91.4	(±4.7) [†]	89.8	(±5.3)	94.1	(±3.1) [†]	92.9	(±3.7) [†]	92.8	(±4.1) [†]
Davidson, Tennessee*	73.5	(±4.2)	79.9	(±3.4)	83.8	(±3.1)	91.6	(±2.3) [†]	93.0	(±2.1) [†]	93.2	(±3.3) [†]	94.1	(±3.3) [†]
Hamilton, Tennessee	NA	NA	82.0	(±6.5)	88.5	(±5.7)	89.8	(±5.1)	NA	NA	NA	NA	NA	NA
Knox, Tennessee*	80.5	(±8.8)	87.3	(±4.9)	90.3	(±4.9) [†]	89.9	(±5.4)	94.0	(±3.1) [†]	94.5	(±3.4) [†]	94.2	(±3.6) [†]
Shelby, Tennessee*	77.7	(±4.1)	88.0	(±2.9)	90.2	(±2.5) [†]	91.5	(±2.6) [†]	90.7	(±2.5) [†]	90.9	(±2.8) [†]	92.2	(±4.1) [†]
Bexar, Texas*	69.3	(±4.6)	87.7	(±3.0)	86.9	(±3.2)	90.7	(±2.3) [†]	91.9	(±2.5) [†]	91.2	(±2.7) [†]	94.0	(±2.1) [†]
Collin, Texas	NA	NA	NA	NA	NA	NA	92.4	(±4.1) [†]	NA	NA	94.9	(±2.8) [†]	NA	NA
Dallas, Texas*	72.9	(±4.9)	79.4	(±3.6)	83.8	(±3.4)	83.4	(±3.0)	87.2	(±2.7)	89.3	(±3.3)	89.3	(±2.7)
El Paso, Texas*	74.3	(±4.4)	75.8	(±3.6)	84.1	(±3.2)	84.3	(±3.4)	86.5	(±3.1)	88.7	(±2.6)	93.5	(±2.2) [†]
Harris, Texas*	68.1	(±5.0)	74.7	(±4.2)	78.6	(±4.2)	84.4	(±3.7)	85.0	(±3.3)	90.9	(±2.7) [†]	91.1	(±4.1) [†]
Hidalgo, Texas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	93.5	(±4.5) [†]	NA	NA
Tarrant, Texas*	74.2	(±9.1)	79.2	(±7.1)	87.5	(±6.1)	85.1	(±6.4)	91.8	(±4.4) [†]	93.1	(±3.6) [†]	93.0	(±3.8) [†]
Travis, Texas	NA	NA	NA	NA	88.4	(±5.9)	NA	NA	90.2	(±5.7) [†]	90.7	(±5.0) [†]	NA	NA
Cache, Utah	NA	NA	80.2	(±7.3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Davis, Utah*	69.2	(±9.5)	76.1	(±7.6)	79.0	(±7.3)	87.8	(±5.3)	91.9	(±3.8) [†]	92.2	(±3.9) [†]	93.1	(±3.7) [†]
Salt Lake, Utah*	64.6	(±6.3)	82.2	(±4.3)	82.7	(±4.9)	88.0	(±4.1)	89.2	(±3.8)	92.8	(±3.5) [†]	92.2	(±3.5) [†]
Utah, Utah*	70.0	(±8.0)	69.7	(±6.9)	76.7	(±6.6)	84.7	(±5.0)	91.3	(±3.4) [†]	92.7	(±3.8) [†]	90.1	(±4.5) [†]
Weber, Utah*	64.4	(±10.3) [§]	80.1	(±6.8)	84.3	(±6.5)	90.0	(±5.1)	93.4	(±3.3) [†]	NA	NA	NA	NA
Addison, Vermont*	81.5	(±8.2)	92.2	(±3.5) [†]	NA	NA	85.8	(±6.1)	94.3	(±3.1) [†]	NA	NA	NA	NA
Bennington, Vermont	NA	NA	84.8	(±6.3)	91.4	(±4.9) [†]	NA	NA	NA	NA	NA	NA	NA	NA
Chittenden, Vermont*	73.0	(±6.8)	89.4	(±3.8)	88.5	(±5.6)	90.0	(±3.7)	89.5	(±4.0)	96.2	(±1.9) [†]	93.3	(±3.2) [†]
Franklin, Vermont*	80.6	(±8.6)	84.8	(±7.1)	90.6	(±5.1) [†]	86.5	(±5.6)	90.9	(±4.3) [†]	NA	NA	94.4	(±3.7) [†]
Lamoille, Vermont	NA	NA	NA	NA	NA	NA	NA	NA	96.3	(±1.1) [†]	NA	NA	NA	NA
Orange, Vermont	79.1	(±8.8)	84.7	(±5.7)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rutland, Vermont*	65.8	(±9.3)	86.7	(±5.8)	89.4	(±5.0)	89.8	(±5.2)	92.2	(±4.2) [†]	NA	NA	NA	NA
Washington, Vermont*	66.9	(±10.5) [§]	80.9	(±6.6)	87.6	(±6.2)	87.7	(±5.8)	92.8	(±3.4) [†]	91.8	(±3.9) [†]	94.9	(±3.1) [†]
Windham, Vermont	NA	NA	85.7	(±5.9)	90.5	(±5.3) [†]	86.3	(±6.0)	NA	NA	NA	NA	92.5	(±4.2) [†]
Windsor, Vermont*	75.3	(±8.2)	83.7	(±6.2)	90.5	(±4.8) [†]	87.5	(±5.5)	88.9	(±5.3)	93.6	(±3.4) [†]	NA	NA
Fairfax, Virginia*	77.1	(±7.7)	85.8	(±5.2)	90.8	(±4.7) [†]	88.4	(±5.0)	94.0	(±3.1) [†]	95.3	(±2.6) [†]	94.4	(±2.9) [†]
Loudoun, Virginia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	94.8	(±3.2) [†]
Virginia Beach, Virginia*	NA	NA	81.3	(±7.0)	89.3	(±5.6)	NA	NA	NA	NA	NA	NA	92.5	(±4.3) [†]
Clark, Washington*	78.5	(±9.1)	79.0	(±7.2)	90.1	(±4.9) [†]	88.3	(±5.5)	89.0	(±5.5)	91.0	(±5.0) [†]	NA	NA
King, Washington*	79.5	(±3.5)	80.5	(±3.2)	84.2	(±3.1)	84.9	(±3.0)	89.2	(±2.6)	86.3	(±3.5)	87.5	(±4.4)
Kitsap, Washington	NA	NA	NA	NA	89.3	(±5.7)	NA	NA	88.9	(±5.0)	NA	NA	91.6	(±4.2) [†]
Pierce, Washington*	69.8	(±9.1)	81.2	(±6.0)	88.4	(±4.8)	87.4	(±5.5)	91.9	(±3.8) [†]	90.0	(±4.6)	89.3	(±5.1)
Snohomish, Washington*	75.6	(±9.0)	80.4	(±6.1)	88.2	(±4.9)	86.3	(±5.3)	93.0	(±3.5) [†]	88.2	(±5.2)	88.8	(±5.5)
Spokane, Washington*	69.4	(±9.7)	80.2	(±6.7)	91.3	(±4.5) [†]	82.6	(±6.7)	91.6	(±4.1) [†]	NA	NA	92.8	(±4.1) [†]
Thurston, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.9	(±4.3) [†]
Whatcom, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.8	(±4.5) [†]
Yakima, Washington*	65.8	(±11.0) [§]	79.2	(±7.2)	NA	NA	87.9	(±6.3)	NA	NA	NA	NA	NA	NA
Kanawha, West Virginia*	67.6	(±9.1)	88.3	(±5.0)	89.7	(±5.3)	NA	NA	93.3	(±3.4) [†]	92.9	(±3.7) [†]	94.4	(±3.4) [†]
Brown, Wisconsin	NA	NA	NA	NA	NA	NA	89.8	(±5.2)	NA	NA	NA	NA	NA	NA
Dane, Wisconsin*	82.7	(±7.3)	86.4	(±5.4)	91.3	(±4.6) [†]	90.6	(±4.7) [†]	94.1	(±3.2) [†]	95.9	(±1.8) [†]	93.4	(±3.9) [†]
Milwaukee, Wisconsin*	66.5	(±4.4)	77.4	(±3.5)	84.9	(±3.4)	85.5	(±3.1)	92.8	(±2.2) [†]	93.4	(±2.3) [†]	93.7	(±3.3) [†]
Outagamie, Wisconsin	NA	NA	81.9	(±7.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Waukesha, Wisconsin*	70.9	(±9.0)	83.1	(±6.1)	87.0	(±5.8)	95.1	(±1.9) [†]	91.6	(±3.9) [†]	95.1	(±2.8) [†]	NA	NA
Albany, Wyoming	NA	NA	85.4	(±5.9)	89.4	(±6.5)	NA	NA	88.8	(±6.0)	NA	NA	NA	NA
Campbell, Wyoming*	NA	NA	83.9	(±6.6)	87.0	(±6.0)	89.1	(±5.2)	92.3	(±3.4) [†]	93.8	(±3.3) [†]	95.6	(±2.2) [†]
Fremont, Wyoming*	NA	NA	83.2	(±6.8)	88.9	(±5.7)	86.1	(±6.6)	93.9	(±3.0) [†]	NA	NA	NA	NA
Laramie, Wyoming*	47.1	(±8.5)	85.7	(±5.5)	90.0	(±4.8)	85.8	(±5.9)	92.6	(±3.3) [†]	93.9	(±3.4) [†]	93.2	(±3.6) [†]
Natrona, Wyoming*	58.3	(±9.5)	85.7	(±5.2)	91.4	(±4.6) [†]	90.3	(±4.8) [†]	94.7	(±2.8) [†]	93.1	(±3.9) [†]	93.1	(±3.8) [†]
Sweetwater, Wyoming*	57.4	(±10.3) [§]	79.0	(±7.0)	91.2	(±4.7) [†]	87.1	(±5.9)	NA	NA	89.2	(±5.0)	94.3	(±3.2) [†]
Uinta, Wyoming	NA	NA	NA	NA	89.8	(±5.3)	NA	NA	NA	NA	NA	NA	NA	NA
United States*	75.3	(±0.8)	85.2	(±0.5)	89.0	(±0.5)	89.4	(±0.5)	92.5	(±0.4) [†]	93.1	(±0.4) [†]	93.1	(±0.5) [†]
Sample size, no.	37,282		44,855		45,623		45,052		43,308		38,607		35,447	
All selected counties	75.9 (±1.0)		84.4 (±0.7)		88.3 (±0.6)		88.9 (±0.6)		92.0 (±0.6) [†]		92.5 (±0.6) [†]		92.7 (±0.7) [†]	
Sample size, no.	23,014		29,227		30,362		29,851		28,845		23,485		20,552	
Range, %	47.1–88.9		69.7–92.9		76.7–96.1		78.8–95.1		85–96.3		80.7–96.6		85.8–96.2	

Abbreviations: CI = confidence interval; NA = not available.

* Estimates increased significantly between the first and last biennial periods ($p < 0.05$).[†] Estimate exceeds the *Healthy People 2010* objective of 90% vaccination coverage.[§] Estimate has 95% CI half-width that exceeds 10% and might be imprecise.

TABLE 10. Estimated vaccination coverage with ≥ 1 dose of varicella vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1997–2008

County/Area	1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Jefferson, Alabama*	48.2	(± 4.2)	76.1	(± 3.9)	87.7	(± 3.0)	91.2	(± 2.8) [†]	93.7	(± 2.7) [†]	91.1	(± 4.8) [†]
Madison, Alabama*	42.3	(± 11.3) [§]	56.5	(± 11.4) [§]	NA	NA	88.8	(± 5.7)	87.7	(± 5.7)	92.1	(± 4.4) [†]
Mobile, Alabama*	32.6	(± 9.7)	64.3	(± 10.4) [§]	83.2	(± 7.1)	89.6	(± 5.0)	86.0	(± 6.0)	90.4	(± 5.4) [†]
Montgomery, Alabama*	40.5	(± 10.7) [§]	71.0	(± 10.9) [§]	NA	NA	NA	NA	NA	NA	NA	NA
Shelby, Alabama*	NA	NA	68.7	(± 11.2) [§]	81.1	(± 8.8)	89.1	(± 5.8)	NA	NA	90.5	(± 5.0) [†]
Anchorage, Alaska*	NA	NA	49.2	(± 6.1)	70.0	(± 6.1)	83.4	(± 4.6)	85.9	(± 4.7)	82.9	(± 5.6)
Fairbanks North Star, Alaska*	NA	NA	51.4	(± 10.1) [§]	67.3	(± 8.8)	81.5	(± 6.5)	83.9	(± 6.4)	84.6	(± 6.5)
Kenai Peninsula, Alaska	NA	NA	34.3	(± 12.1) [§]	NA	NA	NA	NA	NA	NA	NA	NA
Matanuska-Susitna, Alaska*	NA	NA	29.2	(± 11.0) [§]	49.4	(± 12.0) [§]	79.5	(± 7.9)	81.5	(± 6.9)	76.5	(± 8.1)
Cochise, Arizona	21.5	(± 8.8)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Coconino, Arizona*	30.2	(± 9.7)	NA	NA	NA	NA	86.2	(± 6.3)	NA	NA	NA	NA
Maricopa, Arizona*	36.0	(± 4.3)	64.4	(± 4.3)	78.7	(± 3.5)	84.5	(± 3.1)	83.4	(± 3.5)	88.4	(± 3.8)
Mohave, Arizona*	NA	NA	50.3	(± 11.9) [§]	73.6	(± 10.0) [§]	NA	NA	NA	NA	NA	NA
Pima, Arizona*	45.2	(± 6.5)	68.5	(± 6.2)	77.2	(± 5.5)	85.5	(± 4.9)	86.1	(± 4.6)	91.2	(± 4.3) [†]
Pinal, Arizona*	27.9	(± 9.7)	57.7	(± 10.9) [§]	69.6	(± 9.2)	75.8	(± 8.8)	85.1	(± 7.2)	NA	NA
Yavapai, Arizona*	NA	NA	NA	NA	57.9	(± 11.8) [§]	76.9	(± 8.7)	NA	NA	NA	NA
Yuma, Arizona*	27.6	(± 9.5)	68.0	(± 9.9)	78.8	(± 8.6)	86.8	(± 6.1)	91.3	(± 4.0) [†]	NA	NA
Benton, Arkansas*	22.9	(± 9.1)	NA	NA	78.6	(± 9.0)	85.2	(± 6.8)	85.9	(± 6.4)	91.5	(± 4.6) [†]
Pulaski, Arkansas*	41.5	(± 9.4)	60.7	(± 9.4)	87.2	(± 6.0)	91.6	(± 4.2) [†]	89.0	(± 5.3)	92.3	(± 4.4) [†]
Washington, Arkansas*	22.4	(± 8.6)	NA	NA	73.8	(± 10.1) [§]	NA	NA	NA	NA	88.3	(± 5.5)
Alameda, California*	NA	NA	72.1	(± 10.3) [§]	81.7	(± 7.5)	89.7	(± 5.3)	88.2	(± 4.1)	91.4	(± 4.2) [†]
Los Angeles, California*	47.7	(± 4.6)	76.2	(± 4.0)	84.7	(± 3.6)	91.5	(± 2.3) [†]	90.1	(± 2.7) [†]	93.2	(± 2.0) [†]
Orange, California*	38.9	(± 9.2)	65.6	(± 9.1)	85.3	(± 6.5)	86.6	(± 5.5)	90.0	(± 4.8)	93.4	(± 3.7) [†]
Riverside, California*	NA	NA	66.7	(± 10.9) [§]	81.1	(± 8.3)	85.5	(± 6.3)	NA	NA	90.4	(± 5.1) [†]
San Bernardino, California*	42.1	(± 10.2) [§]	68.1	(± 10.6) [§]	80.7	(± 8.4)	85.9	(± 6.2)	85.0	(± 4.5)	92.4	(± 3.5) [†]
San Diego, California*	48.6	(± 4.1)	73.3	(± 3.8)	88.0	(± 2.8)	86.7	(± 3.3)	86.6	(± 5.4)	92.5	(± 4.2) [†]
San Mateo, California	48.1	(± 12.7) [§]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Santa Clara, California*	48.7	(± 4.4)	69.8	(± 4.0)	86.6	(± 2.8)	87.5	(± 3.2)	91.8	(± 3.3) [†]	NA	NA
Adams, Colorado*	29.7	(± 9.1)	59.5	(± 10.4) [§]	75.8	(± 8.1)	82.8	(± 7.6)	NA	NA	NA	NA
Arapahoe, Colorado*	41.1	(± 9.9)	60.4	(± 10.5) [§]	79.6	(± 7.6)	87.5	(± 5.8)	NA	NA	92.7	(± 4.4) [†]
Boulder, Colorado*	27.6	(± 9.6)	55.5	(± 11.6) [§]	74.3	(± 9.6)	79.9	(± 7.4)	84.8	(± 6.5)	87.4	(± 6.3)
Denver, Colorado*	31.9	(± 8.8)	63.2	(± 9.3)	86.3	(± 6.7)	88.1	(± 5.7)	NA	NA	NA	NA
Douglas, Colorado*	NA	NA	68.8	(± 11.4) [§]	82.5	(± 8.7)	87.6	(± 5.8)	NA	NA	NA	NA
El Paso, Colorado*	31.1	(± 9.9)	64.0	(± 9.1)	79.5	(± 7.6)	82.7	(± 6.6)	86.7	(± 5.8)	87.6	(± 5.2)
Jefferson, Colorado*	32.6	(± 7.9)	63.8	(± 10.2) [§]	83.8	(± 6.7)	88.2	(± 5.5)	95.1	(± 3.0) [†]	90.1	(± 4.9) [†]
Larimer, Colorado*	NA	NA	55.8	(± 10.7) [§]	77.6	(± 9.2)	NA	NA	85.6	(± 6.7)	NA	NA
Weld, Colorado*	NA	NA	63.8	(± 11.7) [§]	79.3	(± 8.8)	78.2	(± 8.4)	NA	NA	90.3	(± 5.6) [†]
Fairfield, Connecticut*	46.6	(± 7.0)	76.2	(± 6.5)	88.0	(± 4.6)	89.7	(± 5.6)	91.6	(± 3.5) [†]	90.3	(± 4.3) [†]
Hartford, Connecticut*	33.4	(± 7.5)	70.9	(± 7.0)	86.0	(± 5.2)	90.0	(± 3.9)	91.7	(± 3.7) [†]	95.0	(± 2.4) [†]
New Haven, Connecticut*	35.8	(± 7.3)	63.0	(± 7.2)	80.4	(± 6.2)	87.9	(± 5.0)	91.1	(± 3.8) [†]	90.5	(± 4.6) [†]
New London, Connecticut*	28.2	(± 10.1) [§]	58.3	(± 11.1) [§]	NA	NA	88.7	(± 5.6)	84.6	(± 6.7)	89.9	(± 5.2)
Kent, Delaware*	41.3	(± 8.7)	60.0	(± 8.3)	80.2	(± 6.2)	84.8	(± 5.8)	87.0	(± 5.8)	90.5	(± 4.6) [†]
New Castle, Delaware*	35.9	(± 5.0)	66.7	(± 5.1)	81.6	(± 4.0)	87.8	(± 3.6)	90.0	(± 3.4)	93.3	(± 2.6) [†]
Sussex, Delaware*	30.3	(± 8.0)	67.9	(± 8.4)	79.9	(± 7.9)	85.0	(± 5.9)	85.1	(± 7.2)	91.0	(± 3.8) [†]
District of Columbia*	48.0	(± 4.6)	79.7	(± 3.9)	88.0	(± 3.3)	90.3	(± 2.9) [†]	91.3	(± 2.4) [†]	92.3	(± 2.4) [†]
Broward, Florida*	37.5	(± 9.0)	61.2	(± 9.7)	81.1	(± 7.4)	85.7	(± 6.6)	90.2	(± 5.1) [†]	88.0	(± 5.7)
Duval, Florida*	39.7	(± 4.5)	59.0	(± 4.4)	82.8	(± 3.6)	86.4	(± 3.5)	88.9	(± 2.8)	NA	NA
Hillsborough, Florida*	31.5	(± 9.7)	65.1	(± 10.0) [§]	72.7	(± 9.0)	83.0	(± 6.7)	87.1	(± 5.7)	NA	NA
Dade, Florida*	NA	NA	50.1	(± 4.9)	73.7	(± 4.2)	84.0	(± 3.3)	91.0	(± 3.6) [†]	89.7	(± 3.0)
Orange, Florida*	NA	NA	59.4	(± 11.6) [§]	NA	NA	87.7	(± 6.2)	NA	NA	94.6	(± 2.0) [†]
Palm Beach, Florida*	33.0	(± 9.6)	56.7	(± 11.9) [§]	80.2	(± 7.7)	87.4	(± 6.4)	88.8	(± 5.4)	91.4	(± 4.6) [†]
Pinellas, Florida	39.8	(± 10.8) [§]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobb, Georgia*	41.4	(± 10.5) [§]	71.4	(± 9.5)	84.7	(± 6.5)	91.2	(± 4.5) [†]	87.9	(± 5.3)	91.7	(± 4.1) [†]
DeKalb, Georgia*	43.0	(± 6.4)	75.5	(± 5.5)	87.6	(± 3.7)	90.5	(± 3.0) [†]	85.4	(± 5.4)	92.6	(± 3.9) [†]
Fulton, Georgia*	41.7	(± 6.2)	68.9	(± 5.4)	87.4	(± 3.7)	90.0	(± 3.3)	90.0	(± 3.8)	89.3	(± 5.2)
Gwinnett, Georgia*	42.1	(± 10.5) [§]	69.3	(± 11.1) [§]	84.1	(± 7.1)	90.6	(± 4.4) [†]	89.0	(± 5.3)	89.1	(± 5.5)
Hawaii, Hawaii*	38.0	(± 9.6)	67.5	(± 9.6)	81.1	(± 7.4)	90.4	(± 4.3) [†]	81.4	(± 7.3)	93.6	(± 3.7) [†]
Honolulu, Hawaii*	44.1	(± 5.1)	71.3	(± 4.7)	82.9	(± 3.8)	90.1	(± 2.7) [†]	90.4	(± 3.2) [†]	93.0	(± 2.7) [†]
Maui, Hawaii*	41.8	(± 10.9) [§]	60.4	(± 10.2) [§]	77.9	(± 8.0)	91.1	(± 4.3) [†]	77.8	(± 10.1) [§]	94.7	(± 2.8) [†]
Ada, Idaho*	17.6	(± 6.8)	35.9	(± 8.5)	61.8	(± 7.9)	76.9	(± 6.9)	83.3	(± 5.3)	81.0	(± 6.0)
Bannock, Idaho*	20.0	(± 9.7)	39.1	(± 11.5) [§]	65.7	(± 11.8) [§]	NA	NA	NA	NA	NA	NA
Bonneville, Idaho*	18.9	(± 7.6)	37.2	(± 9.1)	72.8	(± 9.4)	85.8	(± 6.1)	83.8	(± 6.6)	85.7	(± 7.1)
Canyon, Idaho*	20.3	(± 9.3)	38.9	(± 10.9) [§]	68.5	(± 8.7)	80.3	(± 7.6)	79.1	(± 7.2)	82.9	(± 7.0)
Kootenai, Idaho*	21.1	(± 8.3)	45.6	(± 11.4) [§]	46.5	(± 12.3) [§]	NA	NA	NA	NA	NA	NA
Twin Falls, Idaho*	18.0	(± 8.5)	NA	NA	61.2	(± 10.8) [§]	NA	NA	NA	NA	NA	NA
Cook, Illinois*	22.8	(± 3.7)	47.2	(± 4.8)	72.6	(± 4.1)	85.4	(± 3.6)	86.0	(± 3.7)	88.9	(± 2.8)
DuPage, Illinois*	43.0	(± 10.0) [§]	45.1	(± 10.4) [§]	67.0	(± 9.9)	86.9	(± 5.6)	NA	NA	88.8	(± 5.1)
Lake, Illinois*	34.7	(± 9.5)	59.9	(± 11.1) [§]	72.0	(± 9.7)	84.2	(± 7.2)	NA	NA	90.3	(± 5.5) [†]

See table footnotes on page 44.

TABLE 10. (Continued) Estimated vaccination coverage with ≥ 1 dose of varicella vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1997–2008

County/Area	1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Will, Illinois*	NA	NA	60.7	(± 11.9) [§]	68.8	(± 8.8)	89.6	(± 5.0)	87.4	(± 5.8)	91.6	(± 4.4) [†]
Allen, Indiana*	26.5	(± 9.2)	50.6	(± 12.2) [§]	65.1	(± 10.4) [§]	77.7	(± 8.7)	NA	NA	87.5	(± 6.1)
Hamilton, Indiana*	38.5	(± 11.6) [§]	64.1	(± 11.5) [§]	79.9	(± 9.0)	88.9	(± 5.5)	NA	NA	90.2	(± 5.1) [†]
Lake, Indiana*	24.8	(± 9.6)	60.0	(± 10.2) [§]	72.1	(± 9.5)	79.0	(± 8.9)	NA	NA	89.5	(± 5.2)
Marion, Indiana*	26.4	(± 4.2)	55.1	(± 4.9)	73.6	(± 4.2)	82.6	(± 3.6)	87.9	(± 4.6)	89.9	(± 4.1)
Linn, Iowa*	30.1	(± 9.9)	NA	NA	74.2	(± 8.9)	80.6	(± 7.6)	NA	NA	87.5	(± 6.5)
Polk, Iowa*	30.3	(± 7.4)	57.0	(± 9.9)	71.2	(± 8.3)	85.6	(± 5.9)	84.9	(± 6.2)	88.7	(± 4.8)
Scott, Iowa*	NA	NA	46.7	(± 12.0) [§]	67.6	(± 9.9)	81.8	(± 7.4)	NA	NA	NA	NA
Johnson, Kansas*	45.4	(± 8.3)	69.3	(± 7.7)	84.1	(± 6.2)	84.8	(± 5.7)	88.2	(± 3.4)	90.3	(± 4.8) [†]
Sedgwick, Kansas*	37.5	(± 8.2)	59.1	(± 8.9)	73.0	(± 8.2)	83.4	(± 5.9)	84.1	(± 6.2)	89.2	(± 4.7)
Shawnee, Kansas*	NA	NA	53.6	(± 12.2) [§]	NA	NA	NA	NA	87.1	(± 6.0)	90.2	(± 5.9) [†]
Fayette, Kentucky*	46.0	(± 11.6) [§]	71.4	(± 10.9) [§]	NA	NA	83.2	(± 7.5)	NA	NA	NA	NA
Jefferson, Kentucky*	39.9	(± 7.8)	73.1	(± 8.1)	81.6	(± 7.2)	87.4	(± 5.7)	88.5	(± 4.8)	89.8	(± 4.7)
Caddo, Louisiana*	35.3	(± 10.4) [§]	61.3	(± 11.8) [§]	NA	NA	NA	NA	91.4	(± 4.7) [†]	91.8	(± 4.8) [†]
East Baton Rouge, Louisiana*	29.2	(± 9.3)	67.4	(± 9.3)	83.8	(± 6.7)	88.7	(± 5.2)	89.5	(± 4.9)	92.0	(± 4.5) [†]
Jefferson, Louisiana*	31.3	(± 9.0)	69.4	(± 9.1)	79.1	(± 8.4)	83.8	(± 7.0)	90.6	(± 4.5) [†]	90.5	(± 4.7) [†]
Lafayette, Louisiana*	30.3	(± 10.4) [§]	NA	NA	NA	NA	82.1	(± 7.2)	NA	NA	90.6	(± 5.1) [†]
Orleans, Louisiana*	27.8	(± 4.3)	56.1	(± 5.0)	73.5	(± 4.4)	86.4	(± 3.3)	88.3	(± 4.3)	88.7	(± 6.3)
St. Tammany, Louisiana*	NA	NA	NA	NA	77.2	(± 9.0)	85.3	(± 7.2)	89.1	(± 4.6)	NA	NA
Androscoggin, Maine*	26.4	(± 9.5)	59.1	(± 11.3) [§]	65.4	(± 10.0) [§]	79.8	(± 8.3)	88.2	(± 5.8)	86.0	(± 6.7)
Aroostook, Maine*	26.8	(± 9.2)	52.6	(± 11.0) [§]	NA	NA	76.5	(± 10.3) [§]	NA	NA	NA	NA
Cumberland, Maine*	26.0	(± 6.1)	54.4	(± 7.8)	74.6	(± 6.7)	75.0	(± 6.7)	88.3	(± 4.4)	87.9	(± 4.8)
Kennebec, Maine*	19.0	(± 7.1)	57.5	(± 11.1) [§]	72.2	(± 10.4) [§]	90.9	(± 4.1) [†]	NA	NA	87.6	(± 6.6)
Penobscot, Maine*	25.6	(± 8.6)	47.6	(± 10.3) [§]	68.3	(± 9.9)	86.0	(± 5.9)	90.5	(± 4.8) [†]	85.5	(± 6.6)
York, Maine*	21.6	(± 6.5)	50.5	(± 9.3)	65.3	(± 8.6)	83.9	(± 6.3)	87.0	(± 5.6)	87.2	(± 5.7)
Anne Arundel, Maryland*	51.2	(± 10.0) [§]	73.6	(± 10.2) [§]	82.0	(± 7.5)	90.8	(± 4.7) [†]	87.9	(± 6.3)	92.0	(± 4.3) [†]
Baltimore, Maryland*	42.9	(± 8.8)	66.0	(± 9.8)	86.6	(± 6.0)	89.7	(± 4.7)	91.6	(± 4.1) [†]	93.3	(± 3.8) [†]
Frederick, Maryland*	NA	NA	70.0	(± 10.7) [§]	85.0	(± 7.4)	87.3	(± 6.5)	NA	NA	NA	NA
Harford, Maryland	NA	NA	NA	NA	NA	NA	90.3	(± 5.0) [†]	NA	NA	NA	NA
Howard, Maryland*	46.4	(± 11.1) [§]	72.0	(± 10.7) [§]	83.1	(± 7.4)	88.9	(± 5.5)	NA	NA	94.2	(± 3.4) [†]
Montgomery, Maryland*	48.4	(± 8.2)	75.4	(± 7.6)	87.6	(± 4.9)	89.8	(± 4.3)	92.0	(± 4.1) [†]	94.7	(± 2.7) [†]
Prince George's, Maryland*	48.2	(± 9.1)	75.9	(± 7.5)	83.4	(± 6.6)	92.2	(± 4.1) [†]	85.5	(± 6.1)	93.7	(± 3.5) [†]
City of Baltimore, Maryland*	NA	NA	76.8	(± 4.1)	89.7	(± 2.9)	90.4	(± 2.8) [†]	89.9	(± 3.1)	91.3	(± 3.7) [†]
Bristol, Massachusetts*	31.2	(± 8.4)	72.0	(± 9.7)	81.2	(± 8.6)	86.4	(± 6.2)	90.7	(± 4.4) [†]	NA	NA
Essex, Massachusetts*	39.6	(± 8.9)	70.6	(± 8.7)	82.7	(± 6.3)	81.8	(± 7.3)	90.6	(± 4.6) [†]	87.8	(± 6.2)
Hampden, Massachusetts*	34.6	(± 9.7)	71.3	(± 10.7) [§]	80.8	(± 8.7)	87.9	(± 5.8)	NA	NA	NA	NA
Middlesex, Massachusetts*	31.2	(± 6.5)	64.1	(± 7.8)	85.6	(± 4.8)	86.3	(± 5.0)	92.8	(± 3.2) [†]	91.7	(± 4.0) [†]
Norfolk, Massachusetts*	36.8	(± 9.1)	62.8	(± 10.7) [§]	84.0	(± 7.1)	90.2	(± 5.2) [†]	92.1	(± 3.8) [†]	93.9	(± 3.2) [†]
Plymouth, Massachusetts*	36.8	(± 10.5) [§]	73.1	(± 10.3) [§]	78.9	(± 8.8)	89.5	(± 5.5)	NA	NA	90.6	(± 5.2) [†]
Suffolk, Massachusetts*	37.6	(± 5.4)	74.7	(± 4.6)	84.5	(± 3.7)	91.2	(± 3.0) [†]	92.5	(± 3.6) [†]	94.5	(± 3.0) [†]
Worcester, Massachusetts*	28.7	(± 8.4)	64.1	(± 9.3)	78.0	(± 6.8)	87.2	(± 6.0)	91.6	(± 4.1) [†]	88.8	(± 5.1)
Kent, Michigan*	30.6	(± 10.7) [§]	67.9	(± 10.0) [§]	81.7	(± 8.4)	85.5	(± 7.1)	NA	NA	91.6	(± 4.5) [†]
Macomb, Michigan*	29.9	(± 9.5)	63.8	(± 11.2) [§]	78.2	(± 8.2)	89.1	(± 5.7)	87.1	(± 5.9)	NA	NA
Oakland, Michigan*	29.6	(± 8.4)	61.9	(± 9.8)	86.4	(± 6.1)	85.5	(± 5.9)	92.5	(± 3.4) [†]	88.9	(± 5.2)
Wayne, Michigan*	22.7	(± 4.7)	49.9	(± 5.9)	79.6	(± 5.0)	90.2	(± 2.9) [†]	86.8	(± 4.6)	87.8	(± 5.1)
Anoka, Minnesota*	41.6	(± 10.8) [§]	72.3	(± 10.2) [§]	78.2	(± 8.9)	NA	NA	NA	NA	88.4	(± 5.7)
Dakota, Minnesota*	36.2	(± 10.3) [§]	61.7	(± 11.0) [§]	82.8	(± 7.8)	88.5	(± 5.7)	86.4	(± 6.2)	89.8	(± 5.7)
Hennepin, Minnesota*	46.2	(± 7.7)	68.2	(± 7.8)	79.7	(± 6.5)	84.9	(± 5.9)	90.9	(± 4.0) [†]	89.6	(± 3.7)
Ramsey, Minnesota*	37.6	(± 9.4)	58.8	(± 11.1) [§]	81.4	(± 7.7)	83.2	(± 7.2)	89.5	(± 4.8)	92.5	(± 3.9) [†]
Washington, Minnesota	42.7	(± 11.7) [§]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Harrison, Mississippi*	33.4	(± 9.1)	NA	NA	NA	NA	NA	NA	88.3	(± 5.2)	NA	NA
Hinds, Mississippi*	24.5	(± 9.2)	58.5	(± 10.4) [§]	68.8	(± 10.4) [§]	NA	NA	87.1	(± 5.7)	87.6	(± 6.1)
Greene, Missouri	NA	NA	NA	NA	75.8	(± 9.8)	NA	NA	NA	NA	NA	NA
Jackson, Missouri*	35.3	(± 10.0) [§]	71.7	(± 9.0)	80.0	(± 8.1)	89.0	(± 5.0)	95.6	(± 2.6) [†]	90.3	(± 4.7) [†]
Jefferson, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	87.1	(± 6.6)
St. Charles, Missouri*	30.8	(± 10.3) [§]	NA	NA	NA	NA	NA	NA	NA	NA	90.6	(± 4.9) [†]
St. Louis, Missouri*	45.0	(± 8.5)	67.7	(± 8.1)	79.4	(± 6.9)	88.6	(± 4.8)	89.6	(± 3.8)	92.2	(± 4.4) [†]
City of St. Louis, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	87.6	(± 6.8)
Cascade, Montana*	29.7	(± 7.3)	61.6	(± 10.3) [§]	71.3	(± 9.7)	84.2	(± 7.1)	85.4	(± 6.0)	86.8	(± 6.4)
Flathead, Montana*	16.1	(± 7.7)	40.1	(± 12.2) [§]	52.0	(± 11.4) [§]	71.3	(± 9.2)	68.3	(± 10.7) [§]	74.9	(± 9.3)
Gallatin, Montana*	22.4	(± 8.7)	43.7	(± 11.4) [§]	61.5	(± 11.6) [§]	75.8	(± 8.7)	78.5	(± 7.9)	84.1	(± 7.1)
Lewis and Clark, Montana*	18.8	(± 8.5)	35.8	(± 11.8) [§]	61.4	(± 11.4) [§]	NA	NA	NA	NA	84.1	(± 7.4)
Missoula, Montana*	41.0	(± 9.2)	49.9	(± 11.4) [§]	71.4	(± 9.2)	75.5	(± 8.1)	83.6	(± 6.2)	81.1	(± 7.7)
Yellowstone, Montana*	43.2	(± 8.6)	60.8	(± 8.9)	69.8	(± 8.3)	83.4	(± 6.2)	88.3	(± 4.6)	79.9	(± 7.7)
Douglas, Nebraska*	41.1	(± 7.1)	64.8	(± 7.4)	79.1	(± 5.7)	85.3	(± 5.0)	91.4	(± 3.4) [†]	94.4	(± 2.4) [†]
Lancaster, Nebraska*	31.6	(± 7.5)	68.8	(± 8.1)	73.0	(± 8.1)	83.5	(± 6.0)	88.7	(± 5.0)	88.2	(± 5.9)
Sarpy, Nebraska*	39.0	(± 9.9)	65.6	(± 10.8) [§]	76.8	(± 9.2)	84.3	(± 6.6)	NA	NA	NA	NA
Clark, Nevada*	20.6	(± 4.2)	58.2	(± 5.1)	71.4	(± 4.9)	78.5	(± 4.0)	82.0	(± 4.0)	85.4	(± 3.8)

See table footnotes on page 44.

TABLE 10. (Continued) Estimated vaccination coverage with ≥1 dose of varicella vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1997–2008

County/Area	1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Washoe, Nevada*	28.1	(±7.7)	59.0	(±8.0)	78.0	(±7.2)	83.7	(±5.8)	88.3	(±4.9)	90.4	(±4.4) [†]
Grafton, New Hampshire*	26.0	(±9.7)	40.1	(±10.8) [§]	64.6	(±11.1) [§]	65.6	(±12.4) [§]	NA	NA	92.9	(±4.3) [†]
Hillsborough, New Hampshire*	36.0	(±6.1)	67.0	(±7.2)	78.4	(±5.6)	85.8	(±4.7)	87.2	(±4.4)	93.0	(±3.3) [†]
Merrimack, New Hampshire*	27.4	(±8.5)	47.4	(±11.4) [§]	68.2	(±9.8)	85.0	(±6.1)	83.4	(±7.2)	89.1	(±5.5)
Rockingham, New Hampshire*	36.4	(±7.2)	71.3	(±6.9)	74.6	(±6.8)	84.5	(±5.7)	86.5	(±4.8)	90.7	(±4.3) [†]
Strafford, New Hampshire*	25.3	(±9.0)	50.1	(±10.3) [§]	69.8	(±10.3) [§]	81.6	(±7.3)	88.3	(±5.4)	88.5	(±5.8)
Bergen, New Jersey*	45.2	(±10.5) [§]	59.1	(±9.8)	79.1	(±7.6)	85.3	(±6.5)	93.8	(±3.3) [†]	91.0	(±5.1) [†]
Burlington, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	91.0	(±4.9) [†]
Camden, New Jersey*	39.3	(±11.0) [§]	66.4	(±11.2) [§]	79.5	(±8.4)	NA	NA	90.3	(±4.7) [†]	89.5	(±6.0)
Essex, New Jersey*	34.4	(±8.6)	50.3	(±8.8)	74.1	(±7.7)	86.9	(±4.6)	89.0	(±4.6)	90.7	(±4.5) [†]
Hudson, New Jersey*	33.5	(±10.3) [§]	66.0	(±11.3) [§]	82.1	(±7.9)	84.7	(±6.6)	NA	NA	91.0	(±4.8) [†]
Middlesex, New Jersey*	39.8	(±11.1) [§]	68.5	(±10.9) [§]	81.4	(±7.5)	86.8	(±6.1)	88.2	(±5.3)	90.6	(±4.8) [†]
Monmouth, New Jersey*	43.0	(±12.1) [§]	62.4	(±10.0) [§]	75.8	(±9.0)	NA	NA	92.3	(±4.0) [†]	86.7	(±6.4)
Ocean, New Jersey	NA	NA	NA	NA	NA	NA	78.5	(±8.8)	87.4	(±5.7)	83.1	(±7.5)
Passaic, New Jersey*	NA	NA	63.5	(±10.7) [§]	80.9	(±7.9)	84.3	(±6.8)	NA	NA	NA	NA
Union, New Jersey*	40.2	(±12.9) [§]	72.4	(±9.6)	78.7	(±8.4)	84.2	(±6.6)	NA	NA	91.8	(±4.6) [†]
Bernalillo, New Mexico*	37.7	(±7.6)	62.9	(±8.0)	82.3	(±5.2)	87.2	(±5.7)	87.9	(±4.5)	91.9	(±3.6) [†]
Dona Ana, New Mexico*	24.9	(±8.6)	65.2	(±9.1)	74.8	(±9.1)	83.9	(±7.0)	NA	NA	92.4	(±4.0) [†]
Sandoval, New Mexico	NA	NA	NA	NA	NA	NA	85.3	(±7.0)	NA	NA	90.6	(±5.0) [†]
San Juan, New Mexico*	NA	NA	61.5	(±11.3) [§]	69.5	(±10.5) [§]	85.3	(±6.4)	84.7	(±6.7)	86.4	(±6.6)
Santa Fe, New Mexico*	NA	NA	53.4	(±11.3) [§]	NA	NA	84.2	(±7.0)	NA	NA	NA	NA
Bronx, New York*	38.2	(±9.0)	69.5	(±8.3)	88.2	(±5.0)	91.3	(±4.2) [†]	85.8	(±5.9)	92.9	(±3.6) [†]
Erie, New York*	29.3	(±10.0) [§]	65.7	(±9.5)	77.1	(±8.7)	84.2	(±7.3)	89.6	(±5.1)	NA	NA
Kings, New York*	35.2	(±7.0)	63.0	(±7.0)	78.6	(±6.2)	88.3	(±4.2)	85.7	(±4.3)	87.2	(±4.0)
Monroe, New York*	28.1	(±10.3) [§]	67.9	(±10.6) [§]	77.4	(±9.6)	86.0	(±6.2)	90.1	(±4.6) [†]	91.8	(±5.0) [†]
Nassau, New York*	42.2	(±11.2) [§]	69.0	(±8.8)	80.8	(±7.3)	85.9	(±6.3)	93.6	(±3.5) [†]	92.2	(±4.2) [†]
New York, New York*	38.3	(±11.8) [§]	77.1	(±8.2)	90.7	(±4.9) [†]	91.8	(±4.5) [†]	93.2	(±3.5) [†]	93.1	(±3.6) [†]
Queens, New York*	38.6	(±7.8)	66.5	(±7.3)	82.8	(±5.3)	91.3	(±3.7) [†]	90.8	(±4.0) [†]	92.6	(±3.5) [†]
Suffolk, New York*	42.1	(±8.7)	66.1	(±8.3)	79.7	(±6.5)	83.9	(±6.8)	87.5	(±5.1)	88.2	(±5.4)
Westchester, New York*	43.3	(±11.2) [§]	62.4	(±10.3) [§]	85.9	(±6.4)	86.0	(±6.7)	94.4	(±3.3) [†]	NA	NA
Durham, North Carolina	NA	NA	NA	NA	NA	NA	88.1	(±6.0)	NA	NA	NA	NA
Guilford, North Carolina*	34.8	(±10.5) [§]	59.7	(±11.5) [§]	NA	NA	NA	NA	NA	NA	NA	NA
Mecklenburg, North Carolina*	48.3	(±10.2) [§]	74.0	(±9.8)	86.1	(±6.5)	90.4	(±4.9) [†]	89.8	(±4.9)	92.6	(±4.3) [†]
Wake, North Carolina*	51.8	(±11.7) [§]	70.0	(±9.1)	83.4	(±7.2)	89.4	(±5.3)	92.5	(±3.6) [†]	94.6	(±2.7) [†]
Burleigh, North Dakota*	34.7	(±9.0)	59.3	(±9.6)	74.6	(±9.2)	83.5	(±6.9)	86.8	(±5.9)	89.1	(±5.1)
Cass, North Dakota*	38.3	(±7.8)	67.8	(±7.7)	80.5	(±6.6)	82.8	(±5.9)	92.9	(±3.3) [†]	90.9	(±4.0) [†]
Grand Forks, North Dakota*	43.1	(±9.8)	58.2	(±10.5) [§]	72.4	(±8.7)	79.7	(±7.7)	89.2	(±5.2)	89.4	(±5.7)
Ward, North Dakota*	17.6	(±8.0)	40.1	(±8.4)	55.0	(±10.4) [§]	75.6	(±8.0)	81.4	(±7.8)	86.5	(±5.9)
Cuyahoga, Ohio*	35.5	(±4.2)	58.0	(±4.4)	78.8	(±4.0)	87.4	(±3.3)	87.8	(±3.1)	91.5	(±4.1) [†]
Franklin, Ohio*	36.0	(±4.4)	66.7	(±4.1)	79.4	(±3.7)	85.6	(±3.0)	89.0	(±4.5)	90.8	(±4.1) [†]
Hamilton, Ohio*	31.4	(±9.2)	53.8	(±10.6) [§]	75.8	(±8.6)	87.9	(±5.8)	89.6	(±4.7)	92.9	(±4.1) [†]
Lucas, Ohio*	32.6	(±10.6) [§]	NA	NA	79.8	(±7.3)	NA	NA	NA	NA	NA	NA
Montgomery, Ohio	NA	NA	NA	NA	72.9	(±9.4)	NA	NA	NA	NA	NA	NA
Cleveland, Oklahoma*	35.0	(±10.1) [§]	NA	NA	75.5	(±9.7)	86.1	(±6.3)	86.8	(±6.3)	88.1	(±5.9)
Oklahoma, Oklahoma*	39.3	(±8.8)	65.6	(±8.2)	78.1	(±6.8)	87.9	(±4.9)	87.9	(±4.8)	88.4	(±5.1)
Tulsa, Oklahoma*	40.9	(±8.7)	71.7	(±8.1)	85.4	(±5.9)	89.3	(±4.9)	87.3	(±5.1)	92.1	(±3.7) [†]
Clackamas, Oregon*	31.0	(±9.2)	74.0	(±9.3)	77.5	(±8.5)	84.1	(±7.8)	NA	NA	83.8	(±7.5)
Lane, Oregon*	36.6	(±10.3) [§]	68.9	(±11.4) [§]	77.1	(±9.1)	84.4	(±7.7)	87.3	(±5.6)	84.7	(±7.7)
Marion, Oregon*	28.8	(±8.7)	58.9	(±10.3) [§]	72.8	(±9.2)	79.1	(±7.9)	86.4	(±5.9)	89.0	(±5.9)
Multnomah, Oregon*	42.3	(±8.2)	71.8	(±7.7)	74.9	(±7.0)	83.0	(±5.9)	81.1	(±6.3)	87.3	(±5.2)
Washington, Oregon*	46.7	(±9.4)	68.8	(±8.7)	78.9	(±7.8)	86.8	(±5.3)	86.0	(±5.4)	93.0	(±3.5) [†]
Allegheny, Pennsylvania*	47.2	(±9.6)	68.0	(±9.6)	80.7	(±7.7)	90.3	(±4.9) [†]	95.0	(±1.8) [†]	89.6	(±4.9)
Delaware, Pennsylvania*	42.2	(±11.0) [§]	NA	NA	NA	NA	90.0	(±5.4)	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	87.1	(±6.3)
Montgomery, Pennsylvania*	50.6	(±11.0) [§]	68.8	(±10.7) [§]	NA	NA	86.6	(±7.1)	NA	NA	91.9	(±4.2) [†]
Philadelphia, Pennsylvania*	53.4	(±4.4)	77.4	(±3.7)	86.3	(±3.1)	89.7	(±2.7)	92.5	(±2.4) [†]	91.9	(±2.6) [†]
Kent, Rhode Island*	46.0	(±8.7)	75.6	(±8.1)	83.4	(±6.7)	86.7	(±6.4)	92.3	(±3.8) [†]	89.9	(±5.4)
Newport, Rhode Island*	30.0	(±9.3)	65.8	(±11.3) [§]	75.9	(±9.4)	NA	NA	88.9	(±5.4)	NA	NA
Providence, Rhode Island*	45.0	(±5.1)	77.6	(±4.7)	87.4	(±4.1)	89.5	(±3.5)	96.5	(±1.8) [†]	90.1	(±3.4) [†]
Washington, Rhode Island*	42.6	(±9.0)	67.6	(±8.9)	79.1	(±8.0)	84.1	(±6.3)	92.3	(±3.8) [†]	92.1	(±4.5) [†]
Charleston, South Carolina*	33.4	(±9.6)	72.0	(±9.6)	84.9	(±7.0)	87.6	(±6.0)	92.4	(±3.9) [†]	89.0	(±5.8)
Greenville, South Carolina*	42.0	(±10.0) [§]	66.5	(±9.5)	79.2	(±7.8)	89.7	(±5.1)	88.7	(±5.7)	87.1	(±5.8)
Horry, South Carolina*	NA	NA	NA	NA	75.0	(±9.7)	NA	NA	NA	NA	87.4	(±6.8)
Richland, South Carolina*	42.7	(±11.4) [§]	67.8	(±10.1) [§]	82.1	(±7.9)	NA	NA	89.7	(±5.0)	91.7	(±4.4) [†]
Spartanburg, South Carolina*	38.7	(±10.3) [§]	68.4	(±10.5) [§]	NA	NA	NA	NA	87.1	(±6.2)	90.9	(±4.8) [†]
York, South Carolina	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	87.4	(±5.7)
Minnehaha, South Dakota*	19.5	(±7.5)	42.1	(±9.1)	63.5	(±8.2)	79.5	(±6.7)	86.4	(±5.2)	90.9	(±4.0) [†]
Pennington, South Dakota*	20.2	(±7.2)	48.6	(±10.5) [§]	69.1	(±10.9) [§]	86.3	(±5.8)	85.9	(±5.8)	86.2	(±6.4)

See table footnotes on page 44.

TABLE 10. (Continued) Estimated vaccination coverage with ≥ 1 dose of varicella vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1997–2008

County/Area	1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Davidson, Tennessee*	39.3	(± 4.3)	63.4	(± 4.3)	79.4	(± 3.9)	90.5	(± 2.7) [†]	88.4	(± 4.7)	94.0	(± 3.0) [†]
Hamilton, Tennessee*	34.6	(± 9.8)	61.7	(± 10.5) [§]	85.7	(± 7.1)	NA	NA	NA	NA	NA	NA
Knox, Tennessee*	34.7	(± 9.3)	59.3	(± 10.6) [§]	81.6	(± 7.8)	84.3	(± 6.6)	91.9	(± 4.1) [†]	89.4	(± 6.4)
Shelby, Tennessee*	29.1	(± 3.9)	58.6	(± 4.5)	77.9	(± 3.9)	88.5	(± 2.8)	86.8	(± 3.4)	89.5	(± 5.2)
Bexar, Texas*	35.2	(± 4.4)	69.6	(± 4.4)	87.8	(± 2.9)	88.1	(± 3.2)	89.5	(± 2.9)	92.1	(± 2.3) [†]
Collin, Texas	NA	NA	NA	NA	83.6	(± 8.0)	NA	NA	90.5	(± 4.7) [†]	NA	NA
Dallas, Texas*	31.6	(± 4.4)	63.8	(± 4.5)	79.4	(± 3.4)	87.0	(± 2.9)	88.6	(± 3.5)	89.9	(± 2.5)
El Paso, Texas*	28.5	(± 3.6)	71.1	(± 4.0)	81.3	(± 3.7)	86.5	(± 3.3)	87.7	(± 2.9)	91.5	(± 2.6) [†]
Harris, Texas*	29.8	(± 4.5)	62.8	(± 4.9)	82.8	(± 3.7)	82.2	(± 3.8)	86.0	(± 3.9)	92.2	(± 2.4) [†]
Hidalgo, Texas	NA	NA	NA	NA	NA	NA	NA	NA	89.0	(± 5.4)	NA	NA
Tarrant, Texas*	38.8	(± 10.2) [§]	58.8	(± 10.7) [§]	79.4	(± 8.7)	88.4	(± 5.5)	90.0	(± 4.6)	91.9	(± 4.2) [†]
Travis, Texas*	NA	NA	69.4	(± 10.8) [§]	NA	NA	87.3	(± 6.4)	90.2	(± 4.8) [†]	NA	NA
Cache, Utah	22.1	(± 9.8)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Davis, Utah*	22.9	(± 7.4)	51.6	(± 9.8)	76.9	(± 8.1)	84.5	(± 6.4)	85.6	(± 6.2)	90.2	(± 4.9) [†]
Salt Lake, Utah*	28.3	(± 5.7)	61.7	(± 6.5)	78.4	(± 5.8)	82.2	(± 5.4)	88.0	(± 4.9)	89.4	(± 4.5)
Utah, Utah*	23.5	(± 6.8)	46.0	(± 8.9)	66.6	(± 7.5)	83.5	(± 5.6)	85.5	(± 5.9)	86.0	(± 5.6)
Weber, Utah*	25.7	(± 8.6)	55.7	(± 11.2) [§]	81.3	(± 8.1)	86.3	(± 6.1)	NA	NA	NA	NA
Addison, Vermont*	28.2	(± 7.8)	NA	NA	69.0	(± 9.8)	77.5	(± 8.9)	NA	NA	NA	NA
Bennington, Vermont	34.2	(± 10.1) [§]	45.3	(± 12.3) [§]	NA	NA	NA	NA	NA	NA	NA	NA
Chittenden, Vermont*	31.6	(± 6.9)	56.7	(± 8.0)	75.4	(± 6.2)	79.7	(± 5.9)	84.6	(± 5.3)	86.4	(± 5.3)
Franklin, Vermont*	22.3	(± 9.5)	33.5	(± 11.2) [§]	53.4	(± 10.9) [§]	65.6	(± 10.7) [§]	NA	NA	83.0	(± 7.4)
Lamoille, Vermont	NA	NA	NA	NA	NA	NA	71.7	(± 9.7)	NA	NA	NA	NA
Orange, Vermont	30.7	(± 9.1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rutland, Vermont*	31.2	(± 8.6)	54.6	(± 10.1) [§]	63.5	(± 11.0) [§]	78.7	(± 7.6)	NA	NA	NA	NA
Washington, Vermont*	28.0	(± 8.9)	59.0	(± 12.4) [§]	69.8	(± 10.5) [§]	76.3	(± 8.1)	81.3	(± 7.2)	77.9	(± 8.6)
Windham, Vermont*	26.1	(± 8.5)	57.6	(± 10.8) [§]	60.1	(± 10.9) [§]	NA	NA	NA	NA	86.2	(± 6.7)
Windsor, Vermont*	24.0	(± 8.9)	45.1	(± 11.0) [§]	59.1	(± 10.7) [§]	80.1	(± 7.6)	76.9	(± 8.9)	NA	NA
Fairfax, Virginia*	44.7	(± 8.3)	75.2	(± 8.0)	81.2	(± 7.1)	92.2	(± 3.6) [†]	91.9	(± 3.7) [†]	93.2	(± 3.3) [†]
Loudoun, Virginia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	90.3	(± 5.3) [†]
Virginia Beach, Virginia*	41.2	(± 10.5) [§]	64.6	(± 11.1) [§]	NA	NA	NA	NA	NA	NA	92.0	(± 4.2) [†]
Clark, Washington*	26.1	(± 9.1)	56.9	(± 10.4) [§]	71.6	(± 9.9)	80.0	(± 8.0)	85.1	(± 6.2)	NA	NA
King, Washington*	19.6	(± 3.3)	46.6	(± 4.2)	66.3	(± 4.0)	79.8	(± 3.4)	82.3	(± 4.0)	84.6	(± 4.9)
Kitsap, Washington*	NA	NA	55.8	(± 11.6) [§]	NA	NA	76.0	(± 8.8)	NA	NA	83.9	(± 7.0)
Pierce, Washington*	30.5	(± 8.8)	47.7	(± 8.5)	68.7	(± 8.7)	82.0	(± 6.9)	85.1	(± 5.9)	85.2	(± 6.5)
Snohomish, Washington*	23.7	(± 7.4)	48.8	(± 9.3)	63.0	(± 8.6)	74.4	(± 7.3)	79.2	(± 7.2)	85.6	(± 7.5)
Spokane, Washington*	19.9	(± 8.5)	39.3	(± 10.6) [§]	57.9	(± 10.8) [§]	70.0	(± 9.2)	NA	NA	85.0	(± 7.5)
Thurston, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	82.1	(± 7.0)
Whatcom, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	85.1	(± 6.5)
Yakima, Washington*	24.0	(± 10.5) [§]	NA	NA	69.7	(± 10.5) [§]	NA	NA	NA	NA	NA	NA
Kanawha, West Virginia*	36.5	(± 9.8)	62.0	(± 9.7)	NA	NA	81.5	(± 7.8)	86.7	(± 5.5)	87.0	(± 6.4)
Brown, Wisconsin	NA	NA	NA	NA	79.0	(± 9.2)	NA	NA	NA	NA	NA	NA
Dane, Wisconsin*	29.8	(± 9.2)	63.3	(± 9.8)	76.8	(± 8.8)	87.5	(± 6.1)	91.2	(± 4.4) [†]	89.9	(± 5.4)
Milwaukee, Wisconsin*	31.3	(± 3.9)	53.9	(± 4.7)	76.5	(± 3.9)	86.3	(± 3.2)	89.2	(± 3.3)	89.2	(± 4.7)
Outagamie, Wisconsin	35.5	(± 10.7) [§]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Waukesha, Wisconsin*	33.3	(± 9.9)	61.1	(± 9.6)	74.4	(± 8.7)	86.0	(± 6.1)	89.5	(± 4.6)	NA	NA
Albany, Wyoming*	24.9	(± 8.2)	59.9	(± 12.3) [§]	NA	NA	81.9	(± 8.8)	NA	NA	NA	NA
Campbell, Wyoming*	24.4	(± 8.5)	46.9	(± 11.2) [§]	59.8	(± 10.8) [§]	75.9	(± 8.5)	80.6	(± 7.9)	89.3	(± 5.4)
Fremont, Wyoming*	19.3	(± 8.2)	42.4	(± 11.3) [§]	64.6	(± 11.6) [§]	65.5	(± 12.6) [§]	NA	NA	NA	NA
Laramie, Wyoming*	32.3	(± 8.1)	67.7	(± 8.5)	69.4	(± 8.7)	80.7	(± 6.7)	84.7	(± 6.2)	86.8	(± 5.5)
Natrona, Wyoming*	22.0	(± 6.6)	51.6	(± 9.6)	69.6	(± 8.3)	71.2	(± 8.6)	83.4	(± 6.2)	83.5	(± 6.7)
Sweetwater, Wyoming*	20.3	(± 8.2)	41.2	(± 10.8) [§]	67.8	(± 9.8)	NA	NA	79.7	(± 8.6)	88.7	(± 5.2)
Uinta, Wyoming	NA	NA	55.6	(± 12.6) [§]	NA	NA	NA	NA	NA	NA	NA	NA
United States*	34.4	(± 0.7)	62.6	(± 0.7)	78.5	(± 0.6)	86.4	(± 0.5)	88.5	(± 0.5)	90.3	(± 0.5) [†]
Sample size, no.	44,855		45,623		45,052		43,308		38,607		35,447	
All selected counties	37.2	(± 0.9)	64.4	(± 0.9)	79.9	(± 0.8)	87.1	(± 0.6)	88.8	(± 0.7)	90.5	(± 0.6) [†]
Sample size, no.	29,227		30,362		29,851		28,845		23,485		20,552	
Range, %	16.1–53.4		29.2–79.7		46.5–90.7		65.5–92.2		68.3–96.5		74.9–95	

Abbreviations: CI = confidence interval; NA = not available.

* Estimates increased significantly between the first and last biennial periods ($p < 0.05$).† Estimate exceeds the *Healthy People 2010* objective of 90% vaccination coverage.

§ Estimate has 95% CI half-width that exceeds 10% and might be imprecise.

TABLE 11. Estimated vaccination coverage with ≥ 3 doses of PCV7 vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Jefferson, Alabama*	79.1	(± 4.1)	92.9	(± 3.2) [†]	95.1	(± 2.6) [†]
Madison, Alabama*	64.7	(± 11.0) [§]	88.1	(± 6.2)	92.4	(± 4.1) [†]
Mobile, Alabama*	73.8	(± 10.0) [§]	87.2	(± 6.2)	92.7	(± 3.9) [†]
Shelby, Alabama*	74.3	(± 10.8) [§]	NA	NA	94.2	(± 3.2) [†]
Anchorage, Alaska*	80.1	(± 5.6)	82.6	(± 5.8)	90.3	(± 4.0) [†]
Fairbanks North Star, Alaska*	69.3	(± 8.0)	82.5	(± 6.8)	91.8	(± 4.3) [†]
Matanuska-Susitna, Alaska*	61.6	(± 11.1) [§]	74.2	(± 8.8)	89.7	(± 4.9)
Coconino, Arizona	73.7	(± 9.8)	NA	NA	NA	NA
Maricopa, Arizona*	68.5	(± 4.3)	83.3	(± 3.6)	88.3	(± 4.0)
Pima, Arizona*	71.9	(± 6.4)	87.5	(± 5.2)	90.9	(± 5.0) [†]
Pinal, Arizona*	62.9	(± 10.9) [§]	80.6	(± 9.3)	NA	NA
Yavapai, Arizona	63.4	(± 10.5) [§]	NA	NA	NA	NA
Yuma, Arizona*	63.0	(± 9.9)	85.2	(± 8.1)	NA	NA
Benton, Arkansas*	62.7	(± 11.2) [§]	84.7	(± 7.5)	92.8	(± 3.9) [†]
Pulaski, Arkansas*	74.7	(± 9.2)	84.1	(± 8.0)	94.5	(± 3.2) [†]
Washington, Arkansas	NA	NA	NA	NA	91.4	(± 4.4) [†]
Alameda, California*	78.5	(± 8.3)	88.0	(± 4.7)	92.0	(± 4.2) [†]
Los Angeles, California*	69.8	(± 4.4)	87.1	(± 3.0)	93.9	(± 2.0) [†]
Orange, California*	70.8	(± 8.4)	85.8	(± 6.6)	90.5	(± 5.2) [†]
Riverside, California*	60.3	(± 10.4) [§]	NA	NA	90.7	(± 5.2) [†]
San Bernardino, California*	68.3	(± 10.5) [§]	82.2	(± 4.6)	90.8	(± 4.1) [†]
San Diego, California*	69.2	(± 4.4)	87.2	(± 5.1)	93.3	(± 3.6) [†]
Santa Clara, California*	81.0	(± 4.0)	92.5	(± 2.4) [†]	NA	NA
Adams, Colorado	67.9	(± 10.3) [§]	NA	NA	NA	NA
Arapahoe, Colorado*	67.5	(± 9.6)	NA	NA	93.3	(± 4.1) [†]
Boulder, Colorado*	68.7	(± 9.8)	84.6	(± 7.1)	92.6	(± 4.2) [†]
Denver, Colorado	72.8	(± 8.9)	NA	NA	NA	NA
Douglas, Colorado	69.8	(± 10.3) [§]	NA	NA	NA	NA
El Paso, Colorado*	65.0	(± 9.0)	83.7	(± 7.0)	88.8	(± 5.4)
Jefferson, Colorado*	76.1	(± 8.5)	90.5	(± 5.0) [†]	93.0	(± 3.5) [†]
Larimer, Colorado	NA	NA	86.8	(± 6.8)	NA	NA
Weld, Colorado*	60.1	(± 11.2) [§]	NA	NA	88.9	(± 5.6)
Fairfield, Connecticut*	87.4	(± 4.9)	90.0	(± 4.3)	93.4	(± 3.3) [†]
Hartford, Connecticut*	84.5	(± 5.5)	91.2	(± 4.1) [†]	94.9	(± 2.9) [†]
New Haven, Connecticut*	83.5	(± 6.1)	88.9	(± 5.6)	91.7	(± 3.9) [†]
New London, Connecticut*	80.4	(± 9.0)	90.1	(± 5.5) [†]	93.6	(± 3.8) [†]
Kent, Delaware*	62.0	(± 8.6)	86.0	(± 6.4)	92.2	(± 4.1) [†]
New Castle, Delaware*	76.3	(± 4.9)	87.4	(± 3.9)	93.9	(± 2.7) [†]
Sussex, Delaware*	63.2	(± 8.4)	86.1	(± 5.7)	91.6	(± 3.4) [†]
District of Columbia*	72.4	(± 4.6)	82.9	(± 3.4)	90.4	(± 2.7) [†]
Broward, Florida*	51.3	(± 10.5) [§]	84.4	(± 7.0)	89.9	(± 5.3)
Duval, Florida*	65.1	(± 4.8)	78.4	(± 3.8)	NA	NA
Hillsborough, Florida*	66.4	(± 9.5)	79.9	(± 7.9)	NA	NA
Dade, Florida*	49.4	(± 4.8)	80.5	(± 5.9)	88.7	(± 3.0)
Orange, Florida*	63.2	(± 11.1) [§]	NA	NA	90.4	(± 4.3) [†]
Palm Beach, Florida*	70.0	(± 10.1) [§]	80.9	(± 8.5)	92.2	(± 4.1) [†]
Cobb, Georgia*	73.7	(± 9.6)	88.7	(± 5.4)	93.6	(± 3.4) [†]
DeKalb, Georgia*	66.1	(± 6.0)	82.0	(± 5.7)	93.7	(± 3.8) [†]
Fulton, Georgia*	69.0	(± 6.3)	85.1	(± 5.1)	91.8	(± 4.3) [†]
Gwinnett, Georgia*	65.8	(± 9.8)	89.2	(± 5.7)	93.0	(± 3.9) [†]
Hawaii, Hawaii	88.2	(± 5.4)	84.2	(± 7.0)	92.6	(± 3.9) [†]
Honolulu, Hawaii*	77.0	(± 4.2)	86.5	(± 4.0)	91.8	(± 2.8) [†]
Maui, Hawaii*	85.6	(± 6.2)	86.0	(± 7.6)	94.5	(± 2.6) [†]
Ada, Idaho*	71.7	(± 8.4)	87.8	(± 4.7)	87.4	(± 5.0)
Bonneville, Idaho*	74.0	(± 9.1)	86.1	(± 7.4)	92.1	(± 4.8) [†]
Canyon, Idaho*	76.0	(± 8.2)	80.3	(± 7.3)	87.1	(± 5.8)
Cook, Illinois*	72.0	(± 4.6)	86.7	(± 3.5)	90.3	(± 2.7) [†]
DuPage, Illinois*	76.4	(± 8.4)	NA	NA	90.9	(± 4.3) [†]
Lake, Illinois*	70.7	(± 10.3) [§]	NA	NA	93.0	(± 4.0) [†]
Will, Illinois*	64.5	(± 11.1) [§]	86.6	(± 6.5)	92.7	(± 4.1) [†]
Allen, Indiana*	65.7	(± 10.4) [§]	NA	NA	90.8	(± 5.2) [†]
Hamilton, Indiana*	78.6	(± 9.1)	NA	NA	93.7	(± 3.9) [†]
Lake, Indiana*	70.8	(± 10.6) [§]	NA	NA	89.2	(± 4.7)

See table footnotes on page 48.

TABLE 11. (Continued) Estimated vaccination coverage with ≥ 3 doses of PCV7 vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Marion, Indiana*	77.3	(± 4.1)	90.9	(± 3.4) [†]	91.1	(± 4.1) [†]
Linn, Iowa*	64.2	(± 11.2) [§]	NA	NA	90.8	(± 5.1) [†]
Polk, Iowa*	79.4	(± 7.0)	87.2	(± 5.5)	92.6	(± 3.9) [†]
Scott, Iowa	65.8	(± 10.3) [§]	NA	NA	NA	NA
Johnson, Kansas*	80.0	(± 7.5)	92.2	(± 3.2) [†]	93.9	(± 2.9) [†]
Sedgwick, Kansas*	67.3	(± 9.7)	80.1	(± 6.8)	87.4	(± 5.3)
Shawnee, Kansas*	NA	NA	83.1	(± 8.0)	92.5	(± 4.6) [†]
Fayette, Kentucky	81.4	(± 8.0)	NA	NA	NA	NA
Jefferson, Kentucky*	77.3	(± 8.3)	90.9	(± 4.6) [†]	91.3	(± 3.9) [†]
Caddo, Louisiana	NA	NA	87.6	(± 6.7)	91.0	(± 4.8) [†]
East Baton Rouge, Louisiana*	63.8	(± 10.6) [§]	90.3	(± 5.0) [†]	92.7	(± 4.0) [†]
Jefferson, Louisiana*	72.4	(± 9.6)	90.0	(± 5.2)	92.1	(± 4.0) [†]
Lafayette, Louisiana*	61.0	(± 11.5) [§]	NA	NA	92.0	(± 4.3) [†]
Orleans, Louisiana*	69.4	(± 5.3)	87.4	(± 5.1)	90.4	(± 5.0) [†]
St. Tammany, Louisiana*	75.4	(± 9.8)	89.0	(± 5.4)	NA	NA
Androscoggin, Maine*	83.5	(± 7.2)	86.7	(± 7.2)	93.0	(± 3.7) [†]
Aroostook, Maine	80.2	(± 8.7)	NA	NA	NA	NA
Cumberland, Maine*	81.3	(± 5.7)	89.1	(± 4.7)	94.6	(± 2.7) [†]
Kennebec, Maine*	83.4	(± 7.3)	NA	NA	93.2	(± 3.8) [†]
Penobscot, Maine*	77.0	(± 7.8)	84.5	(± 7.7)	90.3	(± 5.0) [†]
York, Maine*	81.9	(± 6.5)	85.6	(± 7.0)	92.2	(± 3.9) [†]
Anne Arundel, Maryland*	77.8	(± 8.5)	89.1	(± 5.3)	93.9	(± 3.4) [†]
Baltimore, Maryland*	77.7	(± 7.8)	90.9	(± 4.7) [†]	95.0	(± 3.0) [†]
Frederick, Maryland	74.1	(± 9.4)	NA	NA	NA	NA
Harford, Maryland	76.2	(± 9.7)	NA	NA	NA	NA
Howard, Maryland*	84.1	(± 7.0)	NA	NA	96.4	(± 2.4) [†]
Montgomery, Maryland*	78.5	(± 6.7)	93.6	(± 3.1) [†]	94.9	(± 2.6) [†]
Prince George's, Maryland*	64.4	(± 10.4) [§]	85.3	(± 6.6)	90.3	(± 4.9) [†]
City of Baltimore, Maryland*	70.2	(± 4.4)	86.4	(± 3.5)	89.4	(± 5.1)
Bristol, Massachusetts	84.3	(± 6.9)	88.8	(± 6.1)	NA	NA
Essex, Massachusetts*	83.0	(± 7.7)	88.1	(± 6.1)	92.1	(± 4.5) [†]
Hampden, Massachusetts	84.9	(± 6.9)	NA	NA	NA	NA
Middlesex, Massachusetts*	88.7	(± 4.5)	95.2	(± 2.2) [†]	95.4	(± 2.4) [†]
Norfolk, Massachusetts	88.0	(± 5.4)	93.7	(± 3.4) [†]	93.9	(± 3.3) [†]
Plymouth, Massachusetts*	83.4	(± 7.8)	NA	NA	94.4	(± 3.1) [†]
Suffolk, Massachusetts	91.7	(± 2.6) [†]	91.4	(± 4.5) [†]	93.0	(± 4.3) [†]
Worcester, Massachusetts*	83.4	(± 6.3)	90.8	(± 5.0) [†]	93.8	(± 3.2) [†]
Kent, Michigan*	74.4	(± 8.6)	NA	NA	92.1	(± 4.1) [†]
Macomb, Michigan	77.1	(± 8.7)	86.5	(± 6.3)	NA	NA
Oakland, Michigan*	72.1	(± 8.3)	88.9	(± 5.0)	94.0	(± 3.3) [†]
Wayne, Michigan*	57.6	(± 6.3)	77.4	(± 5.9)	89.2	(± 4.4)
Anoka, Minnesota	NA	NA	NA	NA	93.8	(± 3.4) [†]
Dakota, Minnesota*	78.5	(± 8.8)	90.3	(± 5.4) [†]	93.1	(± 4.3) [†]
Hennepin, Minnesota*	80.6	(± 6.4)	90.0	(± 4.9)	93.1	(± 3.0) [†]
Ramsey, Minnesota*	79.9	(± 8.4)	89.9	(± 5.4)	93.7	(± 3.6) [†]
Harrison, Mississippi	NA	NA	81.6	(± 7.9)	NA	NA
Hinds, Mississippi	NA	NA	77.8	(± 9.1)	85.1	(± 6.9)
Jackson, Missouri*	79.1	(± 7.4)	89.0	(± 5.2)	92.8	(± 3.8) [†]
Jefferson, Missouri	NA	NA	NA	NA	90.5	(± 4.9) [†]
St. Charles, Missouri	NA	NA	NA	NA	91.6	(± 4.6) [†]
St. Louis, Missouri*	83.2	(± 6.6)	91.7	(± 3.3) [†]	94.9	(± 2.6) [†]
City of St. Louis, Missouri	NA	NA	NA	NA	90.6	(± 5.2) [†]
Cascade, Montana*	77.1	(± 9.4)	89.4	(± 5.9)	92.5	(± 4.2) [†]
Flathead, Montana*	73.3	(± 8.9)	76.3	(± 9.9)	90.3	(± 5.0) [†]
Gallatin, Montana*	65.2	(± 9.8)	80.5	(± 7.5)	89.2	(± 5.0)
Lewis and Clark, Montana	NA	NA	NA	NA	93.3	(± 3.8) [†]
Missoula, Montana*	70.9	(± 9.2)	87.5	(± 5.7)	85.4	(± 6.8)
Yellowstone, Montana*	78.6	(± 6.9)	87.7	(± 5.3)	90.2	(± 4.7) [†]
Douglas, Nebraska*	78.3	(± 5.9)	89.1	(± 4.4)	94.4	(± 2.9) [†]
Lancaster, Nebraska*	74.1	(± 7.7)	84.8	(± 6.4)	90.5	(± 4.7) [†]
Sarpy, Nebraska	69.6	(± 9.4)	NA	NA	NA	NA
Clark, Nevada*	43.9	(± 5.0)	73.8	(± 4.8)	81.0	(± 4.4)
Washoe, Nevada*	60.8	(± 8.2)	75.5	(± 7.3)	84.2	(± 5.7)

See table footnotes on page 48.

TABLE 11. (Continued) Estimated vaccination coverage with ≥ 3 doses of PCV7 vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Grafton, New Hampshire*	76.5	(± 9.7)	NA	NA	90.8	(± 6.3) [†]
Hillsborough, New Hampshire*	78.7	(± 5.4)	89.3	(± 4.1)	93.9	(± 2.9) [†]
Merrimack, New Hampshire*	84.6	(± 6.1)	85.2	(± 7.2)	94.2	(± 3.4) [†]
Rockingham, New Hampshire*	83.2	(± 6.6)	87.2	(± 5.1)	94.6	(± 2.8) [†]
Strafford, New Hampshire*	81.3	(± 7.5)	87.4	(± 6.7)	93.1	(± 4.2) [†]
Bergen, New Jersey*	83.1	(± 7.1)	88.7	(± 5.7)	93.7	(± 3.8) [†]
Burlington, New Jersey	NA	NA	NA	NA	93.2	(± 3.8) [†]
Camden, New Jersey	NA	NA	85.3	(± 7.1)	90.9	(± 5.1) [†]
Essex, New Jersey*	65.0	(± 9.3)	84.3	(± 5.8)	87.3	(± 6.0)
Hudson, New Jersey*	73.0	(± 9.5)	NA	NA	88.6	(± 5.7)
Middlesex, New Jersey*	73.9	(± 8.7)	87.0	(± 6.5)	91.0	(± 5.0) [†]
Monmouth, New Jersey	NA	NA	88.4	(± 5.7)	90.4	(± 4.9) [†]
Ocean, New Jersey*	68.3	(± 9.9)	84.7	(± 7.2)	89.2	(± 5.4)
Passaic, New Jersey	72.6	(± 9.8)	NA	NA	NA	NA
Union, New Jersey*	74.5	(± 8.9)	NA	NA	91.0	(± 4.5) [†]
Bernalillo, New Mexico*	66.4	(± 9.3)	81.5	(± 5.9)	91.0	(± 4.4) [†]
Dona Ana, New Mexico*	63.2	(± 10.7) [§]	NA	NA	92.5	(± 3.9) [†]
Sandoval, New Mexico*	70.2	(± 10.7) [§]	NA	NA	87.7	(± 6.3)
San Juan, New Mexico*	73.4	(± 9.9)	84.3	(± 7.9)	89.4	(± 5.5)
Santa Fe, New Mexico	61.0	(± 11.2) [§]	NA	NA	NA	NA
Bronx, New York*	79.9	(± 7.9)	81.6	(± 8.1)	92.0	(± 4.1) [†]
Erie, New York	80.8	(± 7.5)	89.0	(± 5.8)	NA	NA
Kings, New York*	72.9	(± 6.7)	78.4	(± 5.6)	85.0	(± 4.2)
Monroe, New York*	80.8	(± 7.8)	90.8	(± 4.6) [†]	94.1	(± 3.4) [†]
Nassau, New York*	75.7	(± 8.2)	91.9	(± 4.6) [†]	95.0	(± 2.6) [†]
New York, New York*	82.5	(± 6.5)	92.1	(± 4.0) [†]	91.5	(± 4.1) [†]
Queens, New York*	78.3	(± 6.1)	86.2	(± 5.3)	91.7	(± 3.6) [†]
Suffolk, New York*	75.7	(± 7.2)	88.2	(± 5.9)	92.7	(± 4.1) [†]
Westchester, New York*	84.1	(± 7.3)	93.1	(± 4.2) [†]	NA	NA
Durham, North Carolina	61.6	(± 13.6) [§]	NA	NA	NA	NA
Mecklenburg, North Carolina*	75.0	(± 9.2)	85.9	(± 6.9)	92.8	(± 4.0) [†]
Wake, North Carolina*	75.9	(± 8.9)	92.3	(± 4.2) [†]	95.1	(± 2.5) [†]
Burleigh, North Dakota*	66.1	(± 9.2)	84.1	(± 6.9)	89.9	(± 5.1)
Cass, North Dakota*	75.3	(± 6.9)	90.2	(± 4.3) [†]	91.2	(± 4.1) [†]
Grand Forks, North Dakota*	69.8	(± 9.0)	85.6	(± 6.8)	94.0	(± 3.4) [†]
Ward, North Dakota*	65.4	(± 9.6)	87.4	(± 6.4)	93.4	(± 3.8) [†]
Cuyahoga, Ohio*	74.2	(± 4.4)	86.6	(± 3.4)	93.5	(± 3.3) [†]
Franklin, Ohio*	69.4	(± 4.5)	89.2	(± 5.1)	94.1	(± 3.1) [†]
Hamilton, Ohio*	82.2	(± 7.5)	89.5	(± 5.1)	94.8	(± 3.1) [†]
Cleveland, Oklahoma*	70.4	(± 10.1) [§]	79.0	(± 8.1)	91.2	(± 4.7) [†]
Oklahoma, Oklahoma*	50.9	(± 9.0)	73.0	(± 7.2)	90.2	(± 4.3) [†]
Tulsa, Oklahoma*	57.1	(± 10.0) [§]	80.6	(± 7.1)	88.5	(± 5.1)
Clackamas, Oregon*	79.6	(± 8.1)	NA	NA	89.6	(± 5.3)
Lane, Oregon	80.8	(± 7.8)	85.0	(± 7.2)	89.6	(± 5.3)
Marion, Oregon*	74.1	(± 8.7)	84.8	(± 6.7)	89.1	(± 5.7)
Multnomah, Oregon	78.8	(± 6.8)	83.6	(± 6.2)	87.2	(± 5.8)
Washington, Oregon*	76.8	(± 7.2)	86.7	(± 5.8)	92.0	(± 4.8) [†]
Allegheny, Pennsylvania*	84.2	(± 6.8)	90.8	(± 4.6) [†]	94.9	(± 2.9) [†]
Delaware, Pennsylvania	83.5	(± 7.8)	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	90.9	(± 4.5) [†]
Montgomery, Pennsylvania*	85.6	(± 7.1)	NA	NA	95.4	(± 2.7) [†]
Philadelphia, Pennsylvania*	82.9	(± 3.4)	89.5	(± 3.0)	91.1	(± 2.7) [†]
Kent, Rhode Island*	84.3	(± 6.2)	91.7	(± 4.2) [†]	95.2	(± 2.5) [†]
Newport, Rhode Island	NA	NA	85.8	(± 6.6)	NA	NA
Providence, Rhode Island*	88.6	(± 3.8)	92.7	(± 3.1) [†]	93.4	(± 2.9) [†]
Washington, Rhode Island*	87.5	(± 5.6)	93.0	(± 4.1) [†]	95.3	(± 2.8) [†]
Charleston, South Carolina*	81.5	(± 8.0)	87.6	(± 6.8)	92.5	(± 4.2) [†]
Greenville, South Carolina*	72.4	(± 10.2) [§]	84.2	(± 7.8)	91.3	(± 4.3) [†]
Horry, South Carolina	NA	NA	NA	NA	92.8	(± 4.4) [†]
Richland, South Carolina	NA	NA	90.2	(± 5.3) [†]	89.0	(± 5.0)
Spartanburg, South Carolina	NA	NA	86.3	(± 7.1)	92.8	(± 4.2) [†]
York, South Carolina	NA	NA	NA	NA	95.8	(± 1.6) [†]
Minnehaha, South Dakota*	50.1	(± 9.3)	73.5	(± 7.7)	80.1	(± 6.0)

See table footnotes on page 48.

TABLE 11. (Continued) Estimated vaccination coverage with ≥ 3 doses of PCV7 vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Pennington, South Dakota*	71.6	(±9.2)	76.9	(±7.8)	89.8	(±5.3)
Davidson, Tennessee*	77.5	(±4.3)	85.2	(±5.6)	92.9	(±3.8) [†]
Knox, Tennessee*	81.0	(±7.0)	94.5	(±2.4) [†]	94.0	(±3.6) [†]
Shelby, Tennessee*	70.3	(±4.5)	87.7	(±3.2)	90.8	(±4.7) [†]
Bexar, Texas*	69.1	(±4.7)	86.1	(±3.6)	91.3	(±2.6) [†]
Collin, Texas	NA	NA	90.9	(±5.0) [†]	NA	NA
Dallas, Texas*	58.7	(±4.3)	83.1	(±4.1)	88.0	(±2.8)
El Paso, Texas*	62.3	(±4.7)	81.4	(±3.6)	90.0	(±2.8)
Harris, Texas*	61.0	(±4.9)	85.6	(±3.7)	90.1	(±4.5) [†]
Hidalgo, Texas	NA	NA	84.4	(±8.2)	NA	NA
Tarrant, Texas*	62.2	(±10.8) [§]	87.3	(±6.4)	92.1	(±4.0) [†]
Travis, Texas*	71.0	(±10.3) [§]	86.4	(±6.5)	NA	NA
Davis, Utah*	69.3	(±9.3)	84.8	(±7.1)	90.3	(±4.7) [†]
Salt Lake, Utah*	69.4	(±6.7)	83.2	(±6.0)	89.9	(±4.1)
Utah, Utah*	71.6	(±7.0)	84.4	(±6.7)	88.4	(±4.8)
Weber, Utah	69.3	(±9.6)	NA	NA	NA	NA
Addison, Vermont	87.1	(±6.2)	NA	NA	NA	NA
Chittenden, Vermont*	80.9	(±5.3)	93.1	(±3.3) [†]	93.1	(±3.2) [†]
Franklin, Vermont*	82.3	(±7.2)	NA	NA	93.2	(±3.9) [†]
Lamoille, Vermont	78.3	(±8.7)	NA	NA	NA	NA
Rutland, Vermont	78.1	(±8.1)	NA	NA	NA	NA
Washington, Vermont*	77.3	(±7.7)	88.2	(±5.9)	95.4	(±2.1) [†]
Windham, Vermont	NA	NA	NA	NA	94.7	(±3.0) [†]
Windsor, Vermont	74.9	(±8.3)	80.5	(±9.9)	NA	NA
Fairfax, Virginia*	80.8	(±6.8)	87.3	(±5.4)	94.4	(±2.8) [†]
Loudoun, Virginia	NA	NA	NA	NA	94.3	(±3.1) [†]
Virginia Beach, Virginia	NA	NA	NA	NA	91.6	(±5.1) [†]
Clark, Washington	78.3	(±8.5)	87.3	(±6.6)	NA	NA
King, Washington*	79.0	(±3.5)	86.6	(±3.7)	88.1	(±4.4)
Kitsap, Washington*	73.8	(±9.3)	NA	NA	89.8	(±4.8)
Pierce, Washington*	70.7	(±8.0)	85.0	(±6.4)	89.8	(±4.9)
Snohomish, Washington*	73.2	(±7.7)	85.5	(±6.6)	90.2	(±5.3) [†]
Spokane, Washington*	71.3	(±9.4)	NA	NA	88.4	(±5.5)
Thurston, Washington	NA	NA	NA	NA	91.3	(±4.1) [†]
Whatcom, Washington	NA	NA	NA	NA	91.2	(±4.5) [†]
Kanawha, West Virginia*	70.3	(±9.3)	82.7	(±7.2)	92.0	(±4.6) [†]
Dane, Wisconsin*	78.0	(±8.8)	91.0	(±4.9) [†]	91.0	(±4.8) [†]
Milwaukee, Wisconsin*	79.0	(±3.9)	86.5	(±3.9)	92.4	(±3.8) [†]
Waukesha, Wisconsin*	82.4	(±7.5)	92.3	(±4.2) [†]	NA	NA
Albany, Wyoming	75.5	(±9.2)	NA	NA	NA	NA
Campbell, Wyoming*	75.5	(±8.6)	80.2	(±7.3)	91.0	(±4.6) [†]
Fremont, Wyoming	77.4	(±8.9)	NA	NA	NA	NA
Laramie, Wyoming*	72.3	(±8.2)	84.9	(±6.1)	90.3	(±4.5) [†]
Natrona, Wyoming*	77.8	(±7.5)	86.0	(±6.7)	91.9	(±4.2) [†]
Sweetwater, Wyoming*	NA	NA	74.4	(±9.2)	90.1	(±4.6) [†]
United States*	71.2	(±0.7)	84.8	(±0.6)	91.4	(±0.5)[†]
Sample size, no.	45,052		43,308		38,607	
Biennial estimate across all selected counties	72.1	(±0.9)	86.0	(±0.8)	91.7	(±0.7)[†]
Sample size, no.	28,845		23,485		20,552	
Range, %	43.9–91.7		73.0–95.2		80.1–96.4	

Abbreviations: CI = confidence interval; NA = not available; PCV7 = 7-valent pneumococcal conjugate vaccine.

* Estimates increased significantly between the first and last biennial periods ($p < 0.05$).

[†] Estimate exceeds the *Healthy People 2010* objective of 90% vaccination coverage.

[§] Estimate has 95% CI half-width that exceeds 10% and might be imprecise.

TABLE 12. Estimated vaccination coverage with ≥ 4 doses of PCV7 vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Jefferson, Alabama*	44.9	(± 5.1)	67.0	(± 7.5)	85.1	(± 5.9)
Madison, Alabama*	35.5	(± 10.7) [†]	61.4	(± 10.8) [†]	78.6	(± 8.5)
Mobile, Alabama*	42.8	(± 10.9) [†]	56.5	(± 10.7) [†]	78.6	(± 8.2)
Shelby, Alabama*	37.0	(± 11.6) [†]	NA	NA	85.5	(± 7.0)
Anchorage, Alaska*	44.1	(± 6.7)	63.2	(± 7.3)	79.9	(± 6.1)
Fairbanks North Star, Alaska*	31.3	(± 8.1)	52.1	(± 9.0)	77.8	(± 8.2)
Matanuska-Susitna, Alaska*	27.6	(± 9.4)	50.6	(± 9.8)	73.0	(± 8.5)
Coconino, Arizona	34.1	(± 10.4) [†]	NA	NA	NA	NA
Maricopa, Arizona*	30.7	(± 4.0)	57.0	(± 4.7)	74.7	(± 5.5)
Pima, Arizona*	34.9	(± 6.5)	65.7	(± 7.2)	80.6	(± 7.6)
Pinal, Arizona*	21.8	(± 8.3)	57.1	(± 11.2) [†]	NA	NA
Yavapai, Arizona	24.3	(± 9.0)	NA	NA	NA	NA
Yuma, Arizona*	26.3	(± 8.1)	63.9	(± 10.4) [†]	NA	NA
Benton, Arkansas*	28.9	(± 10.2) [†]	52.1	(± 11.1) [†]	76.9	(± 8.0)
Pulaski, Arkansas*	43.8	(± 10.2) [†]	67.1	(± 10.3) [†]	84.7	(± 6.6)
Washington, Arkansas	NA	NA	NA	NA	76.8	(± 7.9)
Alameda, California*	57.4	(± 10.9) [†]	67.9	(± 7.0)	82.6	(± 6.8)
Los Angeles, California*	35.7	(± 4.3)	60.7	(± 4.7)	77.6	(± 3.8)
Orange, California*	46.6	(± 9.4)	59.1	(± 9.7)	78.1	(± 9.5)
Riverside, California*	35.1	(± 9.7)	NA	NA	77.0	(± 9.7)
San Bernardino, California*	39.9	(± 10.5) [†]	59.4	(± 7.0)	73.0	(± 7.9)
San Diego, California*	37.4	(± 4.4)	62.0	(± 7.9)	80.5	(± 8.1)
Santa Clara, California*	56.2	(± 4.7)	68.2	(± 8.1)	NA	NA
Adams, Colorado	31.7	(± 10.1) [†]	NA	NA	NA	NA
Arapahoe, Colorado*	38.2	(± 10.9) [†]	NA	NA	83.3	(± 7.7)
Boulder, Colorado*	43.2	(± 10.7) [†]	63.2	(± 9.6)	79.5	(± 8.6)
Denver, Colorado	39.8	(± 9.6)	NA	NA	NA	NA
Douglas, Colorado	39.2	(± 10.5) [†]	NA	NA	NA	NA
El Paso, Colorado*	32.1	(± 8.6)	56.5	(± 9.5)	74.6	(± 8.5)
Jefferson, Colorado*	43.5	(± 9.4)	65.9	(± 9.1)	82.8	(± 7.1)
Larimer, Colorado	NA	NA	65.9	(± 10.2) [†]	NA	NA
Weld, Colorado*	34.1	(± 10.5) [†]	NA	NA	73.0	(± 9.8)
Fairfield, Connecticut*	67.1	(± 7.5)	74.0	(± 6.6)	81.6	(± 6.3)
Hartford, Connecticut*	55.7	(± 8.0)	72.3	(± 7.1)	88.5	(± 5.7)
New Haven, Connecticut*	59.8	(± 8.6)	70.7	(± 7.8)	83.0	(± 6.5)
New London, Connecticut*	53.2	(± 11.6) [†]	69.1	(± 9.8)	84.6	(± 7.7)
Kent, Delaware*	37.4	(± 8.4)	59.8	(± 9.8)	81.5	(± 7.2)
New Castle, Delaware*	52.1	(± 5.6)	64.9	(± 6.4)	81.5	(± 4.8)
Sussex, Delaware*	27.5	(± 7.9)	56.0	(± 9.5)	74.4	(± 7.1)
District of Columbia*	32.3	(± 4.5)	54.8	(± 4.4)	78.4	(± 3.9)
Broward, Florida*	27.8	(± 8.8)	50.2	(± 9.8)	74.3	(± 9.4)
Duval, Florida*	37.7	(± 4.8)	51.8	(± 4.4)	NA	NA
Hillsborough, Florida*	37.1	(± 9.2)	54.5	(± 10.1) [†]	NA	NA
Dade, Florida*	20.3	(± 3.8)	52.6	(± 7.6)	66.6	(± 5.1)
Orange, Florida*	37.8	(± 10.8) [†]	NA	NA	82.2	(± 5.8)
Palm Beach, Florida*	34.9	(± 10.4) [†]	53.0	(± 11.1) [†]	80.4	(± 8.2)
Cobb, Georgia*	49.7	(± 10.8) [†]	68.4	(± 8.9)	80.1	(± 7.6)
DeKalb, Georgia*	37.2	(± 5.9)	56.1	(± 7.4)	84.7	(± 6.8)
Fulton, Georgia*	33.6	(± 5.7)	64.8	(± 6.6)	79.6	(± 7.8)
Gwinnett, Georgia*	35.1	(± 10.1) [†]	69.8	(± 9.0)	82.9	(± 7.4)
Hawaii, Hawaii*	44.8	(± 9.1)	59.8	(± 10.0) [†]	83.5	(± 6.7)
Honolulu, Hawaii*	46.8	(± 4.8)	68.8	(± 5.4)	79.1	(± 4.9)
Maui, Hawaii*	46.7	(± 9.6)	59.6	(± 11.6) [†]	81.9	(± 8.2)
Ada, Idaho*	45.2	(± 8.6)	67.6	(± 7.1)	74.4	(± 7.4)
Bonneville, Idaho*	35.0	(± 9.4)	63.4	(± 10.1) [†]	79.4	(± 9.0)
Canyon, Idaho*	37.1	(± 9.4)	55.8	(± 8.8)	64.5	(± 10.0) [†]
Cook, Illinois*	40.8	(± 5.0)	59.9	(± 5.2)	75.4	(± 4.1)
DuPage, Illinois*	51.3	(± 10.7) [†]	NA	NA	75.3	(± 8.2)
Lake, Illinois*	52.0	(± 11.2) [†]	NA	NA	82.3	(± 8.3)
Will, Illinois*	38.2	(± 10.7) [†]	64.6	(± 10.1) [†]	80.4	(± 8.1)
Allen, Indiana*	45.5	(± 11.2) [†]	NA	NA	71.4	(± 10.2) [†]
Hamilton, Indiana*	58.5	(± 11.4) [†]	NA	NA	86.2	(± 6.2)
Lake, Indiana*	39.5	(± 11.3) [†]	NA	NA	74.4	(± 9.0)

See table footnotes on page 52.

TABLE 12. (Continued) Estimated vaccination coverage with ≥ 4 doses of PCV7 vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Marion, Indiana*	39.7	(± 4.7)	64.5	(± 8.0)	77.3	(± 7.5)
Linn, Iowa*	36.5	(± 10.8) [†]	NA	NA	77.2	(± 10.1) [†]
Polk, Iowa*	44.4	(± 10.4) [†]	65.0	(± 8.9)	80.4	(± 7.3)
Scott, Iowa	41.8	(± 10.6) [†]	NA	NA	NA	NA
Johnson, Kansas*	58.2	(± 8.9)	75.6	(± 5.7)	84.8	(± 5.4)
Sedgwick, Kansas*	41.0	(± 9.7)	54.5	(± 9.0)	66.5	(± 8.4)
Shawnee, Kansas*	NA	NA	59.6	(± 10.2) [†]	80.4	(± 9.9)
Fayette, Kentucky	50.4	(± 11.6) [†]	NA	NA	NA	NA
Jefferson, Kentucky*	46.5	(± 9.3)	66.9	(± 8.8)	80.1	(± 6.4)
Caddo, Louisiana	NA	NA	64.3	(± 10.2) [†]	76.0	(± 9.0)
East Baton Rouge, Louisiana*	35.3	(± 9.8)	66.8	(± 9.0)	83.7	(± 7.5)
Jefferson, Louisiana*	37.7	(± 9.7)	67.1	(± 9.2)	79.5	(± 7.6)
Lafayette, Louisiana*	29.1	(± 9.5)	NA	NA	81.8	(± 7.7)
Orleans, Louisiana*	35.1	(± 5.3)	54.5	(± 10.9) [†]	75.9	(± 9.3)
St. Tammany, Louisiana*	38.1	(± 10.9) [†]	68.3	(± 9.3)	NA	NA
Androscoggin, Maine*	36.8	(± 10.6) [†]	67.6	(± 9.3)	79.9	(± 8.0)
Aroostook, Maine	40.6	(± 10.5) [†]	NA	NA	NA	NA
Cumberland, Maine*	41.6	(± 8.1)	67.6	(± 7.6)	83.5	(± 5.4)
Kennebec, Maine*	36.8	(± 10.5) [†]	NA	NA	82.6	(± 7.3)
Penobscot, Maine*	42.9	(± 9.5)	71.1	(± 9.0)	78.6	(± 8.6)
York, Maine*	44.6	(± 9.0)	62.5	(± 9.4)	81.5	(± 7.4)
Anne Arundel, Maryland*	51.0	(± 11.0) [†]	61.5	(± 10.0) [†]	86.7	(± 5.9)
Baltimore, Maryland*	47.1	(± 10.1) [†]	69.0	(± 8.7)	83.5	(± 6.7)
Frederick, Maryland	51.0	(± 10.7) [†]	NA	NA	NA	NA
Harford, Maryland	54.7	(± 11.2) [†]	NA	NA	NA	NA
Howard, Maryland*	59.4	(± 11.3) [†]	NA	NA	91.0	(± 4.9) [§]
Montgomery, Maryland*	48.5	(± 8.3)	78.3	(± 6.5)	88.5	(± 4.7)
Prince George's, Maryland*	38.1	(± 9.6)	49.1	(± 9.5)	77.0	(± 8.3)
City of Baltimore, Maryland*	35.5	(± 4.6)	61.2	(± 5.1)	77.1	(± 7.9)
Bristol, Massachusetts*	53.9	(± 10.2) [†]	70.5	(± 9.9)	NA	NA
Essex, Massachusetts*	52.3	(± 10.5) [†]	71.9	(± 9.3)	80.7	(± 8.5)
Hampden, Massachusetts	47.8	(± 10.9) [†]	NA	NA	NA	NA
Middlesex, Massachusetts*	59.2	(± 7.6)	81.1	(± 6.0)	85.5	(± 5.3)
Norfolk, Massachusetts*	59.4	(± 9.7)	81.2	(± 7.4)	85.9	(± 6.3)
Plymouth, Massachusetts*	56.1	(± 10.7) [†]	NA	NA	87.3	(± 6.3)
Suffolk, Massachusetts*	59.3	(± 5.4)	77.4	(± 7.0)	84.7	(± 7.8)
Worcester, Massachusetts*	51.0	(± 9.2)	74.5	(± 8.4)	82.8	(± 6.8)
Kent, Michigan*	40.0	(± 11.0) [†]	NA	NA	83.6	(± 7.5)
Macomb, Michigan*	39.9	(± 11.2) [†]	57.4	(± 9.4)	NA	NA
Oakland, Michigan*	43.4	(± 9.7)	70.0	(± 8.2)	83.0	(± 7.0)
Wayne, Michigan*	23.8	(± 6.2)	40.1	(± 6.6)	70.8	(± 7.9)
Anoka, Minnesota	NA	NA	NA	NA	82.5	(± 7.6)
Dakota, Minnesota*	49.9	(± 11.2) [†]	61.9	(± 10.1) [†]	82.8	(± 8.5)
Hennepin, Minnesota*	47.5	(± 8.6)	70.9	(± 7.4)	82.8	(± 5.7)
Ramsey, Minnesota*	41.2	(± 10.7) [†]	65.3	(± 10.1) [†]	79.0	(± 8.0)
Harrison, Mississippi	NA	NA	58.3	(± 10.6) [†]	NA	NA
Hinds, Mississippi	NA	NA	46.3	(± 11.6) [†]	57.8	(± 11.5) [†]
Jackson, Missouri*	40.6	(± 10.0) [†]	63.9	(± 8.9)	82.1	(± 7.0)
Jefferson, Missouri	NA	NA	NA	NA	77.0	(± 9.2)
St. Charles, Missouri	NA	NA	NA	NA	77.7	(± 9.0)
St. Louis, Missouri*	63.1	(± 9.0)	72.4	(± 6.0)	84.8	(± 6.1)
City of St. Louis, Missouri	NA	NA	NA	NA	77.2	(± 9.3)
Cascade, Montana*	39.4	(± 10.8) [†]	65.7	(± 9.5)	80.7	(± 7.9)
Flathead, Montana*	28.9	(± 9.0)	47.5	(± 11.1) [†]	77.6	(± 8.5)
Gallatin, Montana*	36.0	(± 10.5) [†]	52.1	(± 10.1) [†]	69.6	(± 9.4)
Lewis and Clark, Montana	NA	NA	NA	NA	83.6	(± 7.7)
Missoula, Montana*	43.6	(± 10.3) [†]	67.9	(± 8.6)	73.6	(± 9.5)
Yellowstone, Montana*	44.3	(± 8.5)	70.1	(± 7.9)	70.8	(± 9.4)
Douglas, Nebraska*	59.1	(± 7.2)	74.7	(± 6.3)	85.6	(± 4.5)
Lancaster, Nebraska*	51.7	(± 9.4)	65.7	(± 8.9)	79.0	(± 8.2)
Sarpy, Nebraska	46.8	(± 10.8) [†]	NA	NA	NA	NA
Clark, Nevada*	12.6	(± 3.1)	45.2	(± 5.4)	60.0	(± 5.7)
Washoe, Nevada*	31.0	(± 7.6)	55.7	(± 8.0)	74.9	(± 7.7)

See table footnotes on page 52.

TABLE 12. (Continued) Estimated vaccination coverage with ≥ 4 doses of PCV7 vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Grafton, New Hampshire*	41.0	(± 11.9) [†]	NA	NA	78.8	(± 9.5)
Hillsborough, New Hampshire*	41.2	(± 7.0)	66.0	(± 6.9)	84.8	(± 5.6)
Merrimack, New Hampshire*	43.7	(± 9.8)	62.0	(± 10.3) [†]	84.6	(± 6.8)
Rockingham, New Hampshire*	49.8	(± 8.6)	70.0	(± 7.3)	86.8	(± 5.1)
Strafford, New Hampshire*	40.7	(± 10.5) [†]	68.2	(± 9.5)	87.1	(± 6.3)
Bergen, New Jersey*	54.2	(± 10.7) [†]	74.5	(± 8.7)	84.7	(± 7.2)
Burlington, New Jersey	NA	NA	NA	NA	79.3	(± 8.4)
Camden, New Jersey*	NA	NA	63.2	(± 10.6) [†]	77.4	(± 9.1)
Essex, New Jersey*	37.4	(± 9.5)	53.6	(± 9.3)	69.3	(± 9.9)
Hudson, New Jersey*	43.9	(± 10.4) [†]	NA	NA	70.7	(± 10.3) [†]
Middlesex, New Jersey*	49.0	(± 10.9) [†]	66.2	(± 9.8)	74.2	(± 9.4)
Monmouth, New Jersey	NA	NA	71.3	(± 9.1)	77.8	(± 8.2)
Ocean, New Jersey*	40.2	(± 10.6) [†]	61.1	(± 10.4) [†]	74.2	(± 9.4)
Passaic, New Jersey	46.9	(± 11.3) [†]	NA	NA	NA	NA
Union, New Jersey*	48.6	(± 11.0) [†]	NA	NA	79.0	(± 8.4)
Bernalillo, New Mexico*	30.9	(± 7.3)	58.5	(± 7.5)	77.5	(± 7.4)
Dona Ana, New Mexico*	17.7	(± 7.0)	NA	NA	77.3	(± 8.8)
Sandoval, New Mexico*	34.2	(± 11.0) [†]	NA	NA	73.4	(± 10.6) [†]
San Juan, New Mexico*	32.3	(± 10.0) [†]	54.8	(± 11.1) [†]	74.1	(± 9.6)
Santa Fe, New Mexico	33.3	(± 10.8) [†]	NA	NA	NA	NA
Bronx, New York*	38.2	(± 8.9)	46.5	(± 9.4)	74.7	(± 7.8)
Erie, New York	50.7	(± 11.1) [†]	64.8	(± 10.2) [†]	NA	NA
Kings, New York*	34.7	(± 7.1)	50.6	(± 7.2)	69.8	(± 5.9)
Monroe, New York*	52.1	(± 11.2) [†]	73.6	(± 8.2)	79.9	(± 8.3)
Nassau, New York*	52.3	(± 10.4) [†]	75.7	(± 8.3)	76.6	(± 8.0)
New York, New York*	41.6	(± 9.9)	72.2	(± 7.9)	84.7	(± 6.2)
Queens, New York*	43.9	(± 7.5)	66.0	(± 7.7)	79.4	(± 6.0)
Suffolk, New York*	55.8	(± 8.6)	69.4	(± 8.9)	82.5	(± 7.0)
Westchester, New York*	58.5	(± 10.6) [†]	76.4	(± 8.3)	NA	NA
Durham, North Carolina	36.2	(± 11.6) [†]	NA	NA	NA	NA
Mecklenburg, North Carolina*	48.3	(± 10.9) [†]	63.7	(± 10.7) [†]	83.0	(± 7.5)
Wake, North Carolina*	44.1	(± 10.3) [†]	72.0	(± 8.7)	87.3	(± 5.9)
Burleigh, North Dakota*	38.8	(± 9.5)	67.4	(± 8.7)	75.6	(± 9.0)
Cass, North Dakota*	56.1	(± 8.2)	71.7	(± 6.8)	80.2	(± 6.6)
Grand Forks, North Dakota*	46.6	(± 10.0) [†]	69.2	(± 9.1)	83.5	(± 7.8)
Ward, North Dakota*	38.8	(± 9.9)	59.0	(± 10.2) [†]	83.1	(± 7.3)
Cuyahoga, Ohio*	42.5	(± 5.0)	65.1	(± 4.6)	81.0	(± 7.4)
Franklin, Ohio*	40.1	(± 4.6)	67.5	(± 8.0)	81.6	(± 7.6)
Hamilton, Ohio*	50.3	(± 11.1) [†]	68.4	(± 9.3)	85.3	(± 6.5)
Cleveland, Oklahoma*	44.3	(± 11.4) [†]	51.0	(± 9.8)	77.0	(± 9.0)
Oklahoma, Oklahoma*	26.4	(± 7.0)	52.8	(± 8.1)	71.5	(± 8.1)
Tulsa, Oklahoma*	29.1	(± 8.4)	55.6	(± 9.1)	69.8	(± 9.0)
Clackamas, Oregon*	45.8	(± 11.1) [†]	NA	NA	73.1	(± 9.2)
Lane, Oregon*	49.0	(± 10.8) [†]	61.7	(± 10.4) [†]	77.0	(± 9.2)
Marion, Oregon*	39.3	(± 10.3) [†]	55.6	(± 10.5) [†]	73.8	(± 9.8)
Multnomah, Oregon*	46.4	(± 8.6)	64.1	(± 8.5)	70.8	(± 8.7)
Washington, Oregon*	46.5	(± 8.4)	63.1	(± 8.7)	81.3	(± 8.3)
Allegheny, Pennsylvania*	55.8	(± 10.8) [†]	74.5	(± 8.0)	86.8	(± 5.9)
Delaware, Pennsylvania	54.6	(± 11.3) [†]	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	77.2	(± 9.2)
Montgomery, Pennsylvania*	62.4	(± 10.9) [†]	NA	NA	88.5	(± 5.6)
Philadelphia, Pennsylvania*	47.9	(± 4.5)	62.3	(± 5.4)	80.0	(± 3.9)
Kent, Rhode Island*	59.0	(± 9.4)	74.9	(± 8.7)	89.1	(± 5.1)
Newport, Rhode Island	NA	NA	66.2	(± 9.7)	NA	NA
Providence, Rhode Island*	55.3	(± 5.7)	75.8	(± 4.8)	83.8	(± 4.9)
Washington, Rhode Island*	56.4	(± 9.7)	73.1	(± 7.8)	86.6	(± 6.1)
Charleston, South Carolina*	50.2	(± 12.1) [†]	68.3	(± 10.2) [†]	81.6	(± 8.1)
Greenville, South Carolina*	48.3	(± 11.0) [†]	61.3	(± 10.8) [†]	77.3	(± 8.4)
Horry, South Carolina	NA	NA	NA	NA	81.3	(± 8.4)
Richland, South Carolina	NA	NA	67.8	(± 9.2)	78.5	(± 8.0)
Spartanburg, South Carolina*	NA	NA	59.2	(± 10.4) [†]	81.1	(± 8.0)
York, South Carolina	NA	NA	NA	NA	81.5	(± 7.6)
Minnehaha, South Dakota*	29.8	(± 8.6)	52.5	(± 8.4)	60.8	(± 7.7)

See table footnotes on page 52.

TABLE 12. (Continued) Estimated vaccination coverage with ≥ 4 doses of PCV7 vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Pennington, South Dakota*	44.8	(± 10.5) [†]	57.3	(± 9.2)	73.1	(± 10.0) [†]
Davidson, Tennessee*	39.7	(± 4.6)	62.9	(± 7.4)	84.2	(± 6.3)
Knox, Tennessee*	47.9	(± 10.2) [†]	77.0	(± 8.4)	85.5	(± 7.5)
Shelby, Tennessee*	33.7	(± 4.2)	56.4	(± 5.0)	74.2	(± 8.2)
Bexar, Texas*	30.7	(± 4.6)	57.6	(± 4.9)	80.6	(± 3.7)
Collin, Texas	NA	NA	70.5	(± 9.6)	NA	NA
Dallas, Texas*	30.8	(± 3.9)	59.0	(± 5.3)	74.4	(± 4.0)
El Paso, Texas*	31.9	(± 4.5)	53.1	(± 4.3)	73.1	(± 4.1)
Harris, Texas*	32.5	(± 4.6)	59.1	(± 5.8)	72.5	(± 6.6)
Hidalgo, Texas	NA	NA	59.1	(± 10.9) [†]	NA	NA
Tarrant, Texas*	31.2	(± 9.2)	62.6	(± 9.5)	83.1	(± 7.2)
Travis, Texas*	38.1	(± 10.8) [†]	67.3	(± 9.3)	NA	NA
Davis, Utah*	45.1	(± 9.9)	58.0	(± 10.6) [†]	71.1	(± 9.6)
Salt Lake, Utah*	35.8	(± 7.0)	58.9	(± 7.9)	76.4	(± 6.4)
Utah, Utah*	52.3	(± 7.6)	60.4	(± 8.7)	78.4	(± 6.9)
Weber, Utah	45.7	(± 10.3) [†]	NA	NA	NA	NA
Addison, Vermont	47.5	(± 11.9) [†]	NA	NA	NA	NA
Chittenden, Vermont*	42.3	(± 7.0)	80.5	(± 5.9)	84.9	(± 5.8)
Franklin, Vermont*	45.1	(± 10.9) [†]	NA	NA	82.7	(± 8.0)
Lamoille, Vermont	43.5	(± 10.5) [†]	NA	NA	NA	NA
Rutland, Vermont	40.3	(± 10.2) [†]	NA	NA	NA	NA
Washington, Vermont*	41.3	(± 10.0) [†]	65.3	(± 9.9)	86.3	(± 6.6)
Windham, Vermont	NA	NA	NA	NA	84.5	(± 6.8)
Windsor, Vermont*	37.5	(± 10.9) [†]	59.9	(± 11.7) [†]	NA	NA
Fairfax, Virginia*	55.4	(± 8.7)	70.5	(± 8.0)	83.7	(± 6.1)
Loudoun, Virginia	NA	NA	NA	NA	85.0	(± 7.2)
Virginia Beach, Virginia	NA	NA	NA	NA	81.2	(± 9.0)
Clark, Washington*	29.3	(± 9.4)	64.7	(± 9.6)	NA	NA
King, Washington*	44.9	(± 4.1)	65.3	(± 5.2)	79.0	(± 6.0)
Kitsap, Washington*	46.3	(± 11.1) [†]	NA	NA	74.5	(± 8.9)
Pierce, Washington*	43.8	(± 9.2)	63.5	(± 9.1)	72.3	(± 9.2)
Snohomish, Washington*	39.8	(± 8.2)	60.4	(± 9.4)	75.3	(± 9.6)
Spokane, Washington*	35.4	(± 9.2)	NA	NA	72.4	(± 8.8)
Thurston, Washington	NA	NA	NA	NA	81.8	(± 7.1)
Whatcom, Washington	NA	NA	NA	NA	80.2	(± 7.6)
Kanawha, West Virginia*	34.7	(± 9.8)	62.8	(± 9.9)	78.0	(± 8.2)
Dane, Wisconsin*	49.2	(± 10.2) [†]	77.0	(± 8.4)	82.0	(± 8.3)
Milwaukee, Wisconsin*	51.9	(± 4.7)	61.0	(± 5.4)	77.7	(± 6.9)
Waukesha, Wisconsin*	61.9	(± 10.1) [†]	80.0	(± 7.5)	NA	NA
Albany, Wyoming	49.8	(± 11.5) [†]	NA	NA	NA	NA
Campbell, Wyoming*	42.1	(± 9.8)	50.0	(± 11.5) [†]	75.0	(± 8.5)
Fremont, Wyoming	44.3	(± 11.6) [†]	NA	NA	NA	NA
Laramie, Wyoming*	51.6	(± 9.7)	56.2	(± 9.4)	65.4	(± 8.8)
Natrona, Wyoming*	53.4	(± 9.5)	67.8	(± 9.2)	78.6	(± 7.9)
Sweetwater, Wyoming*	NA	NA	42.3	(± 11.2) [†]	70.2	(± 8.9)
United States*	40.4	(± 0.8)	61.0	(± 0.8)	77.7	(± 0.8)
Sample size, no.		43,308		38,607		35,447
All selected counties	41.4	(± 1.0)	62.1	(± 1.1)	78.3	(± 1.0)
Sample size, no.		28,845		23,485		20,552
Range, %		12.6–67.1		40.1–81.2		57.8–91

Abbreviations: CI = confidence interval; NA = not available; PCV7 = 7-valent pneumococcal conjugate vaccine.

* Estimates increased significantly between the first and last biennial periods ($p < 0.05$).

[†] Estimate has 95% CI half-width that exceeds 10% and might be imprecise.

[§] Estimate exceeds the *Healthy People 2010* objective of 90% vaccination coverage.

TABLE 13. Estimated percentage of children aged 6–23 months who received ≥1 dose of the seasonal influenza vaccine, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Jefferson, Alabama*	10.9	(±3.3)	32.6	(±9.3)	31.1	(±10.0) [†]
Anchorage, Alaska*	11.3	(±4.5)	36.2	(±8.1)	39.2	(±9.2)
Fairbanks North Star, Alaska*	14.0	(±6.8)	34.4	(±10.0) [†]	27.2	(±9.8)
Matanuska-Susitna, Alaska	NA	NA	NA	NA	30.6	(±9.9)
Maricopa, Arizona*	11.5	(±3.4)	27.4	(±4.7)	32.2	(±6.3)
Pima, Arizona*	14.9	(±5.0)	36.3	(±8.1)	40.2	(±10.3) [†]
Yuma, Arizona	7.9	(±4.7)	NA	NA	NA	NA
Benton, Arkansas	NA	NA	NA	NA	33.2	(±10.7) [†]
Pulaski, Arkansas	NA	NA	NA	NA	32.7	(±9.9)
Washington, Arkansas	NA	NA	NA	NA	27.4	(±10.0) [†]
Alameda, California*	21.2	(±9.3)	41.0	(±8.6)	46.4	(±10.9) [†]
Los Angeles, California*	8.1	(±2.7)	28.4	(±4.7)	36.9	(±5.4)
Orange, California	15.2	(±7.9)	NA	NA	NA	NA
Riverside, California	10.5	(±6.2)	NA	NA	NA	NA
San Bernardino, California	NA	NA	22.7	(±6.3)	32.8	(±9.5)
San Diego, California*	11.3	(±3.4)	32.9	(±7.8)	41.2	(±11.5) [†]
Santa Clara, California*	18.9	(±4.1)	39.4	(±8.6)	NA	NA
Boulder, Colorado	NA	NA	37.4	(±10.6) [†]	NA	NA
Denver, Colorado	18.5	(±7.6)	NA	NA	NA	NA
El Paso, Colorado*	17.2	(±7.7)	38.9	(±10.5) [†]	37.5	(±11.2) [†]
Jefferson, Colorado*	22.4	(±9.4)	46.0	(±11.8) [†]	47.5	(±11.4) [†]
Fairfield, Connecticut*	17.2	(±6.8)	45.5	(±9.0)	55.2	(±10.3) [†]
Hartford, Connecticut*	16.3	(±7.0)	46.3	(±8.8)	49.8	(±10.7) [†]
New Haven, Connecticut*	15.1	(±7.0)	51.0	(±9.3)	43.6	(±10.5) [†]
Kent, Delaware*	14.2	(±6.4)	23.4	(±8.2)	37.8	(±10.4) [†]
New Castle, Delaware*	19.9	(±5.5)	48.0	(±7.6)	47.7	(±7.6)
Sussex, Delaware	20.9	(±7.7)	31.4	(±9.5)	28.9	(±8.2)
District of Columbia*	16.9	(±4.9)	37.5	(±5.2)	44.2	(±6.1)
Broward, Florida*	11.6	(±6.7)	28.1	(±9.3)	NA	NA
Duval, Florida*	12.0	(±3.8)	26.6	(±4.4)	NA	NA
Hillsborough, Florida*	10.9	(±6.1)	24.4	(±9.1)	NA	NA
Dade, Florida*	5.6	(±2.4)	23.0	(±7.5)	25.1	(±5.4)
Orange, Florida	NA	NA	NA	NA	28.8	(±9.8)
Cobb, Georgia*	15.0	(±8.1)	NA	NA	40.4	(±11.3) [†]
DeKalb, Georgia*	18.9	(±5.6)	32.0	(±7.5)	NA	NA
Fulton, Georgia*	16.5	(±5.0)	42.5	(±7.3)	42.2	(±11.2) [†]
Gwinnett, Georgia*	20.1	(±8.9)	36.0	(±10.0) [†]	NA	NA
Hawaii, Hawaii*	15.9	(±6.9)	34.6	(±10.5) [†]	35.1	(±10.3) [†]
Honolulu, Hawaii*	17.9	(±4.4)	42.9	(±6.9)	44.0	(±7.3)
Maui, Hawaii*	17.4	(±6.9)	NA	NA	37.4	(±11.0) [†]
Ada, Idaho*	12.7	(±6.3)	29.5	(±8.2)	38.2	(±9.3)
Bonneville, Idaho	10.7	(±6.6)	NA	NA	NA	NA
Canyon, Idaho	10.2	(±5.8)	20.5	(±8.6)	NA	NA
Cook, Illinois*	10.9	(±3.7)	29.5	(±6.1)	34.7	(±5.4)
DuPage, Illinois	29.4	(±10.4) [†]	NA	NA	44.3	(±11.3) [†]
Lake, Illinois	28.2	(±10.5) [†]	NA	NA	NA	NA
Marion, Indiana*	9.4	(±3.4)	25.5	(±6.4)	42.7	(±9.5)
Polk, Iowa*	24.2	(±9.7)	37.3	(±9.6)	40.4	(±10.1) [†]
Johnson, Kansas*	22.0	(±7.9)	44.5	(±8.6)	45.7	(±10.5) [†]
Sedgwick, Kansas*	11.5	(±6.3)	22.8	(±8.1)	28.0	(±8.8)
Shawnee, Kansas	NA	NA	34.0	(±10.4) [†]	NA	NA
Jefferson, Kentucky*	14.5	(±6.8)	39.3	(±10.4) [†]	36.6	(±9.2)
East Baton Rouge, Louisiana*	10.1	(±5.8)	33.3	(±10.0) [†]	NA	NA
Jefferson, Louisiana*	12.3	(±6.3)	26.4	(±8.7)	33.5	(±11.2) [†]
Orleans, Louisiana*	9.5	(±3.0)	24.4	(±9.2)	NA	NA
St. Tammany, Louisiana	NA	NA	33.6	(±10.2) [†]	NA	NA
Cumberland, Maine*	14.3	(±7.1)	37.2	(±9.4)	35.6	(±8.4)
Penobscot, Maine	16.4	(±7.6)	NA	NA	NA	NA
York, Maine*	14.9	(±7.3)	33.5	(±9.9)	39.2	(±11.2) [†]
Anne Arundel, Maryland	NA	NA	NA	NA	44.0	(±11.0) [†]
Baltimore, Maryland*	19.2	(±8.4)	44.4	(±10.6) [†]	45.3	(±11.2) [†]
Montgomery, Maryland*	30.5	(±9.4)	56.6	(±10.2) [†]	49.1	(±10.3) [†]

See table footnotes on page 55.

TABLE 13. (Continued) Estimated percentage of children aged 6–23 months who received ≥1 dose of the seasonal influenza vaccine, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Prince George's, Maryland*	12.6	(±7.6)	42.0	(±9.9)	31.1	(±9.7)
City of Baltimore, Maryland*	11.1	(±3.4)	37.0	(±5.7)	26.5	(±8.0)
Essex, Massachusetts	17.2	(±7.9)	NA	NA	NA	NA
Middlesex, Massachusetts*	21.7	(±7.6)	55.7	(±9.4)	57.0	(±10.1) [†]
Norfolk, Massachusetts*	21.1	(±8.9)	52.6	(±11.4) [†]	NA	NA
Suffolk, Massachusetts*	11.5	(±3.5)	49.7	(±10.4) [†]	NA	NA
Worcester, Massachusetts*	15.9	(±7.2)	42.6	(±10.8) [†]	41.1	(±11.3) [†]
Oakland, Michigan*	15.8	(±8.1)	36.0	(±9.6)	42.2	(±11.6) [†]
Wayne, Michigan*	11.0	(±4.5)	23.1	(±6.5)	34.7	(±10.0) [†]
Hennepin, Minnesota	32.1	(±9.8)	48.0	(±10.0) [†]	42.8	(±9.1)
Ramsey, Minnesota*	19.9	(±8.5)	NA	NA	42.6	(±11.3) [†]
Jackson, Missouri*	12.2	(±6.8)	33.6	(±9.9)	39.1	(±11.1) [†]
St. Louis, Missouri*	15.4	(±7.2)	46.4	(±8.2)	42.9	(±10.7) [†]
Flathead, Montana*	9.0	(±5.7)	26.5	(±8.7)	NA	NA
Gallatin, Montana	NA	NA	NA	NA	33.8	(±11.2) [†]
Missoula, Montana	NA	NA	31.9	(±9.6)	NA	NA
Yellowstone, Montana*	10.0	(±5.7)	28.3	(±9.4)	32.0	(±11.3) [†]
Douglas, Nebraska*	24.1	(±7.1)	49.5	(±8.5)	45.6	(±8.2)
Lancaster, Nebraska*	16.9	(±7.4)	46.8	(±11.2) [†]	NA	NA
Clark, Nevada*	8.7	(±3.4)	18.3	(±4.9)	23.7	(±5.9)
Washoe, Nevada*	10.2	(±5.7)	28.7	(±8.3)	34.9	(±10.3) [†]
Hillsborough, New Hampshire*	16.2	(±5.8)	46.0	(±8.3)	48.3	(±9.8)
Merrimack, New Hampshire*	18.6	(±8.8)	49.5	(±11.2) [†]	NA	NA
Rockingham, New Hampshire*	17.2	(±7.5)	45.6	(±9.6)	50.9	(±10.7) [†]
Bergen, New Jersey	22.2	(±11.0) [†]	NA	NA	NA	NA
Essex, New Jersey*	12.7	(±5.9)	27.6	(±8.6)	NA	NA
Bernalillo, New Mexico*	15.6	(±5.6)	33.7	(±7.9)	37.6	(±9.8)
Dona Ana, New Mexico	5.6	(±3.7)	NA	NA	NA	NA
San Juan, New Mexico	7.8	(±4.7)	NA	NA	NA	NA
Bronx, New York*	8.8	(±4.8)	23.9	(±8.3)	33.5	(±9.8)
Kings, New York*	8.1	(±4.0)	25.2	(±6.9)	28.0	(±6.6)
Nassau, New York*	23.6	(±9.7)	NA	NA	47.0	(±11.4) [†]
New York, New York*	12.7	(±6.1)	44.3	(±10.9) [†]	68.8	(±10.4) [†]
Queens, New York*	14.2	(±5.9)	32.0	(±7.7)	36.2	(±9.5)
Suffolk, New York*	21.8	(±9.3)	41.6	(±10.3) [†]	43.1	(±10.6) [†]
Wake, North Carolina	NA	NA	48.1	(±10.8) [†]	50.5	(±11.3) [†]
Burleigh, North Dakota*	23.6	(±8.7)	39.8	(±10.2) [†]	45.5	(±10.8) [†]
Cass, North Dakota*	23.5	(±8.0)	39.6	(±9.7)	48.5	(±10.1) [†]
Grand Forks, North Dakota*	28.6	(±9.7)	57.4	(±12.0) [†]	NA	NA
Ward, North Dakota*	12.1	(±7.4)	34.2	(±9.7)	NA	NA
Cuyahoga, Ohio*	13.3	(±4.1)	33.6	(±5.4)	40.3	(±11.1) [†]
Franklin, Ohio*	17.2	(±4.1)	33.6	(±9.0)	40.0	(±10.9) [†]
Oklahoma, Oklahoma*	12.3	(±5.3)	27.9	(±7.8)	33.2	(±10.1) [†]
Tulsa, Oklahoma*	12.5	(±6.2)	34.9	(±9.8)	36.7	(±10.2) [†]
Multnomah, Oregon*	13.9	(±6.8)	35.6	(±9.7)	33.7	(±9.7)
Washington, Oregon*	12.5	(±6.1)	41.0	(±9.8)	NA	NA
Allegheny, Pennsylvania*	21.6	(±9.2)	40.8	(±9.5)	49.2	(±11.3) [†]
Philadelphia, Pennsylvania*	14.1	(±3.6)	39.4	(±5.9)	38.7	(±5.6)
Kent, Rhode Island*	26.9	(±9.3)	47.7	(±10.8) [†]	48.4	(±11.7) [†]
Providence, Rhode Island*	32.9	(±6.2)	46.3	(±6.2)	53.0	(±8.0)
Washington, Rhode Island*	31.7	(±10.2) [†]	60.4	(±11.1) [†]	57.6	(±11.9) [†]
Charleston, South Carolina	NA	NA	NA	NA	28.5	(±10.4) [†]
Greenville, South Carolina	NA	NA	34.5	(±11.0) [†]	39.0	(±10.7) [†]
Richland, South Carolina [§]	NA	NA	53.3	(±12.1) [†]	35.8	(±11.8) [†]
Minnehaha, South Dakota*	17.5	(±7.4)	38.3	(±8.8)	43.4	(±9.3)
Pennington, South Dakota	20.6	(±9.1)	31.5	(±9.0)	NA	NA
Davidson, Tennessee*	12.0	(±3.4)	33.4	(±7.5)	49.8	(±11.3) [†]
Knox, Tennessee	19.1	(±8.5)	NA	NA	NA	NA
Shelby, Tennessee*	9.7	(±2.7)	21.4	(±4.1)	32.3	(±9.5)
Bexar, Texas*	7.5	(±2.5)	28.0	(±5.1)	32.2	(±5.2)
Dallas, Texas*	17.6	(±4.1)	27.1	(±5.3)	32.8	(±5.0)
El Paso, Texas*	9.0	(±3.0)	12.5	(±3.0)	22.2	(±4.6)

See table footnotes on page 55.

TABLE 13. (Continued) Estimated percentage of children aged 6–23 months who received ≥ 1 dose of the seasonal influenza vaccine, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Harris, Texas*	11.9	(±3.5)	28.4	(±5.8)	34.0	(±6.2)
Tarrant, Texas*	11.8	(±6.3)	35.4	(±10.1) [†]	NA	NA
Davis, Utah*	18.9	(±8.5)	NA	NA	38.6	(±11.0) [†]
Salt Lake, Utah*	17.7	(±6.3)	41.9	(±8.9)	35.8	(±8.1)
Utah, Utah*	12.7	(±5.2)	34.5	(±9.5)	30.5	(±9.0)
Chittenden, Vermont*	22.1	(±7.7)	51.0	(±9.7)	50.5	(±9.9)
Washington, Vermont*	13.0	(±7.1)	40.6	(±10.5) [†]	52.7	(±11.9) [†]
Windsor, Vermont	20.4	(±9.0)	NA	NA	NA	NA
Fairfax, Virginia*	21.4	(±8.3)	48.6	(±10.1) [†]	53.9	(±11.0) [†]
King, Washington*	22.9	(±4.7)	39.8	(±6.1)	45.0	(±8.4)
Kitsap, Washington	NA	NA	NA	NA	36.0	(±10.8) [†]
Pierce, Washington*	12.3	(±6.3)	34.2	(±9.7)	32.2	(±10.2) [†]
Snohomish, Washington	19.4	(±7.8)	31.5	(±9.6)	NA	NA
Thurston, Washington	NA	NA	NA	NA	29.5	(±9.9)
Whatcom, Washington	NA	NA	NA	NA	35.2	(±10.6) [†]
Milwaukee, Wisconsin*	15.4	(±3.6)	39.3	(±5.9)	41.2	(±9.6)
Campbell, Wyoming	14.1	(±8.4)	NA	NA	NA	NA
Laramie, Wyoming*	14.6	(±6.6)	39.5	(±10.1) [†]	35.8	(±10.3) [†]
Natrona, Wyoming*	9.4	(±5.1)	15.8	(±7.9)	40.3	(±11.2) [†]
United States*	12.8	(±0.6)	32.8	(±1.0)	36.2	(±1.1)
Sample size, no.	27,712		25,602		21,674	
Biennial estimate across all selected counties	13.6	(±0.9)	33.8	(±1.3)	39.0	(±1.7)
Sample size, no.	18,419		15,693		12,570	
Range, %	5.6–32.9		12.5–60.4		22.2–68.8	

Abbreviations: CI = confidence interval; NA = not available.

* Estimates increased significantly between the first and last biennial periods ($p < 0.05$).

[†] Estimate has 95% CI half-width that exceeds 10% and might be imprecise.

[§] Estimates decreased significantly between the first and last biennial periods ($p < 0.05$).

TABLE 14. Estimated percentage of children aged 6–23 months who were fully vaccinated* with the seasonal influenza vaccine, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2005–2008

County/Area	2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)
Jefferson, Alabama	17.7	(±7.5)	20.0	(±8.1)
Anchorage, Alaska	25.6	(±7.3)	29.1	(±8.7)
Fairbanks North Star, Alaska	23.6	(±8.7)	22.0	(±10.0) [†]
Matanuska-Susitna, Alaska	NA	NA	20.6	(±8.6)
Maricopa, Arizona [§]	15.0	(±3.5)	21.8	(±5.6)
Pima, Arizona	22.9	(±6.5)	31.3	(±9.7)
Benton, Arkansas	NA	NA	17.4	(±8.0)
Pulaski, Arkansas	NA	NA	21.3	(±8.1)
Washington, Arkansas	NA	NA	16.7	(±8.0)
Alameda, California	28.7	(±7.9)	34.0	(±11.0) [†]
Los Angeles, California [§]	13.9	(±3.3)	22.5	(±4.7)
San Bernardino, California	12.0	(±4.4)	15.1	(±6.6)
San Diego, California	21.5	(±7.0)	28.2	(±10.5) [†]
Santa Clara, California	24.8	(±7.6)	NA	NA
Boulder, Colorado	24.2	(±9.5)	NA	NA
El Paso, Colorado	20.4	(±8.0)	28.5	(±10.9) [†]
Jefferson, Colorado	32.6	(±10.9) [†]	38.3	(±11.3) [†]
Fairfield, Connecticut	31.8	(±8.3)	41.7	(±10.3) [†]
Hartford, Connecticut	28.8	(±8.4)	38.4	(±10.6) [†]
New Haven, Connecticut	24.9	(±7.8)	31.6	(±9.5)
Kent, Delaware [§]	14.3	(±6.5)	26.4	(±9.5)
New Castle, Delaware	32.9	(±7.2)	35.4	(±7.2)
Sussex, Delaware	17.1	(±7.3)	16.6	(±6.5)
District of Columbia [§]	23.1	(±4.3)	30.2	(±5.4)
Broward, Florida	16.0	(±7.4)	NA	NA
Duval, Florida	14.8	(±3.5)	NA	NA
Hillsborough, Florida	15.3	(±7.1)	NA	NA
Dade, Florida	11.9	(±5.3)	11.2	(±3.8)
Orange, Florida	NA	NA	20.4	(±8.9)
Cobb, Georgia	NA	NA	20.9	(±8.5)
DeKalb, Georgia	17.6	(±5.5)	NA	NA
Fulton, Georgia	28.4	(±6.2)	34.4	(±10.8) [†]
Gwinnett, Georgia	21.6	(±8.2)	NA	NA
Hawaii, Hawaii	19.8	(±8.2)	20.7	(±8.6)
Honolulu, Hawaii	28.9	(±6.3)	28.9	(±6.4)
Maui, Hawaii	NA	NA	25.6	(±9.1)
Ada, Idaho	18.9	(±7.0)	23.8	(±7.9)
Canyon, Idaho	12.2	(±6.4)	NA	NA
Cook, Illinois	15.8	(±4.3)	21.7	(±4.5)
DuPage, Illinois	NA	NA	34.8	(±11.4) [†]
Marion, Indiana [§]	14.5	(±4.2)	27.1	(±9.1)
Polk, Iowa	23.1	(±7.9)	28.1	(±9.2)
Johnson, Kansas	27.6	(±7.0)	37.4	(±10.8) [†]
Sedgwick, Kansas	13.9	(±6.3)	19.8	(±7.6)
Shawnee, Kansas	17.0	(±7.2)	NA	NA
Jefferson, Kentucky	25.4	(±8.8)	22.2	(±7.9)
East Baton Rouge, Louisiana	18.7	(±8.1)	NA	NA
Jefferson, Louisiana	15.0	(±6.6)	13.6	(±7.3)
Orleans, Louisiana	14.7	(±7.1)	NA	NA
St. Tammany, Louisiana	18.5	(±8.3)	NA	NA
Cumberland, Maine	24.4	(±8.7)	26.7	(±7.8)
York, Maine	18.4	(±7.7)	25.8	(±10.0) [†]
Anne Arundel, Maryland	NA	NA	37.6	(±11.1) [†]
Baltimore, Maryland	33.4	(±10.2) [†]	32.8	(±10.8) [†]
Montgomery, Maryland	33.6	(±9.6)	37.8	(±10.3) [†]
Prince George's, Maryland	21.5	(±8.5)	23.2	(±9.1)
City of Baltimore, Maryland	22.6	(±4.8)	20.3	(±7.6)
Middlesex, Massachusetts	41.4	(±9.6)	46.6	(±10.3) [†]
Norfolk, Massachusetts	38.9	(±11.5) [†]	NA	NA
Suffolk, Massachusetts	31.6	(±10.1) [†]	NA	NA
Worcester, Massachusetts	29.1	(±10.1) [†]	25.2	(±9.4)
Oakland, Michigan	22.7	(±8.1)	31.8	(±11.3) [†]
Wayne, Michigan	12.2	(±4.7)	21.5	(±8.4)

See table footnotes on page 57.

TABLE 14. (Continued) Estimated percentage of children aged 6–23 months who were fully vaccinated* with the seasonal influenza vaccine, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2005–2008

County/Area	2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)
Hennepin, Minnesota	29.1	(±8.5)	30.7	(±8.4)
Ramsey, Minnesota	NA	NA	29.5	(±10.4) [†]
Jackson, Missouri	20.7	(±8.1)	25.2	(±9.9)
St. Louis, Missouri	30.5	(±7.4)	31.8	(±9.8)
Flathead, Montana	17.3	(±7.0)	NA	NA
Gallatin, Montana	NA	NA	24.8	(±10.8) [†]
Missoula, Montana	20.1	(±8.2)	NA	NA
Yellowstone, Montana	16.4	(±8.2)	19.0	(±8.9)
Douglas, Nebraska	37.6	(±8.1)	33.1	(±7.9)
Lancaster, Nebraska	31.0	(±10.5) [†]	NA	NA
Clark, Nevada	10.7	(±4.0)	14.3	(±4.7)
Washoe, Nevada	19.5	(±7.1)	23.4	(±9.3)
Hillsborough, New Hampshire	36.2	(±8.1)	35.6	(±9.5)
Merrimack, New Hampshire	28.7	(±10.3) [†]	NA	NA
Rockingham, New Hampshire	28.8	(±8.5)	39.7	(±10.7) [†]
Essex, New Jersey	15.6	(±6.3)	NA	NA
Bernalillo, New Mexico	22.3	(±6.6)	27.5	(±9.1)
Bronx, New York	15.5	(±6.5)	23.6	(±8.7)
Kings, New York	13.4	(±5.1)	16.9	(±5.4)
Nassau, New York	NA	NA	36.7	(±11.4) [†]
New York, New York [§]	31.9	(±10.2) [†]	55.7	(±12.3) [†]
Queens, New York	16.5	(±5.7)	23.8	(±8.0)
Suffolk, New York	26.7	(±9.1)	34.3	(±10.4) [†]
Wake, North Carolina	26.8	(±9.3)	40.0	(±11.7) [†]
Burleigh, North Dakota	28.8	(±9.4)	29.0	(±9.8)
Cass, North Dakota	29.9	(±9.3)	40.7	(±10.1) [†]
Grand Forks, North Dakota	44.6	(±12.0) [†]	NA	NA
Ward, North Dakota	24.1	(±8.7)	NA	NA
Cuyahoga, Ohio	19.9	(±4.3)	29.5	(±10.2) [†]
Franklin, Ohio	22.2	(±7.7)	29.0	(±10.1) [†]
Oklahoma, Oklahoma	17.1	(±6.3)	18.9	(±7.0)
Tulsa, Oklahoma	21.3	(±7.5)	22.8	(±8.6)
Multnomah, Oregon	22.1	(±7.8)	22.1	(±8.0)
Washington, Oregon	24.5	(±8.3)	NA	NA
Allegheny, Pennsylvania	27.5	(±8.1)	38.4	(±11.3) [†]
Philadelphia, Pennsylvania	24.5	(±5.0)	27.7	(±4.9)
Kent, Rhode Island	32.8	(±10.1) [†]	37.3	(±11.6) [†]
Providence, Rhode Island [§]	31.0	(±5.6)	41.0	(±7.9)
Washington, Rhode Island	50.4	(±12.1) [†]	51.9	(±12.7) [†]
Charleston, South Carolina	NA	NA	20.8	(±9.4)
Greenville, South Carolina	20.9	(±8.3)	23.0	(±8.5)
Richland, South Carolina	33.4	(±11.5) [†]	24.5	(±10.7) [†]
Minnehaha, South Dakota	21.3	(±7.8)	30.5	(±8.5)
Pennington, South Dakota	21.7	(±7.7)	NA	NA
Davidson, Tennessee [§]	19.7	(±6.2)	35.5	(±11.2) [†]
Shelby, Tennessee [§]	13.3	(±3.2)	23.8	(±8.7)
Bexar, Texas	14.4	(±3.5)	18.1	(±4.1)
Dallas, Texas	16.0	(±4.3)	20.3	(±4.1)
El Paso, Texas	6.6	(±2.1)	10.2	(±3.0)
Harris, Texas	17.1	(±4.6)	22.7	(±5.3)
Tarrant, Texas	18.4	(±7.8)	NA	NA
Davis, Utah	NA	NA	29.6	(±10.4) [†]
Salt Lake, Utah	23.5	(±6.9)	22.2	(±6.7)
Utah, Utah	17.9	(±7.4)	18.9	(±7.1)
Chittenden, Vermont	37.5	(±9.4)	43.2	(±10.2) [†]
Washington, Vermont	30.2	(±9.9)	41.9	(±12.6) [†]
Fairfax, Virginia	31.7	(±9.5)	37.7	(±11.2) [†]
King, Washington [§]	26.7	(±5.1)	36.9	(±8.1)
Kitsap, Washington	NA	NA	24.4	(±9.8)
Pierce, Washington	25.0	(±8.7)	21.7	(±9.3)
Snohomish, Washington	18.9	(±7.9)	NA	NA
Thurston, Washington	NA	NA	22.7	(±9.1)
Whatcom, Washington	NA	NA	25.2	(±9.8)

See table footnotes on page 57.

TABLE 14. (Continued) Estimated percentage of children aged 6–23 months who were fully vaccinated* with the seasonal influenza vaccine, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2005–2008

County/Area	2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)
Milwaukee, Wisconsin	27.7	(±5.3)	30.1	(±8.9)
Laramie, Wyoming	22.9	(±8.4)	24.4	(±9.2)
Natrona, Wyoming [§]	7.2	(±4.8)	23.8	(±9.4)
United States[§]	19.3	(±0.8)	25.1	(±1.0)
Sample size, no.	25,602		21,674	
All selected counties	20.5	(±1.1)	26.6	(±1.5)
Sample size, no.	15,693		12,570	
Range, %	6.6–50.4		10.2–55.7	

Abbreviations: CI = confidence interval; NA = not available.

* For each survey year, sampled children aged 6–23 months were considered to be up to date for the seasonal influenza vaccine if they had been administered 1 dose of the seasonal influenza vaccine during the most recent seasonal influenza season, unless they had never been administered an influenza vaccine dose before the most recent influenza season, in which case they required 2 doses of the vaccine during the most recent influenza season.

† Estimate has 95% CI half-width that exceeds 10% and might be imprecise.

§ Estimates increased significantly between the first and last biennial periods ($p < 0.05$).

TABLE 15. Estimated vaccination coverage with ≥ 1 dose of hepatitis A vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2007–2008

County/Area	2007–2008	
	%	(95% CI)
Jefferson, Alabama	53.5	(±10.6)*
Madison, Alabama	46.3	(±11.9)*
Mobile, Alabama	37.1	(±10.4)*
Shelby, Alabama	46.7	(±11.6)*
Anchorage, Alaska	78.7	(±7.3)
Fairbanks North Star, Alaska	75.5	(±9.5)
Matanuska-Susitna, Alaska	66.2	(±10.3)*
Maricopa, Arizona	78.8	(±5.4)
Pima, Arizona	76.9	(±8.2)
Benton, Arkansas	55.8	(±11.0)*
Pulaski, Arkansas	51.9	(±11.1)*
Washington, Arkansas	34.8	(±10.7)*
Alameda, California	74.7	(±8.2)
Los Angeles, California	79.0	(±3.7)
Orange, California	75.4	(±9.8)
Riverside, California	76.5	(±9.7)
San Bernardino, California	82.9	(±5.3)
San Diego, California	71.4	(±10.3)*
Arapahoe, Colorado	67.6	(±10.1)*
Boulder, Colorado	65.9	(±11.3)*
El Paso, Colorado	55.3	(±10.9)*
Jefferson, Colorado	69.7	(±10.0)*
Weld, Colorado	67.4	(±11.4)*
Fairfield, Connecticut	53.8	(±8.7)
Hartford, Connecticut	45.8	(±9.4)
New Haven, Connecticut	49.1	(±9.0)
New London, Connecticut	45.5	(±11.0)*
Kent, Delaware	59.9	(±9.3)
New Castle, Delaware	55.8	(±6.0)
Sussex, Delaware	40.2	(±7.9)
District of Columbia	61.4	(±4.7)
Broward, Florida	52.6	(±11.9)*
Dade, Florida	44.6	(±5.2)
Orange, Florida	51.8	(±9.8)
Palm Beach, Florida	55.3	(±11.1)*
Cobb, Georgia	62.6	(±10.9)*
DeKalb, Georgia	75.6	(±9.6)
Fulton, Georgia	67.3	(±10.6)*
Gwinnett, Georgia	63.4	(±11.9)*
Hawaii, Hawaii	58.8	(±11.6)*
Honolulu, Hawaii	59.7	(±6.2)
Maui, Hawaii	65.8	(±12.3)*
Ada, Idaho	63.5	(±8.5)
Bonneville, Idaho	63.7	(±13.3)*
Canyon, Idaho	70.6	(±9.8)
Cook, Illinois	49.6	(±4.7)
DuPage, Illinois	47.9	(±10.7)*
Lake, Illinois	57.2	(±12.5)*
Will, Illinois	38.3	(±11.2)*
Allen, Indiana	57.8	(±12.2)*
Hamilton, Indiana	64.9	(±10.4)*
Lake, Indiana	47.2	(±13.5)*
Marion, Indiana	50.7	(±8.4)
Linn, Iowa	51.9	(±12.9)*
Polk, Iowa	66.4	(±9.3)
Johnson, Kansas	61.5	(±9.8)
Sedgwick, Kansas	46.7	(±9.8)
Shawnee, Kansas	58.5	(±12.0)*
Jefferson, Kentucky	58.3	(±8.5)
Caddo, Louisiana	56.8	(±12.2)*

See table footnotes on page 59.

TABLE 15. (Continued) Estimated vaccination coverage with ≥ 1 dose of hepatitis A vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2007–2008

County/Area	2007–2008	
	%	(95% CI)
East Baton Rouge, Louisiana	56.8	(± 12.1)*
Jefferson, Louisiana	62.9	(± 10.3)*
Lafayette, Louisiana	49.4	(± 9.7)
Orleans, Louisiana	65.1	(± 12.1)*
Androscoggin, Maine	37.6	(± 11.1)*
Cumberland, Maine	31.4	(± 9.3)
Kennebec, Maine	36.0	(± 13.6)*
Penobscot, Maine	45.0	(± 10.0)*
York, Maine	32.5	(± 10.4)*
Anne Arundel, Maryland	58.0	(± 10.7)*
Baltimore, Maryland	60.9	(± 10.2)*
Howard, Maryland	66.1	(± 11.6)*
Montgomery, Maryland	67.2	(± 8.7)
Prince George's, Maryland	65.1	(± 9.7)
City of Baltimore, Maryland	71.1	(± 9.4)
Essex, Massachusetts	41.9	(± 8.9)
Middlesex, Massachusetts	49.2	(± 8.4)
Norfolk, Massachusetts	48.0	(± 11.2)*
Plymouth, Massachusetts	41.3	(± 12.3)*
Suffolk, Massachusetts	51.0	(± 13.2)*
Worcester, Massachusetts	33.6	(± 10.0)*
Kent, Michigan	54.5	(± 12.2)*
Oakland, Michigan	47.2	(± 11.0)*
Wayne, Michigan	48.2	(± 9.1)
Anoka, Minnesota	53.7	(± 10.9)*
Dakota, Minnesota	54.5	(± 11.6)*
Hennepin, Minnesota	47.1	(± 7.4)
Ramsey, Minnesota	51.4	(± 9.5)
Hinds, Mississippi	36.0	(± 11.6)*
Jackson, Missouri	61.5	(± 10.8)*
Jefferson, Missouri	63.3	(± 11.9)*
St. Charles, Missouri	51.3	(± 12.4)*
St. Louis, Missouri	64.3	(± 9.7)
City of St. Louis, Missouri	52.1	(± 12.0)*
Cascade, Montana	65.6	(± 12.4)*
Flathead, Montana	47.0	(± 11.9)*
Gallatin, Montana	24.2	(± 10.6)*
Lewis and Clark, Montana	43.9	(± 12.2)*
Missoula, Montana	47.4	(± 11.4)*
Yellowstone, Montana	43.2	(± 11.0)*
Douglas, Nebraska	67.5	(± 7.1)
Lancaster, Nebraska	52.7	(± 11.7)*
Clark, Nevada	71.4	(± 5.3)
Washoe, Nevada	74.9	(± 8.0)
Grafton, New Hampshire	38.5	(± 12.8)*
Hillsborough, New Hampshire	44.0	(± 6.7)
Merrimack, New Hampshire	51.7	(± 11.6)*
Rockingham, New Hampshire	44.9	(± 8.2)
Strafford, New Hampshire	53.1	(± 12.3)*
Bergen, New Jersey	44.4	(± 9.7)
Burlington, New Jersey	48.4	(± 9.0)
Camden, New Jersey	53.3	(± 12.5)*
Essex, New Jersey	56.6	(± 11.9)*
Hudson, New Jersey	56.9	(± 12.6)*
Middlesex, New Jersey	40.6	(± 10.8)*
Monmouth, New Jersey	42.0	(± 12.4)*
Ocean, New Jersey	58.7	(± 12.0)*
Union, New Jersey	53.9	(± 13.2)*
Bernalillo, New Mexico	61.3	(± 8.7)
Dona Ana, New Mexico	88.6	(± 5.6)

See table footnotes on page 59.

TABLE 15. (Continued) Estimated vaccination coverage with ≥ 1 dose of hepatitis A vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2007–2008

County/Area	2007–2008	
	%	(95% CI)
Sandoval, New Mexico	67.2	(± 11.6)*
San Juan, New Mexico	69.5	(± 11.1)*
Bronx, New York	72.7	(± 7.6)
Kings, New York	48.3	(± 6.3)
Monroe, New York	57.1	(± 13.2)*
Nassau, New York	39.6	(± 11.2)*
New York, New York	47.4	(± 9.7)
Queens, New York	56.4	(± 8.0)
Suffolk, New York	50.8	(± 10.1)*
Mecklenburg, North Carolina	60.1	(± 11.8)*
Wake, North Carolina	58.1	(± 9.2)
Burleigh, North Dakota	63.0	(± 10.3)*
Cass, North Dakota	67.0	(± 8.3)
Grand Forks, North Dakota	62.7	(± 12.2)*
Ward, North Dakota	53.4	(± 11.2)*
Cuyahoga, Ohio	53.2	(± 10.8)*
Franklin, Ohio	57.3	(± 11.6)*
Hamilton, Ohio	58.9	(± 10.5)*
Cleveland, Oklahoma	66.7	(± 12.0)*
Oklahoma, Oklahoma	77.3	(± 8.5)
Tulsa, Oklahoma	70.8	(± 9.1)
Clackamas, Oregon	58.9	(± 13.2)*
Lane, Oregon	62.6	(± 12.1)*
Marion, Oregon	68.9	(± 11.2)*
Multnomah, Oregon	70.6	(± 8.7)
Washington, Oregon	74.4	(± 9.4)
Allegheny, Pennsylvania	65.1	(± 9.6)
Lancaster, Pennsylvania	52.6	(± 12.3)*
Montgomery, Pennsylvania	59.0	(± 10.4)*
Philadelphia, Pennsylvania	65.9	(± 4.5)
Kent, Rhode Island	64.9	(± 11.5)*
Providence, Rhode Island	68.0	(± 6.4)
Washington, Rhode Island	64.7	(± 10.8)*
Charleston, South Carolina	45.6	(± 12.3)*
Greenville, South Carolina	56.6	(± 11.1)*
Horry, South Carolina	49.3	(± 12.2)*
Richland, South Carolina	57.8	(± 10.3)*
Spartanburg, South Carolina	55.0	(± 12.4)*
York, South Carolina	62.3	(± 11.1)*
Minnehaha, South Dakota	48.1	(± 8.7)
Pennington, South Dakota	60.8	(± 12.0)*
Davidson, Tennessee	64.3	(± 9.9)
Knox, Tennessee	62.8	(± 12.2)*
Shelby, Tennessee	65.8	(± 9.9)
Bexar, Texas	80.0	(± 3.7)
Dallas, Texas	75.8	(± 4.0)
El Paso, Texas	87.0	(± 3.0)
Harris, Texas	79.3	(± 5.8)
Tarrant, Texas	72.6	(± 9.9)
Davis, Utah	70.8	(± 9.5)
Salt Lake, Utah	77.8	(± 6.8)
Utah, Utah	66.5	(± 9.1)
Chittenden, Vermont	59.5	(± 8.9)
Franklin, Vermont	39.8	(± 10.0)*
Washington, Vermont	45.4	(± 12.6)*
Windham, Vermont	32.3	(± 12.0)*
Fairfax, Virginia	60.7	(± 9.9)
Loudoun, Virginia	62.6	(± 11.5)*
Virginia Beach, Virginia	53.7	(± 12.5)*
King, Washington	71.7	(± 6.8)

See table footnotes on page 59.

TABLE 15. (Continued) Estimated vaccination coverage with ≥ 1 dose of hepatitis A vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2007–2008

County/Area	2007–2008	
	%	(95% CI)
Kitsap, Washington	66.8	(± 9.7)
Pierce, Washington	59.8	(± 11.3)*
Snohomish, Washington	59.6	(± 12.5)*
Spokane, Washington	56.0	(± 11.7)*
Thurston, Washington	54.6	(± 10.6)*
Whatcom, Washington	53.6	(± 10.6)*
Kanawha, West Virginia	47.7	(± 11.0)*
Dane, Wisconsin	45.3	(± 12.8)*
Milwaukee, Wisconsin	57.4	(± 8.8)
Campbell, Wyoming	60.2	(± 11.6)*
Laramie, Wyoming	41.4	(± 10.4)*
Natrona, Wyoming	35.4	(± 10.7)*
Sweetwater, Wyoming	67.1	(± 9.6)
United States	59.6	(± 0.9)
Sample size, no.	35,447	
All selected counties	63.2	(± 1.2)
Sample size, no.	20,552	
Range, %	24.2–88.6	

Abbreviations: CI = confidence interval; NA = not available.

* Estimate has 95% CI half-width that exceeds 10% and might be imprecise.

TABLE 16. Estimated vaccination coverage with ≥ 2 doses of hepatitis A vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2007–2008

County/Area	2007–2008	
	%	(95% CI)
Jefferson, Alabama	26.4	(± 7.4)
Madison, Alabama	19.9	(± 8.0)
Mobile, Alabama	18.9	(± 7.1)
Shelby, Alabama	25.8	(± 9.1)
Anchorage, Alaska	46.4	(± 7.8)
Fairbanks North Star, Alaska	31.2	(± 10.0)*
Matanuska-Susitna, Alaska	28.4	(± 7.8)
Maricopa, Arizona	38.0	(± 5.7)
Pima, Arizona	43.4	(± 9.3)
Benton, Arkansas	24.8	(± 8.1)
Pulaski, Arkansas	22.2	(± 7.2)
Washington, Arkansas	21.0	(± 8.7)
Alameda, California	36.3	(± 9.0)
Los Angeles, California	40.9	(± 4.3)
Orange, California	39.5	(± 11.1)*
Riverside, California	33.4	(± 11.1)*
San Bernardino, California	34.1	(± 9.2)
San Diego, California	30.3	(± 9.9)
Arapahoe, Colorado	28.4	(± 10.3)*
Boulder, Colorado	34.0	(± 10.4)*
El Paso, Colorado	25.8	(± 8.7)
Jefferson, Colorado	32.1	(± 10.1)*
Weld, Colorado	28.2	(± 10.2)*
Fairfield, Connecticut	25.3	(± 7.8)
Hartford, Connecticut	27.7	(± 7.3)
New Haven, Connecticut	24.3	(± 7.5)
New London, Connecticut	28.0	(± 9.1)
Kent, Delaware	32.1	(± 8.8)
New Castle, Delaware	30.1	(± 5.0)
Sussex, Delaware	24.5	(± 6.5)
District of Columbia	28.7	(± 4.1)
Broward, Florida	25.0	(± 8.2)
Dade, Florida	20.7	(± 4.0)
Orange, Florida	23.0	(± 6.2)
Palm Beach, Florida	28.0	(± 9.0)
Cobb, Georgia	27.2	(± 7.9)
DeKalb, Georgia	39.3	(± 12.5)*
Fulton, Georgia	30.8	(± 8.8)
Gwinnett, Georgia	23.0	(± 8.7)
Hawaii, Hawaii	33.9	(± 9.7)
Honolulu, Hawaii	32.2	(± 5.6)
Maui, Hawaii	40.7	(± 11.1)*
Ada, Idaho	24.6	(± 6.5)
Bonneville, Idaho	33.5	(± 10.6)*
Canyon, Idaho	26.7	(± 9.0)
Cook, Illinois	22.3	(± 3.5)
DuPage, Illinois	19.1	(± 7.4)
Lake, Illinois	30.0	(± 10.0)*
Will, Illinois	19.9	(± 8.1)
Allen, Indiana	28.7	(± 10.2)*
Hamilton, Indiana	36.0	(± 10.6)*
Lake, Indiana	21.3	(± 8.9)
Marion, Indiana	23.4	(± 7.4)
Linn, Iowa	22.0	(± 8.4)
Polk, Iowa	38.5	(± 8.8)
Johnson, Kansas	29.6	(± 7.5)
Sedgwick, Kansas	17.5	(± 6.1)
Shawnee, Kansas	27.5	(± 10.4)*
Jefferson, Kentucky	25.6	(± 6.7)
Caddo, Louisiana	27.4	(± 9.1)

See table footnotes on page 61.

TABLE 16. (Continued) Estimated vaccination coverage with ≥ 2 doses of hepatitis A vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2007–2008

County/Area	2007–2008	
	%	(95% CI)
East Baton Rouge, Louisiana	26.2	(± 9.8)
Jefferson, Louisiana	34.8	(± 10.0)*
Lafayette, Louisiana	25.7	(± 9.1)
Orleans, Louisiana	37.7	(± 11.5)*
Androscoggin, Maine	20.6	(± 9.5)
Cumberland, Maine	18.5	(± 7.3)
Kennebec, Maine	19.7	(± 9.4)
Penobscot, Maine	19.4	(± 6.8)
York, Maine	21.0	(± 8.0)
Anne Arundel, Maryland	26.3	(± 8.0)
Baltimore, Maryland	34.0	(± 9.1)
Howard, Maryland	37.8	(± 10.8)*
Montgomery, Maryland	38.5	(± 9.3)
Prince George's, Maryland	32.9	(± 9.2)
City of Baltimore, Maryland	29.3	(± 9.3)
Essex, Massachusetts	27.1	(± 8.2)
Middlesex, Massachusetts	26.8	(± 7.4)
Norfolk, Massachusetts	29.8	(± 8.6)
Plymouth, Massachusetts	23.1	(± 9.5)
Suffolk, Massachusetts	29.6	(± 10.8)*
Worcester, Massachusetts	19.8	(± 7.8)
Kent, Michigan	24.1	(± 8.1)
Oakland, Michigan	24.5	(± 8.7)
Wayne, Michigan	21.7	(± 6.6)
Anoka, Minnesota	23.7	(± 7.5)
Dakota, Minnesota	27.1	(± 9.0)
Hennepin, Minnesota	24.2	(± 5.5)
Ramsey, Minnesota	25.0	(± 8.1)
Hinds, Mississippi	19.8	(± 8.5)
Jackson, Missouri	28.7	(± 8.7)
Jefferson, Missouri	30.5	(± 9.4)
St. Charles, Missouri	28.3	(± 9.6)
St. Louis, Missouri	27.5	(± 7.8)
City of St. Louis, Missouri	25.3	(± 9.3)
Cascade, Montana	36.4	(± 10.6)*
Flathead, Montana	27.4	(± 9.6)
Gallatin, Montana	18.7	(± 8.8)
Lewis and Clark, Montana	24.7	(± 8.8)
Missoula, Montana	21.0	(± 8.3)
Yellowstone, Montana	20.8	(± 7.8)
Douglas, Nebraska	40.8	(± 6.7)
Lancaster, Nebraska	28.5	(± 8.2)
Clark, Nevada	34.0	(± 5.3)
Washoe, Nevada	37.3	(± 8.6)
Grafton, New Hampshire	24.0	(± 8.4)
Hillsborough, New Hampshire	27.4	(± 5.8)
Merrimack, New Hampshire	27.5	(± 9.6)
Rockingham, New Hampshire	27.0	(± 6.4)
Strafford, New Hampshire	24.3	(± 9.0)
Bergen, New Jersey	27.6	(± 8.7)
Burlington, New Jersey	26.3	(± 8.8)
Camden, New Jersey	26.2	(± 10.3)*
Essex, New Jersey	19.1	(± 7.8)
Hudson, New Jersey	28.8	(± 10.4)*
Middlesex, New Jersey	23.3	(± 8.5)
Monmouth, New Jersey	20.1	(± 8.9)
Ocean, New Jersey	24.4	(± 8.4)
Union, New Jersey	22.6	(± 9.0)
Bernalillo, New Mexico	32.1	(± 7.9)
Dona Ana, New Mexico	45.1	(± 10.7)*

See table footnotes on page 61.

TABLE 16. (Continued) Estimated vaccination coverage with ≥ 2 doses of hepatitis A vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2007–2008

County/Area	2007–2008	
	%	(95% CI)
Sandoval, New Mexico	30.2	(± 10.5)*
San Juan, New Mexico	26.5	(± 10.6)*
Bronx, New York	36.3	(± 7.8)
Kings, New York	22.0	(± 5.6)
Monroe, New York	33.5	(± 10.0)*
Nassau, New York	23.9	(± 8.5)
New York, New York	27.0	(± 7.3)
Queens, New York	27.9	(± 7.1)
Suffolk, New York	26.3	(± 7.5)
Mecklenburg, North Carolina	35.4	(± 10.6)*
Wake, North Carolina	25.3	(± 7.5)
Burleigh, North Dakota	37.5	(± 9.5)
Cass, North Dakota	33.6	(± 7.8)
Grand Forks, North Dakota	37.6	(± 10.3)*
Ward, North Dakota	20.2	(± 7.6)
Cuyahoga, Ohio	27.5	(± 8.2)
Franklin, Ohio	30.9	(± 9.0)
Hamilton, Ohio	27.3	(± 9.0)
Cleveland, Oklahoma	30.0	(± 10.0)*
Oklahoma, Oklahoma	36.1	(± 7.9)
Tulsa, Oklahoma	29.8	(± 8.1)
Clackamas, Oregon	29.5	(± 10.2)*
Lane, Oregon	28.7	(± 9.7)
Marion, Oregon	29.6	(± 9.3)
Multnomah, Oregon	30.1	(± 8.3)
Washington, Oregon	34.3	(± 9.6)
Allegheny, Pennsylvania	33.3	(± 8.9)
Lancaster, Pennsylvania	26.2	(± 9.6)
Montgomery, Pennsylvania	38.2	(± 8.3)
Philadelphia, Pennsylvania	35.7	(± 4.2)
Kent, Rhode Island	43.5	(± 9.0)
Providence, Rhode Island	39.9	(± 6.0)
Washington, Rhode Island	41.5	(± 10.4)*
Charleston, South Carolina	20.5	(± 7.7)
Greenville, South Carolina	27.9	(± 8.7)
Horry, South Carolina	20.2	(± 8.5)
Richland, South Carolina	33.7	(± 8.7)
Spartanburg, South Carolina	25.7	(± 9.4)
York, South Carolina	26.7	(± 7.9)
Minnehaha, South Dakota	20.9	(± 6.3)
Pennington, South Dakota	25.8	(± 9.6)
Davidson, Tennessee	36.9	(± 9.6)
Knox, Tennessee	30.8	(± 10.5)*
Shelby, Tennessee	29.7	(± 8.0)
Bexar, Texas	36.3	(± 4.4)
Dallas, Texas	36.0	(± 4.2)
El Paso, Texas	47.6	(± 4.4)
Harris, Texas	36.4	(± 6.2)
Tarrant, Texas	27.6	(± 9.5)
Davis, Utah	31.1	(± 9.7)
Salt Lake, Utah	33.5	(± 7.1)
Utah, Utah	26.2	(± 7.4)
Chittenden, Vermont	34.5	(± 8.5)
Franklin, Vermont	21.4	(± 8.0)
Washington, Vermont	22.0	(± 9.3)
Windham, Vermont	22.5	(± 8.9)
Fairfax, Virginia	31.5	(± 8.5)
Loudoun, Virginia	29.3	(± 10.5)*
Virginia Beach, Virginia	22.6	(± 9.1)
King, Washington	32.0	(± 5.8)

See table footnotes on page 61.

TABLE 16. (Continued) Estimated vaccination coverage with ≥ 2 doses of hepatitis A vaccine among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2007–2008

County/Area	2007–2008	
	%	(95% CI)
Kitsap, Washington	28.3	(± 9.2)
Pierce, Washington	25.1	(± 8.4)
Snohomish, Washington	26.7	(± 9.5)
Spokane, Washington	21.2	(± 8.8)
Thurston, Washington	19.8	(± 8.4)
Whatcom, Washington	25.8	(± 8.6)
Kanawha, West Virginia	24.6	(± 8.6)
Dane, Wisconsin	25.0	(± 9.2)
Milwaukee, Wisconsin	30.0	(± 7.4)
Campbell, Wyoming	27.0	(± 9.2)
Laramie, Wyoming	20.8	(± 8.2)
Natrona, Wyoming	19.5	(± 7.5)
Sweetwater, Wyoming	31.4	(± 9.1)
United States	29.1	(± 0.8)
Sample size, no.	35,447	
All selected counties	30.1	(± 1.1)
Sample size, no.	20,552	
Range, %	17.5–47.6	

Abbreviations: CI = confidence interval; NA = not available.

* Estimate has 95% CI half-width that exceeds 10% and might be imprecise.

TABLE 17. Estimated vaccination coverage for the 3:3:1 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1999–2008

County/Area	1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Jefferson, Alabama†	86.2	(±2.9) [§]	86.9	(±3.0) [§]	87.5	(±3.6) [§]	91.9	(±3.6) [§]	92.5	(±4.0) [§]
Madison, Alabama†	84.3	(±5.4) [§]	NA	NA	91.4	(±4.5) [§]	90.9	(±4.4) [§]	93.2	(±3.8) [§]
Mobile, Alabama†	83.1	(±5.7) [§]	86.8	(±5.5) [§]	89.8	(±4.5) [§]	89.3	(±4.7) [§]	91.6	(±4.6) [§]
Montgomery, Alabama	83.9	(±6.0) [§]	NA	NA	NA	NA	NA	NA	NA	NA
Shelby, Alabama	85.6	(±5.2) [§]	86.7	(±5.8) [§]	90.8	(±5.1) [§]	NA	NA	91.4	(±5.4) [§]
Anchorage, Alaska	83.9	(±3.9) [§]	83.5	(±4.6) [§]	89.0	(±3.5) [§]	86.7	(±4.8) [§]	87.9	(±4.8) [§]
Fairbanks North Star, Alaska	84.4	(±5.2) [§]	77.8	(±6.7) [§]	83.7	(±5.5) [§]	84.3	(±6.2) [§]	87.3	(±6.0) [§]
Kenai Peninsula, Alaska	86.7	(±5.0) [§]	NA	NA	NA	NA	NA	NA	NA	NA
Matanuska-Susitna, Alaska	85.3	(±5.1) [§]	84.5	(±6.2) [§]	87.5	(±5.6) [§]	83.2	(±6.4) [§]	84.0	(±6.7) [§]
Coconino, Arizona	NA	NA	NA	NA	88.0	(±6.4) [§]	NA	NA	NA	NA
Maricopa, Arizona†	80.1	(±3.5) [§]	81.9	(±3.4) [§]	88.1	(±2.8) [§]	85.7	(±3.2) [§]	87.9	(±4.1) [§]
Mohave, Arizona	83.1	(±5.8) [§]	80.4	(±7.4) [§]	NA	NA	NA	NA	NA	NA
Pima, Arizona	85.9	(±4.1) [§]	78.7	(±5.1) [§]	86.2	(±4.5) [§]	86.0	(±4.8) [§]	90.6	(±5.0) [§]
Pinal, Arizona†	83.7	(±6.1) [§]	84.2	(±6.3) [§]	85.7	(±6.3) [§]	92.1	(±4.6) [§]	NA	NA
Yavapai, Arizona	NA	NA	82.9	(±6.7) [§]	85.5	(±6.1) [§]	NA	NA	NA	NA
Yuma, Arizona†	80.0	(±6.4)	76.7	(±7.5)	89.0	(±5.3) [§]	94.6	(±2.0) [§]	NA	NA
Benton, Arkansas	NA	NA	83.7	(±6.6) [§]	90.7	(±4.4) [§]	86.1	(±6.1) [§]	91.1	(±4.7) [§]
Pulaski, Arkansas†	79.3	(±6.0)	86.6	(±5.2) [§]	91.6	(±4.2) [§]	83.8	(±7.3) [§]	92.9	(±4.1) [§]
Washington, Arkansas	NA	NA	83.5	(±6.8) [§]	NA	NA	NA	NA	87.8	(±5.8) [§]
Alameda, California	82.6	(±6.0) [§]	87.2	(±5.9) [§]	88.4	(±5.6) [§]	88.2	(±4.1) [§]	88.5	(±5.4) [§]
Los Angeles, California†	83.7	(±3.3) [§]	83.5	(±3.7) [§]	89.7	(±2.5) [§]	89.8	(±2.7) [§]	91.8	(±2.3) [§]
Orange, California†	80.8	(±5.9) [§]	84.8	(±5.9) [§]	85.5	(±5.7) [§]	89.2	(±5.1) [§]	91.0	(±4.9) [§]
Riverside, California	82.6	(±6.0) [§]	82.3	(±7.1) [§]	86.6	(±5.8) [§]	NA	NA	86.0	(±6.9) [§]
San Bernardino, California†	82.3	(±6.2) [§]	81.5	(±7.2) [§]	88.5	(±5.2) [§]	86.6	(±4.2) [§]	89.8	(±4.2) [§]
San Diego, California	84.8	(±2.9) [§]	86.3	(±2.9) [§]	86.8	(±3.2) [§]	90.3	(±3.7) [§]	89.5	(±5.5) [§]
Santa Clara, California†	86.2	(±2.8) [§]	87.4	(±2.7) [§]	89.7	(±3.1) [§]	91.1	(±3.5) [§]	NA	NA
Adams, Colorado	80.0	(±6.1)	82.8	(±6.7) [§]	85.2	(±6.3) [§]	NA	NA	NA	NA
Arapahoe, Colorado	84.1	(±5.5) [§]	84.4	(±6.0) [§]	90.3	(±4.7) [§]	NA	NA	91.6	(±5.3) [§]
Boulder, Colorado	84.9	(±5.5) [§]	82.7	(±6.6) [§]	81.7	(±6.6) [§]	86.7	(±6.0) [§]	87.0	(±6.4) [§]
Denver, Colorado	84.6	(±5.3) [§]	85.9	(±6.0) [§]	89.4	(±5.0) [§]	NA	NA	NA	NA
Douglas, Colorado	87.4	(±5.0) [§]	87.9	(±5.6) [§]	90.4	(±4.5) [§]	NA	NA	NA	NA
El Paso, Colorado	82.5	(±5.4) [§]	81.6	(±6.5) [§]	82.6	(±6.1) [§]	87.4	(±5.5) [§]	88.6	(±5.5) [§]
Jefferson, Colorado	86.1	(±5.2) [§]	86.9	(±5.3) [§]	88.9	(±5.0) [§]	91.8	(±4.0) [§]	89.1	(±5.2) [§]
Larimer, Colorado	85.4	(±5.2) [§]	84.6	(±6.3) [§]	NA	NA	86.1	(±6.6) [§]	NA	NA
Weld, Colorado	85.0	(±5.6) [§]	85.1	(±6.4) [§]	83.7	(±6.5) [§]	NA	NA	87.4	(±6.6) [§]
Fairfield, Connecticut	87.8	(±3.9) [§]	90.3	(±3.9) [§]	90.3	(±4.8) [§]	90.3	(±3.8) [§]	90.5	(±4.2) [§]
Hartford, Connecticut†	86.0	(±4.4) [§]	85.6	(±4.9) [§]	93.0	(±3.4) [§]	94.1	(±2.7) [§]	95.3	(±2.1) [§]
New Haven, Connecticut	87.1	(±4.3) [§]	84.0	(±5.4) [§]	89.0	(±5.1) [§]	91.8	(±3.6) [§]	92.7	(±4.0) [§]
New London, Connecticut	85.1	(±5.3) [§]	NA	NA	91.0	(±4.6) [§]	93.8	(±3.6) [§]	91.3	(±5.0) [§]
Kent, Delaware†	85.3	(±4.7) [§]	86.6	(±4.8) [§]	90.1	(±4.4) [§]	91.3	(±4.2) [§]	91.7	(±4.3) [§]
New Castle, Delaware†	84.5	(±3.4) [§]	84.6	(±3.7) [§]	89.9	(±3.3) [§]	91.5	(±2.9) [§]	91.5	(±3.4) [§]
Sussex, Delaware	87.2	(±4.3) [§]	90.4	(±4.4) [§]	90.4	(±3.8) [§]	93.2	(±3.1) [§]	88.5	(±4.5) [§]
District of Columbia†	81.4	(±3.6) [§]	84.4	(±3.4) [§]	89.9	(±2.9) [§]	91.3	(±2.3) [§]	89.5	(±2.8) [§]
Broward, Florida	85.1	(±5.2) [§]	86.7	(±5.5) [§]	86.2	(±5.7) [§]	84.2	(±6.5) [§]	89.1	(±5.5) [§]
Duval, Florida	85.1	(±3.1) [§]	85.5	(±3.5) [§]	87.6	(±3.2) [§]	88.6	(±2.8) [§]	NA	NA
Hillsborough, Florida	82.7	(±5.6) [§]	87.8	(±5.5) [§]	88.1	(±5.2) [§]	85.5	(±6.2) [§]	NA	NA
Dade, Florida†	86.7	(±3.2) [§]	85.2	(±3.1) [§]	89.3	(±2.9) [§]	92.1	(±3.1) [§]	91.6	(±2.7) [§]
Orange, Florida†	84.0	(±5.4) [§]	NA	NA	88.9	(±5.5) [§]	NA	NA	92.3	(±3.3) [§]
Palm Beach, Florida	85.6	(±5.1) [§]	85.7	(±5.9) [§]	91.0	(±4.3) [§]	84.8	(±7.0) [§]	90.2	(±5.8) [§]
Cobb, Georgia	86.4	(±5.0) [§]	87.2	(±5.5) [§]	91.6	(±4.2) [§]	91.0	(±4.2) [§]	90.4	(±4.6) [§]
DeKalb, Georgia	86.5	(±3.9) [§]	85.8	(±4.0) [§]	88.1	(±3.4) [§]	83.2	(±5.7) [§]	90.8	(±4.9) [§]
Fulton, Georgia	85.7	(±3.7) [§]	84.7	(±4.0) [§]	89.0	(±3.3) [§]	91.4	(±3.2) [§]	90.2	(±4.9) [§]
Gwinnett, Georgia	86.5	(±5.1) [§]	86.2	(±5.6) [§]	89.0	(±4.9) [§]	92.0	(±4.0) [§]	89.6	(±5.2) [§]
Hawaii, Hawaii	84.1	(±5.6) [§]	87.5	(±5.4) [§]	89.1	(±4.6) [§]	83.3	(±6.7) [§]	90.8	(±4.8) [§]
Honolulu, Hawaii†	84.9	(±3.4) [§]	83.8	(±4.0) [§]	86.4	(±3.2) [§]	89.1	(±3.3) [§]	90.4	(±3.1) [§]
Maui, Hawaii	81.6	(±6.0) [§]	84.8	(±5.8) [§]	87.1	(±5.3) [§]	80.6	(±8.6) [§]	89.5	(±6.4) [§]
Ada, Idaho	84.2	(±4.5) [§]	79.8	(±6.1)	89.0	(±4.4) [§]	91.2	(±3.6) [§]	87.2	(±5.1) [§]
Bannock, Idaho	84.3	(±5.4) [§]	86.0	(±5.9) [§]	NA	NA	NA	NA	NA	NA
Bonneville, Idaho	83.9	(±5.2) [§]	85.5	(±5.9) [§]	91.4	(±4.2) [§]	88.8	(±5.2) [§]	88.6	(±6.2) [§]
Canyon, Idaho	81.0	(±5.7) [§]	81.8	(±6.4) [§]	88.9	(±4.9) [§]	82.0	(±6.3) [§]	84.8	(±6.8) [§]
Kootenai, Idaho	84.8	(±5.3) [§]	79.5	(±7.6)	NA	NA	NA	NA	NA	NA
Twin Falls, Idaho	NA	NA	86.6	(±6.0) [§]	NA	NA	NA	NA	NA	NA
Cook, Illinois†	81.2	(±3.3) [§]	83.3	(±3.3) [§]	87.1	(±3.6) [§]	86.6	(±3.8) [§]	86.6	(±3.2) [§]
DuPage, Illinois	85.4	(±5.1) [§]	86.2	(±5.5) [§]	92.0	(±4.1) [§]	NA	NA	89.3	(±5.1) [§]
Lake, Illinois	84.5	(±5.5) [§]	82.6	(±6.6) [§]	85.9	(±6.3) [§]	NA	NA	91.2	(±5.1) [§]
Will, Illinois	86.4	(±5.3) [§]	82.8	(±6.5) [§]	91.7	(±4.3) [§]	92.2	(±4.1) [§]	91.2	(±5.0) [§]
Allen, Indiana	85.9	(±5.2) [§]	85.1	(±6.1) [§]	90.6	(±4.5) [§]	NA	NA	89.1	(±5.8) [§]

See table footnotes on page 65.

TABLE 17. (Continued) Estimated vaccination coverage for the 3:3:1 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1999–2008

County/Area	1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Hamilton, Indiana	92.5	(±2.6) [§]	85.1	(±6.5) [§]	91.8	(±4.3) [§]	NA	NA	92.3	(±4.1) [§]
Lake, Indiana	83.0	(±5.6) [§]	84.7	(±6.0) [§]	91.3	(±4.3) [§]	NA	NA	86.4	(±6.4) [§]
Marion, Indiana [†]	82.7	(±3.4) [§]	83.4	(±3.6) [§]	88.9	(±3.0) [§]	90.3	(±4.1) [§]	90.6	(±3.7) [§]
Linn, Iowa	NA	NA	84.1	(±6.3) [§]	90.8	(±5.1) [§]	NA	NA	88.9	(±5.9) [§]
Polk, Iowa	87.2	(±4.8) [§]	84.1	(±5.7) [§]	91.9	(±3.9) [§]	88.8	(±4.5) [§]	91.6	(±4.2) [§]
Scott, Iowa	85.6	(±5.3) [§]	86.5	(±6.0) [§]	90.1	(±4.8) [§]	NA	NA	NA	NA
Johnson, Kansas	88.2	(±3.9) [§]	85.3	(±5.6) [§]	88.6	(±4.6) [§]	90.1	(±3.2) [§]	92.9	(±3.6) [§]
Sedgwick, Kansas [†]	82.3	(±5.3) [§]	84.6	(±6.0) [§]	89.1	(±4.8) [§]	88.1	(±4.8) [§]	89.8	(±4.8) [§]
Shawnee, Kansas	85.0	(±5.5) [§]	NA	NA	NA	NA	83.5	(±6.7) [§]	90.8	(±5.5) [§]
Fayette, Kentucky	87.0	(±5.1) [§]	NA	NA	90.1	(±4.6) [§]	NA	NA	NA	NA
Jefferson, Kentucky	87.6	(±4.4) [§]	85.7	(±5.5) [§]	89.2	(±4.9) [§]	91.0	(±4.1) [§]	92.9	(±3.7) [§]
Caddo, Louisiana [†]	81.4	(±6.1) [§]	NA	NA	NA	NA	90.7	(±5.2) [§]	93.0	(±4.1) [§]
East Baton Rouge, Louisiana [†]	84.4	(±5.6) [§]	84.1	(±6.2) [§]	87.7	(±5.4) [§]	93.6	(±3.1) [§]	92.7	(±4.1) [§]
Jefferson, Louisiana [†]	84.2	(±5.4) [§]	85.4	(±6.0) [§]	87.8	(±5.2) [§]	88.7	(±5.0) [§]	91.9	(±4.1) [§]
Lafayette, Louisiana	NA	NA	NA	NA	89.1	(±4.9) [§]	NA	NA	91.5	(±4.4) [§]
Orleans, Louisiana [†]	78.8	(±3.9)	75.0	(±4.2)	85.4	(±3.3) [§]	87.1	(±4.5) [§]	90.3	(±5.3) [§]
St. Tammany, Louisiana	NA	NA	85.0	(±6.1) [§]	90.8	(±4.7) [§]	89.6	(±4.5) [§]	NA	NA
Androscoggin, Maine	87.0	(±4.9) [§]	88.9	(±5.2) [§]	91.4	(±4.6) [§]	92.3	(±3.9) [§]	90.4	(±5.0) [§]
Aroostook, Maine	87.7	(±4.8) [§]	NA	NA	90.0	(±4.8) [§]	NA	NA	NA	NA
Cumberland, Maine	85.9	(±4.2) [§]	85.5	(±5.0) [§]	87.0	(±4.6) [§]	90.2	(±3.8) [§]	88.7	(±4.3) [§]
Kennebec, Maine [†]	88.1	(±4.8) [§]	87.2	(±5.6) [§]	93.8	(±2.8) [§]	NA	NA	94.4	(±2.7) [§]
Penobscot, Maine	85.7	(±4.9) [§]	88.0	(±5.5) [§]	91.1	(±4.2) [§]	91.9	(±4.2) [§]	89.6	(±5.1) [§]
York, Maine	89.2	(±4.1) [§]	85.9	(±5.2) [§]	91.1	(±4.1) [§]	88.2	(±5.0) [§]	90.8	(±4.9) [§]
Anne Arundel, Maryland [†]	84.8	(±5.3) [§]	87.7	(±5.1) [§]	91.4	(±4.3) [§]	92.3	(±3.9) [§]	92.6	(±4.2) [§]
Baltimore, Maryland [†]	85.7	(±4.7) [§]	88.7	(±4.9) [§]	87.9	(±5.0) [§]	92.5	(±3.6) [§]	94.6	(±3.0) [§]
Frederick, Maryland	86.8	(±4.9) [§]	87.7	(±5.6) [§]	92.3	(±3.9) [§]	NA	NA	NA	NA
Harford, Maryland	NA	NA	NA	NA	90.8	(±5.1) [§]	NA	NA	NA	NA
Howard, Maryland [†]	86.1	(±5.3) [§]	87.5	(±6.2) [§]	91.2	(±4.5) [§]	NA	NA	95.3	(±3.0) [§]
Montgomery, Maryland [†]	85.3	(±4.6) [§]	87.3	(±4.5) [§]	89.2	(±4.4) [§]	91.9	(±4.0) [§]	95.0	(±2.7) [§]
Prince George's, Maryland [†]	83.3	(±5.2) [§]	81.4	(±6.5) [§]	88.8	(±5.0) [§]	87.1	(±5.6) [§]	91.3	(±4.8) [§]
City of Baltimore, Maryland [†]	82.1	(±3.5) [§]	84.7	(±3.3) [§]	88.7	(±3.1) [§]	88.8	(±3.3) [§]	90.2	(±4.1) [§]
Bristol, Massachusetts	87.6	(±4.8) [§]	88.1	(±5.6) [§]	91.2	(±4.2) [§]	92.4	(±3.8) [§]	NA	NA
Essex, Massachusetts	86.5	(±4.8) [§]	88.4	(±5.1) [§]	90.2	(±4.9) [§]	89.8	(±4.8) [§]	89.5	(±5.9) [§]
Hampden, Massachusetts	86.2	(±5.0) [§]	85.6	(±6.4) [§]	91.3	(±4.5) [§]	NA	NA	NA	NA
Middlesex, Massachusetts [†]	86.5	(±4.3) [§]	85.7	(±4.8) [§]	91.7	(±3.6) [§]	95.4	(±2.2) [§]	93.4	(±3.5) [§]
Norfolk, Massachusetts [†]	83.9	(±5.4) [§]	87.7	(±5.2) [§]	92.1	(±4.1) [§]	93.8	(±3.1) [§]	93.8	(±3.7) [§]
Plymouth, Massachusetts	87.7	(±4.9) [§]	87.2	(±5.8) [§]	95.2	(±1.8) [§]	87.2	(±5.6) [§]	92.4	(±4.6) [§]
Suffolk, Massachusetts [†]	88.0	(±2.7) [§]	87.7	(±3.1) [§]	90.7	(±3.1) [§]	92.2	(±3.8) [§]	96.5	(±1.0) [§]
Worcester, Massachusetts	86.5	(±4.8) [§]	88.0	(±4.7) [§]	90.6	(±4.2) [§]	93.5	(±3.2) [§]	91.2	(±4.5) [§]
Kent, Michigan	85.9	(±5.4) [§]	87.2	(±5.7) [§]	90.6	(±4.8) [§]	NA	NA	89.6	(±5.1) [§]
Macomb, Michigan	86.7	(±4.9) [§]	85.5	(±5.9) [§]	90.8	(±4.5) [§]	89.0	(±4.9) [§]	NA	NA
Oakland, Michigan	85.4	(±5.0) [§]	86.2	(±5.6) [§]	88.2	(±5.0) [§]	90.9	(±4.1) [§]	89.3	(±5.1) [§]
Wayne, Michigan [†]	78.9	(±4.0)	79.5	(±4.9)	87.1	(±4.3) [§]	86.7	(±4.3) [§]	88.3	(±4.9) [§]
Anoka, Minnesota	87.1	(±4.9) [§]	88.5	(±5.3) [§]	NA	NA	NA	NA	90.8	(±4.8) [§]
Dakota, Minnesota	85.6	(±5.3) [§]	86.3	(±6.1) [§]	90.6	(±4.6) [§]	90.5	(±4.7) [§]	92.3	(±4.5) [§]
Hennepin, Minnesota	87.5	(±4.2) [§]	87.6	(±5.1) [§]	90.7	(±4.3) [§]	93.8	(±3.1) [§]	90.4	(±4.1) [§]
Ramsey, Minnesota [†]	85.5	(±5.1) [§]	83.3	(±6.5) [§]	89.9	(±5.0) [§]	93.4	(±3.3) [§]	93.4	(±3.7) [§]
Harrison, Mississippi	NA	NA	NA	NA	NA	NA	91.0	(±4.2) [§]	NA	NA
Hinds, Mississippi	83.4	(±5.7) [§]	85.0	(±6.3) [§]	NA	NA	87.3	(±5.9) [§]	86.6	(±6.2) [§]
Greene, Missouri	NA	NA	84.6	(±6.5) [§]	NA	NA	NA	NA	NA	NA
Jackson, Missouri	85.2	(±5.0) [§]	86.9	(±5.6) [§]	90.1	(±4.4) [§]	90.8	(±4.4) [§]	89.6	(±5.0) [§]
Jefferson, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	90.1	(±5.5) [§]
St. Charles, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	92.2	(±4.4) [§]
St. Louis, Missouri [†]	84.7	(±4.9) [§]	87.9	(±5.0) [§]	91.6	(±4.0) [§]	92.2	(±3.1) [§]	92.9	(±4.0) [§]
City of St. Louis, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	89.9	(±5.9) [§]
Cascade, Montana	87.3	(±4.7) [§]	86.6	(±5.7) [§]	91.5	(±4.4) [§]	91.4	(±4.2) [§]	90.1	(±5.2) [§]
Flathead, Montana	86.2	(±4.9) [§]	75.7	(±7.2)	84.2	(±6.2) [§]	75.6	(±9.5)	87.1	(±6.2) [§]
Gallatin, Montana	85.1	(±5.2) [§]	83.3	(±6.5) [§]	88.3	(±5.3) [§]	90.6	(±4.5) [§]	86.8	(±6.1) [§]
Lewis and Clark, Montana	85.9	(±5.2) [§]	87.8	(±5.5) [§]	NA	NA	NA	NA	89.9	(±5.3) [§]
Missoula, Montana	86.9	(±5.1) [§]	86.5	(±5.4) [§]	83.7	(±6.1) [§]	87.0	(±5.1) [§]	84.3	(±6.6) [§]
Yellowstone, Montana	85.6	(±4.8) [§]	85.3	(±5.3) [§]	86.8	(±4.9) [§]	91.1	(±3.8) [§]	86.1	(±6.2) [§]
Douglas, Nebraska [†]	87.6	(±3.9) [§]	84.9	(±4.8) [§]	90.3	(±3.6) [§]	93.0	(±3.0) [§]	92.5	(±2.9) [§]
Lancaster, Nebraska	87.3	(±4.3) [§]	85.5	(±5.5) [§]	89.8	(±4.4) [§]	93.9	(±3.2) [§]	91.4	(±4.5) [§]
Sarpy, Nebraska	86.2	(±5.1) [§]	86.0	(±5.9) [§]	91.3	(±4.6) [§]	NA	NA	NA	NA
Clark, Nevada	81.0	(±3.5) [§]	81.3	(±4.1) [§]	81.6	(±3.7) [§]	78.9	(±4.3)	82.2	(±4.4) [§]
Washoe, Nevada	85.9	(±4.3) [§]	86.7	(±5.6) [§]	91.1	(±4.3) [§]	88.8	(±4.6) [§]	90.3	(±4.8) [§]
Grafton, New Hampshire [†]	87.1	(±4.9) [§]	86.7	(±5.8) [§]	91.2	(±4.5) [§]	NA	NA	95.8	(±2.4) [§]

See table footnotes on page 65.

TABLE 17. (Continued) Estimated vaccination coverage for the 3:3:1 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1999–2008

County/Area	1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Hillsborough, New Hampshire	88.5	(±3.7) [§]	87.9	(±4.3) [§]	91.9	(±3.3) [§]	91.0	(±3.3) [§]	93.2	(±3.2) [§]
Merrimack, New Hampshire	87.6	(±4.8) [§]	88.6	(±5.0) [§]	88.8	(±4.6) [§]	90.3	(±4.6) [§]	92.7	(±4.4) [§]
Rockingham, New Hampshire†	87.4	(±3.9) [§]	89.7	(±4.1) [§]	91.5	(±3.9) [§]	89.9	(±4.1) [§]	92.9	(±3.7) [§]
Strafford, New Hampshire	84.9	(±5.3) [§]	86.7	(±5.6) [§]	91.4	(±4.4) [§]	93.1	(±3.4) [§]	91.9	(±4.6) [§]
Bergen, New Jersey†	84.9	(±5.0) [§]	87.2	(±5.8) [§]	89.0	(±5.2) [§]	89.8	(±4.9) [§]	92.3	(±4.6) [§]
Burlington, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	91.8	(±4.8) [§]
Camden, New Jersey†	83.8	(±5.7) [§]	86.5	(±5.8) [§]	NA	NA	89.1	(±5.3) [§]	92.4	(±4.1) [§]
Essex, New Jersey	83.4	(±4.6) [§]	78.0	(±6.6)	85.7	(±5.5) [§]	87.4	(±5.0) [§]	85.4	(±5.8) [§]
Hudson, New Jersey	79.1	(±6.9)	81.4	(±7.5) [§]	85.6	(±6.1) [§]	NA	NA	86.2	(±6.7) [§]
Middlesex, New Jersey	84.1	(±5.8) [§]	85.1	(±5.8) [§]	89.2	(±5.1) [§]	90.4	(±4.6) [§]	89.7	(±5.1) [§]
Monmouth, New Jersey	86.6	(±4.8) [§]	80.4	(±7.2) [§]	NA	NA	90.3	(±4.6) [§]	90.6	(±5.0) [§]
Ocean, New Jersey	NA	NA	NA	NA	86.7	(±5.7) [§]	83.0	(±6.6) [§]	87.1	(±6.3) [§]
Passaic, New Jersey	81.7	(±6.1) [§]	84.6	(±6.6) [§]	87.3	(±5.6) [§]	NA	NA	NA	NA
Union, New Jersey	83.4	(±5.7) [§]	88.2	(±5.6) [§]	87.3	(±5.5) [§]	NA	NA	88.4	(±6.1) [§]
Bernalillo, New Mexico†	79.7	(±5.5)	79.7	(±5.4)	88.8	(±4.3) [§]	82.3	(±5.6) [§]	90.3	(±4.2) [§]
Dona Ana, New Mexico	81.3	(±6.1) [§]	80.2	(±7.9) [§]	88.3	(±5.4) [§]	NA	NA	87.4	(±6.5) [§]
Sandoval, New Mexico	NA	NA	NA	NA	87.3	(±5.9) [§]	NA	NA	83.2	(±8.2) [§]
San Juan, New Mexico	83.2	(±5.8) [§]	85.1	(±5.9) [§]	89.1	(±5.1) [§]	87.0	(±6.0) [§]	84.7	(±7.3) [§]
Santa Fe, New Mexico	80.5	(±6.4) [§]	NA	NA	85.5	(±6.2) [§]	NA	NA	NA	NA
Bronx, New York†	77.4	(±6.7)	82.4	(±6.3) [§]	86.7	(±5.3) [§]	87.2	(±5.3) [§]	89.4	(±4.9) [§]
Erie, New York	87.5	(±4.8) [§]	84.0	(±6.4) [§]	89.0	(±5.6) [§]	90.6	(±4.6) [§]	NA	NA
Kings, New York	83.4	(±4.5) [§]	83.1	(±5.1) [§]	85.1	(±4.7) [§]	84.7	(±4.6) [§]	85.9	(±4.2) [§]
Monroe, New York†	87.3	(±5.0) [§]	86.9	(±6.1) [§]	91.4	(±4.4) [§]	95.3	(±2.5) [§]	94.6	(±2.9) [§]
Nassau, New York†	83.7	(±5.0) [§]	84.8	(±6.1) [§]	86.7	(±5.7) [§]	92.9	(±3.9) [§]	93.0	(±3.6) [§]
New York, New York	85.3	(±5.0) [§]	83.9	(±6.5) [§]	89.1	(±5.0) [§]	92.2	(±3.6) [§]	91.7	(±4.0) [§]
Queens, New York†	80.4	(±5.0) [§]	83.7	(±5.4) [§]	91.8	(±3.5) [§]	91.2	(±4.1) [§]	92.7	(±3.5) [§]
Suffolk, New York	85.8	(±4.6) [§]	86.6	(±5.4) [§]	90.4	(±4.8) [§]	88.6	(±4.8) [§]	90.9	(±4.3) [§]
Westchester, New York†	85.5	(±5.4) [§]	87.0	(±5.7) [§]	86.4	(±6.2) [§]	93.0	(±3.9) [§]	NA	NA
Durham, North Carolina	NA	NA	NA	NA	88.0	(±5.8) [§]	NA	NA	NA	NA
Guilford, North Carolina	85.8	(±5.3) [§]	NA	NA	NA	NA	NA	NA	NA	NA
Mecklenburg, North Carolina†	84.3	(±5.7) [§]	85.5	(±6.1) [§]	91.2	(±4.4) [§]	92.5	(±3.7) [§]	92.6	(±4.2) [§]
Wake, North Carolina†	84.4	(±5.4) [§]	88.5	(±5.3) [§]	92.3	(±3.9) [§]	95.2	(±1.9) [§]	94.2	(±3.1) [§]
Burleigh, North Dakota†	84.6	(±5.0) [§]	87.0	(±6.1) [§]	88.4	(±4.9) [§]	90.0	(±4.7) [§]	94.0	(±3.2) [§]
Cass, North Dakota†	85.3	(±4.5) [§]	87.7	(±4.9) [§]	92.1	(±3.4) [§]	93.8	(±2.9) [§]	93.8	(±3.3) [§]
Grand Forks, North Dakota†	86.4	(±4.6) [§]	85.7	(±5.6) [§]	89.9	(±4.6) [§]	94.7	(±3.0) [§]	92.8	(±4.2) [§]
Ward, North Dakota	85.7	(±4.7) [§]	87.6	(±5.3) [§]	88.9	(±4.9) [§]	89.5	(±4.8) [§]	90.0	(±4.9) [§]
Cuyahoga, Ohio†	81.4	(±3.3) [§]	83.9	(±3.4) [§]	90.2	(±2.8) [§]	92.0	(±2.4) [§]	92.6	(±3.7) [§]
Franklin, Ohio†	85.5	(±2.8) [§]	87.0	(±2.8) [§]	90.8	(±2.6) [§]	91.3	(±3.7) [§]	92.1	(±3.9) [§]
Hamilton, Ohio†	83.3	(±5.6) [§]	88.4	(±5.1) [§]	90.1	(±4.8) [§]	90.5	(±4.2) [§]	93.7	(±3.7) [§]
Lucas, Ohio	NA	NA	84.8	(±6.3) [§]	NA	NA	NA	NA	NA	NA
Montgomery, Ohio	NA	NA	86.2	(±5.8) [§]	NA	NA	NA	NA	NA	NA
Cleveland, Oklahoma	NA	NA	87.6	(±5.6) [§]	89.3	(±5.0) [§]	92.4	(±4.0) [§]	89.0	(±5.7) [§]
Oklahoma, Oklahoma	83.2	(±4.7) [§]	82.8	(±5.6) [§]	88.9	(±4.4) [§]	87.8	(±4.9) [§]	88.6	(±5.2) [§]
Tulsa, Oklahoma	85.2	(±4.7) [§]	88.2	(±5.2) [§]	90.4	(±4.1) [§]	88.0	(±4.7) [§]	88.1	(±5.0) [§]
Clackamas, Oregon	86.1	(±4.8) [§]	85.2	(±6.0) [§]	89.0	(±5.4) [§]	NA	NA	84.5	(±6.9) [§]
Lane, Oregon	87.9	(±4.8) [§]	80.7	(±7.0) [§]	88.7	(±5.4) [§]	85.0	(±6.4) [§]	88.7	(±6.1) [§]
Marion, Oregon	84.4	(±5.1) [§]	85.6	(±6.0) [§]	87.3	(±5.6) [§]	88.5	(±5.1) [§]	85.7	(±7.2) [§]
Multnomah, Oregon	84.1	(±4.9) [§]	83.5	(±5.4) [§]	86.5	(±5.3) [§]	85.4	(±5.5) [§]	87.6	(±5.1) [§]
Washington, Oregon†	83.2	(±5.1) [§]	86.4	(±5.3) [§]	87.7	(±4.5) [§]	85.5	(±5.9) [§]	90.9	(±5.0) [§]
Allegheny, Pennsylvania	87.0	(±4.9) [§]	88.2	(±5.4) [§]	90.9	(±4.4) [§]	91.4	(±4.0) [§]	91.7	(±4.2) [§]
Delaware, Pennsylvania	NA	NA	NA	NA	91.0	(±4.6) [§]	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	NA	NA	NA	NA	88.3	(±6.0) [§]
Montgomery, Pennsylvania†	84.2	(±5.5) [§]	NA	NA	92.3	(±3.9) [§]	NA	NA	94.0	(±3.4) [§]
Philadelphia, Pennsylvania†	84.6	(±3.0) [§]	84.8	(±3.1) [§]	88.4	(±2.9) [§]	91.2	(±2.5) [§]	91.4	(±2.7) [§]
Kent, Rhode Island	88.5	(±4.3) [§]	88.8	(±4.8) [§]	90.0	(±4.5) [§]	91.8	(±3.6) [§]	92.2	(±4.3) [§]
Newport, Rhode Island†	84.4	(±5.4) [§]	87.0	(±5.6) [§]	NA	NA	91.7	(±3.9) [§]	NA	NA
Providence, Rhode Island	88.2	(±3.2) [§]	88.4	(±3.3) [§]	90.9	(±3.2) [§]	93.7	(±2.4) [§]	92.3	(±3.0) [§]
Washington, Rhode Island†	87.8	(±4.3) [§]	89.0	(±5.0) [§]	91.0	(±4.2) [§]	96.1	(±1.5) [§]	96.8	(±0.7) [§]
Charleston, South Carolina	86.0	(±5.3) [§]	85.7	(±6.6) [§]	87.2	(±5.9) [§]	91.4	(±4.8) [§]	88.5	(±5.7) [§]
Greenville, South Carolina	85.4	(±5.0) [§]	88.5	(±5.4) [§]	91.8	(±4.2) [§]	90.2	(±4.7) [§]	88.5	(±5.4) [§]
Horry, South Carolina	NA	NA	87.6	(±5.7) [§]	NA	NA	NA	NA	90.0	(±5.6) [§]
Richland, South Carolina	84.7	(±5.7) [§]	88.4	(±5.6) [§]	NA	NA	95.1	(±2.8) [§]	91.4	(±4.6) [§]
Spartanburg, South Carolina	86.7	(±5.1) [§]	NA	NA	NA	NA	91.1	(±4.6) [§]	90.5	(±5.1) [§]
York, South Carolina	NA	NA	NA	NA	NA	NA	NA	NA	87.7	(±5.6) [§]
Minnehaha, South Dakota†	86.2	(±4.6) [§]	84.7	(±5.0) [§]	91.0	(±4.0) [§]	91.6	(±3.7) [§]	93.7	(±3.3) [§]
Pennington, South Dakota	87.2	(±4.8) [§]	87.3	(±5.9) [§]	91.9	(±4.2) [§]	90.8	(±4.1) [§]	89.6	(±5.7) [§]
Davidson, Tennessee†	78.5	(±3.6)	86.7	(±3.1) [§]	91.0	(±2.5) [§]	91.3	(±3.8) [§]	93.2	(±3.6) [§]

See table footnotes on page 65.

TABLE 17. (Continued) Estimated vaccination coverage for the 3:3:1 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1999–2008

County/Area	1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Hamilton, Tennessee	84.4	(±5.5) [§]	87.6	(±6.0) [§]	NA	NA	NA	NA	NA	NA
Knox, Tennessee	86.2	(±5.0) [§]	86.2	(±5.9) [§]	90.4	(±4.4) [§]	92.5	(±4.1) [§]	92.9	(±4.5) [§]
Shelby, Tennessee	85.2	(±3.0) [§]	82.6	(±3.6) [§]	87.5	(±2.9) [§]	85.2	(±3.6) [§]	90.1	(±5.1) [§]
Bexar, Texas [†]	80.2	(±3.6) [§]	84.2	(±3.2) [§]	86.1	(±3.5) [§]	87.5	(±3.3) [§]	88.7	(±3.0) [§]
Collin, Texas	NA	NA	94.6	(±1.8) [§]	NA	NA	91.6	(±4.2) [§]	NA	NA
Dallas, Texas [†]	79.7	(±3.5)	81.2	(±3.2) [§]	85.6	(±3.0) [§]	86.1	(±3.6) [§]	86.6	(±3.0) [§]
El Paso, Texas [†]	80.9	(±3.6) [§]	82.2	(±3.4) [§]	85.4	(±3.3) [§]	86.3	(±2.9) [§]	88.2	(±2.9) [§]
Harris, Texas [†]	76.6	(±3.7)	78.5	(±4.3)	79.7	(±4.1)	84.6	(±4.0) [§]	86.6	(±5.2) [§]
Hidalgo, Texas	NA	NA	NA	NA	NA	NA	89.5	(±6.3) [§]	NA	NA
Tarrant, Texas	82.0	(±6.0) [§]	82.9	(±6.9) [§]	89.8	(±4.6) [§]	90.4	(±4.4) [§]	88.4	(±5.7) [§]
Travis, Texas	84.4	(±5.7) [§]	NA	NA	88.8	(±5.8) [§]	89.3	(±5.1) [§]	NA	NA
Davis, Utah	85.3	(±5.0) [§]	86.9	(±5.4) [§]	88.0	(±5.1) [§]	90.5	(±4.5) [§]	91.3	(±4.5) [§]
Salt Lake, Utah	86.1	(±3.8) [§]	85.8	(±4.3) [§]	86.6	(±4.4) [§]	87.4	(±5.0) [§]	88.9	(±4.7) [§]
Utah, Utah	83.7	(±4.7) [§]	86.7	(±4.9) [§]	86.3	(±4.6) [§]	88.3	(±5.1) [§]	84.0	(±6.1) [§]
Weber, Utah	84.4	(±5.3) [§]	86.1	(±5.8) [§]	90.5	(±4.3) [§]	NA	NA	NA	NA
Addison, Vermont	NA	NA	86.9	(±5.6) [§]	91.3	(±4.3) [§]	NA	NA	NA	NA
Bennington, Vermont	87.1	(±5.0) [§]	NA	NA	NA	NA	NA	NA	NA	NA
Chittenden, Vermont	88.3	(±4.2) [§]	89.0	(±4.1) [§]	92.8	(±3.4) [§]	94.8	(±2.8) [§]	91.4	(±3.7) [§]
Franklin, Vermont [†]	88.3	(±4.6) [§]	90.8	(±4.2) [§]	92.0	(±4.2) [§]	NA	NA	94.9	(±2.4) [§]
Lamoille, Vermont	NA	NA	NA	NA	89.0	(±5.5) [§]	NA	NA	NA	NA
Rutland, Vermont	87.6	(±4.5) [§]	88.8	(±5.3) [§]	91.3	(±4.5) [§]	NA	NA	NA	NA
Washington, Vermont	87.0	(±5.1) [§]	89.3	(±5.1) [§]	91.6	(±4.0) [§]	91.9	(±3.9) [§]	91.2	(±4.5) [§]
Windham, Vermont	87.9	(±4.6) [§]	86.3	(±6.1) [§]	NA	NA	NA	NA	91.9	(±4.4) [§]
Windsor, Vermont	85.8	(±5.0) [§]	87.8	(±5.5) [§]	91.6	(±4.4) [§]	80.8	(±9.7) [§]	NA	NA
Fairfax, Virginia [†]	82.1	(±5.6) [§]	82.9	(±6.4) [§]	91.5	(±4.1) [§]	93.0	(±3.3) [§]	92.1	(±3.7) [§]
Loudoun, Virginia	NA	NA	NA	NA	NA	NA	NA	NA	91.0	(±4.9) [§]
Virginia Beach, Virginia	82.0	(±6.0) [§]	NA	NA	NA	NA	NA	NA	87.2	(±6.5) [§]
Clark, Washington	84.7	(±5.2) [§]	83.6	(±6.6) [§]	87.9	(±5.7) [§]	86.4	(±6.2) [§]	NA	NA
King, Washington	81.8	(±3.1) [§]	85.0	(±2.9) [§]	89.8	(±2.5) [§]	85.0	(±3.9) [§]	87.0	(±4.7) [§]
Kitsap, Washington	86.4	(±5.0) [§]	NA	NA	84.4	(±6.5) [§]	NA	NA	87.1	(±5.9) [§]
Pierce, Washington	83.3	(±4.8) [§]	83.9	(±6.1) [§]	89.5	(±4.8) [§]	89.4	(±4.9) [§]	82.5	(±7.3) [§]
Snohomish, Washington	85.5	(±4.6) [§]	84.9	(±5.4) [§]	88.7	(±5.0) [§]	85.9	(±5.8) [§]	87.2	(±6.6) [§]
Spokane, Washington	86.5	(±4.7) [§]	78.7	(±7.3)	86.3	(±5.9) [§]	NA	NA	85.1	(±6.3) [§]
Thurston, Washington	NA	NA	NA	NA	NA	NA	NA	NA	85.4	(±5.9) [§]
Whatcom, Washington	NA	NA	NA	NA	NA	NA	NA	NA	89.2	(±5.3) [§]
Yakima, Washington	NA	NA	83.7	(±7.4) [§]	NA	NA	NA	NA	NA	NA
Kanawha, West Virginia	86.8	(±4.7) [§]	NA	NA	90.5	(±4.5) [§]	85.4	(±6.1) [§]	91.9	(±4.4) [§]
Brown, Wisconsin	NA	NA	87.1	(±5.9) [§]	NA	NA	NA	NA	NA	NA
Dane, Wisconsin	85.8	(±5.1) [§]	88.2	(±5.4) [§]	90.2	(±4.6) [§]	95.5	(±1.9) [§]	92.1	(±4.6) [§]
Milwaukee, Wisconsin [†]	81.7	(±3.4) [§]	80.3	(±3.8) [§]	88.7	(±2.9) [§]	87.0	(±4.0) [§]	91.5	(±4.5) [§]
Waukesha, Wisconsin	86.7	(±4.8) [§]	87.6	(±5.7) [§]	91.4	(±4.2) [§]	92.2	(±3.9) [§]	NA	NA
Albany, Wyoming	86.9	(±5.0) [§]	NA	NA	88.6	(±5.5) [§]	NA	NA	NA	NA
Campbell, Wyoming [†]	85.0	(±5.2) [§]	89.1	(±4.9) [§]	88.6	(±4.8) [§]	89.8	(±4.9) [§]	93.4	(±3.7) [§]
Fremont, Wyoming [†]	83.8	(±5.5) [§]	83.9	(±6.8) [§]	91.5	(±4.5) [§]	NA	NA	NA	NA
Laramie, Wyoming	86.2	(±4.8) [§]	82.4	(±6.4) [§]	87.8	(±4.7) [§]	90.3	(±4.4) [§]	86.6	(±5.7) [§]
Natrona, Wyoming	86.0	(±4.6) [§]	85.3	(±5.8) [§]	90.6	(±4.0) [§]	88.9	(±5.0) [§]	89.9	(±4.9) [§]
Sweetwater, Wyoming	86.5	(±4.7) [§]	85.1	(±6.2) [§]	NA	NA	84.3	(±6.2) [§]	89.3	(±5.1) [§]
Uinta, Wyoming	87.5	(±4.8) [§]	NA	NA	NA	NA	NA	NA	NA	NA
United States[†]	84.5	(±0.6)[§]	84.9	(±0.6)[§]	89.0	(±0.5)[§]	89.3	(±0.5)[§]	90.0	(±0.6)[§]
Sample size, no.	45,623		45,052		43,308		38,607		35,447	
All selected counties	83.9	(±0.7)[§]	84.4	(±0.7)[§]	88.6	(±0.7)[§]	88.9	(±0.7)[§]	89.8	(±0.7)[§]
Sample size, no.	30,362		29,851		28,845		23,485		20,552	
Range, %	76.6–92.5		75–94.6		79.7–95.2		75.6–96.1		82.2–96.8	

Abbreviations: CI = confidence interval; DTaP = diphtheria and tetanus toxoids and acellular pertussis; DTP = diphtheria and tetanus toxoids and pertussis; MMR = measles, mumps, and rubella; NA = not available.

* ≥3 doses of DTaP/DTP vaccine, ≥3 doses of polio vaccine, and ≥1 dose of MMR vaccine.

[†] Estimates increased significantly between the first and last biennial periods (p<0.05).

[§] Estimate exceeds the *Healthy People 2010* objective of 80% vaccination coverage.

TABLE 18. Estimated vaccination coverage for the 4:3:1 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Jefferson, Alabama	81.7	(±3.4) [†]	84.2	(±3.0) [†]	82.0	(±3.3) [†]	83.4	(±3.3) [†]	83.6	(±4.0) [†]	87.9	(±4.4) [†]	86.4	(±5.7) [†]
Madison, Alabama	NA	NA	80.6	(±7.0) [†]	79.2	(±6.4)	NA	NA	85.1	(±6.2) [†]	86.1	(±5.5) [†]	86.9	(±6.2) [†]
Mobile, Alabama [§]	70.8	(±8.8)	81.7	(±6.3) [†]	75.8	(±7.0)	80.4	(±6.9) [†]	78.8	(±7.9)	82.1	(±6.2) [†]	82.6	(±7.1) [†]
Montgomery, Alabama	NA	NA	75.3	(±8.0)	77.5	(±7.5)	NA	NA	NA	NA	NA	NA	NA	NA
Shelby, Alabama	NA	NA	NA	NA	82.0	(±6.0) [†]	82.4	(±6.9) [†]	86.7	(±6.0) [†]	NA	NA	86.9	(±6.4) [†]
Anchorage, Alaska	NA	NA	NA	NA	78.9	(±4.4)	77.1	(±5.2)	80.3	(±5.1) [†]	80.8	(±5.5) [†]	80.6	(±5.9) [†]
Fairbanks North Star, Alaska	NA	NA	NA	NA	77.4	(±6.2)	73.4	(±7.3)	75.8	(±7.1)	79.3	(±6.4)	77.2	(±7.9)
Kenai Peninsula, Alaska	NA	NA	NA	NA	79.7	(±6.4)	NA	NA	NA	NA	NA	NA	NA	NA
Matanuska-Susitna, Alaska	NA	NA	NA	NA	79.3	(±6.3)	72.7	(±8.5)	84.3	(±6.2) [†]	75.5	(±7.4)	72.8	(±8.2)
Cochise, Arizona	NA	NA	75.0	(±7.9)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Coconino, Arizona [§]	NA	NA	66.7	(±8.4)	NA	NA	NA	NA	87.1	(±9.5) [†]	NA	NA	NA	NA
Maricopa, Arizona [§]	73.2	(±4.4)	76.1	(±3.7)	73.4	(±3.9)	74.1	(±3.9)	81.4	(±3.4) [†]	79.6	(±3.8)	80.3	(±5.0) [†]
Mohave, Arizona	NA	NA	NA	NA	72.3	(±7.6)	69.8	(±9.2)	NA	NA	NA	NA	NA	NA
Pima, Arizona	75.0	(±5.8)	78.6	(±5.0)	80.8	(±4.7) [†]	71.8	(±5.7)	78.5	(±5.5)	80.1	(±5.4) [†]	83.3	(±6.6) [†]
Pinal, Arizona	73.2	(±8.3)	71.9	(±8.5)	74.3	(±7.8)	70.5	(±8.3)	76.4	(±8.5)	82.8	(±7.8) [†]	NA	NA
Yavapai, Arizona	NA	NA	NA	NA	NA	NA	70.6	(±9.2)	80.9	(±7.1) [†]	NA	NA	NA	NA
Yuma, Arizona	73.1	(±8.6)	77.3	(±7.1)	70.0	(±7.8)	66.1	(±9.1)	82.8	(±7.0) [†]	82.2	(±6.8) [†]	NA	NA
Benton, Arkansas	NA	NA	78.5	(±6.9)	NA	NA	74.7	(±8.1)	86.7	(±5.5) [†]	75.8	(±7.8)	83.3	(±6.6) [†]
Pulaski, Arkansas [§]	75.0	(±7.5)	80.2	(±6.0) [†]	72.8	(±6.8)	76.1	(±7.2)	83.7	(±6.6) [†]	78.0	(±8.3)	85.0	(±6.2) [†]
Washington, Arkansas	78.1	(±7.5)	78.4	(±6.9)	NA	NA	72.6	(±8.8)	NA	NA	NA	NA	80.5	(±7.3) [†]
Alameda, California	75.1	(±7.8)	NA	NA	75.2	(±7.2)	83.1	(±6.7) [†]	84.2	(±6.4) [†]	83.6	(±4.7) [†]	82.8	(±6.5) [†]
Los Angeles, California [§]	74.9	(±4.6)	75.1	(±4.0)	76.2	(±3.8)	76.7	(±4.0)	83.3	(±3.3) [†]	82.5	(±3.5) [†]	82.6	(±3.3) [†]
Orange, California	78.3	(±6.8)	80.6	(±5.9) [†]	74.5	(±6.6)	79.7	(±6.8)	82.5	(±6.0) [†]	82.0	(±6.5) [†]	85.2	(±6.4) [†]
Riverside, California	NA	NA	NA	NA	75.2	(±7.3)	70.9	(±9.0)	76.4	(±7.5)	NA	NA	79.5	(±8.4)
San Bernardino, California	NA	NA	73.0	(±7.6)	73.9	(±7.5)	71.0	(±8.8)	81.4	(±6.9) [†]	76.0	(±5.7)	78.9	(±6.6)
San Diego, California	76.8	(±4.0)	78.8	(±3.3)	76.8	(±3.5)	79.4	(±3.4)	81.8	(±3.6) [†]	84.9	(±4.6) [†]	83.0	(±7.0) [†]
San Mateo, California	NA	NA	81.0	(±6.9) [†]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Santa Clara, California	81.1	(±3.7) [†]	79.4	(±3.5)	81.3	(±3.2) [†]	82.5	(±3.1) [†]	86.7	(±3.2) [†]	83.1	(±5.6) [†]	NA	NA
Adams, Colorado	75.7	(±7.8)	76.4	(±6.8)	72.8	(±7.1)	70.7	(±8.7)	79.1	(±7.3)	NA	NA	NA	NA
Arapahoe, Colorado	83.6	(±6.1) [†]	81.1	(±6.4) [†]	80.7	(±6.0) [†]	70.5	(±8.0)	85.0	(±5.7) [†]	NA	NA	85.3	(±6.8) [†]
Boulder, Colorado	NA	NA	82.5	(±6.0) [†]	82.1	(±6.1) [†]	72.6	(±8.6)	76.9	(±7.6)	82.9	(±6.1) [†]	81.0	(±7.8) [†]
Denver, Colorado	79.0	(±7.1)	78.6	(±6.1)	79.5	(±6.0)	78.2	(±7.0)	81.7	(±6.7) [†]	NA	NA	NA	NA
Douglas, Colorado	NA	NA	NA	NA	83.4	(±6.0) [†]	82.1	(±6.8) [†]	87.4	(±5.1) [†]	NA	NA	NA	NA
El Paso, Colorado	76.8	(±7.2)	76.9	(±7.2)	75.4	(±6.4)	76.8	(±7.3)	75.4	(±7.0)	80.9	(±6.4) [†]	78.0	(±7.9)
Jefferson, Colorado	80.9	(±6.6) [†]	79.9	(±5.9)	82.4	(±5.8) [†]	86.7	(±5.1) [†]	86.3	(±5.5) [†]	88.4	(±4.7) [†]	83.9	(±6.6) [†]
Larimer, Colorado	NA	NA	NA	NA	79.1	(±6.3)	75.8	(±8.1)	NA	NA	80.5	(±7.1) [†]	NA	NA
Weld, Colorado	NA	NA	NA	NA	78.6	(±7.0)	73.0	(±8.7)	78.7	(±7.4)	NA	NA	80.9	(±8.2) [†]
Fairfield, Connecticut	83.2	(±5.6) [†]	83.4	(±4.4) [†]	86.2	(±4.1) [†]	87.3	(±4.5) [†]	90.4	(±4.4) [†]	85.3	(±4.8) [†]	83.0	(±5.9) [†]
Hartford, Connecticut	85.2	(±5.3) [†]	86.3	(±4.6) [†]	82.8	(±4.9) [†]	81.7	(±5.5) [†]	89.8	(±4.1) [†]	88.8	(±4.0) [†]	88.2	(±5.0) [†]
New Haven, Connecticut	82.0	(±5.7) [†]	87.3	(±4.3) [†]	82.8	(±4.9) [†]	80.9	(±5.9) [†]	85.3	(±5.7) [†]	85.1	(±5.4) [†]	86.8	(±5.1) [†]
New London, Connecticut	85.0	(±6.2) [†]	80.6	(±6.5) [†]	80.2	(±6.1) [†]	NA	NA	87.1	(±5.7) [†]	88.9	(±4.7) [†]	82.9	(±6.9) [†]
Kent, Delaware	80.4	(±6.1) [†]	80.4	(±5.6) [†]	75.4	(±6.0)	80.9	(±5.8) [†]	83.1	(±5.9) [†]	84.5	(±5.9) [†]	82.6	(±6.2) [†]
New Castle, Delaware	79.4	(±4.6)	80.9	(±3.9) [†]	79.0	(±3.9)	83.1	(±3.8) [†]	86.5	(±3.6) [†]	86.7	(±3.8) [†]	83.5	(±4.6) [†]
Sussex, Delaware	75.1	(±6.8)	79.3	(±6.1)	81.6	(±5.4) [†]	84.1	(±5.8) [†]	83.4	(±5.8) [†]	88.2	(±4.6) [†]	81.9	(±5.7) [†]
District of Columbia	79.0	(±4.2)	74.2	(±4.1)	75.5	(±3.9)	75.9	(±4.2)	83.0	(±3.9) [†]	83.3	(±3.3) [†]	83.2	(±3.6) [†]
Broward, Florida	77.3	(±7.2)	79.2	(±6.1)	79.4	(±6.0)	81.0	(±6.7) [†]	81.7	(±6.5) [†]	79.6	(±7.0)	84.0	(±6.9) [†]
Duval, Florida [§]	74.1	(±4.4)	75.7	(±3.9)	78.5	(±3.7)	77.7	(±4.1)	81.3	(±3.7) [†]	81.8	(±3.4) [†]	NA	NA
Hillsborough, Florida	74.3	(±8.4)	81.4	(±6.4) [†]	76.1	(±6.6)	77.9	(±7.3)	82.0	(±6.5) [†]	80.8	(±6.7) [†]	NA	NA
Dade, Florida	NA	NA	NA	NA	81.3	(±3.7) [†]	76.7	(±4.0)	84.0	(±3.5) [†]	85.1	(±4.5) [†]	84.4	(±3.6) [†]
Orange, Florida [§]	NA	NA	NA	NA	75.9	(±6.5)	NA	NA	82.7	(±7.0) [†]	NA	NA	86.8	(±4.6) [†]
Palm Beach, Florida	NA	NA	80.5	(±6.3) [†]	83.0	(±5.7) [†]	82.6	(±6.6) [†]	88.7	(±4.9) [†]	79.6	(±7.2)	83.6	(±7.9) [†]
Pinellas, Florida	NA	NA	77.0	(±7.1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobb, Georgia	79.2	(±7.2)	78.9	(±6.7)	81.6	(±5.9) [†]	82.1	(±6.4) [†]	87.9	(±5.2) [†]	85.2	(±5.3) [†]	82.7	(±6.6) [†]
DeKalb, Georgia	79.0	(±6.3)	75.2	(±5.4)	81.7	(±4.5) [†]	78.4	(±4.7)	81.6	(±4.3) [†]	81.2	(±5.3) [†]	85.5	(±6.4) [†]
Fulton, Georgia	76.8	(±6.0)	77.9	(±4.7)	80.4	(±4.2) [†]	80.2	(±4.6) [†]	85.0	(±3.9) [†]	84.3	(±4.7) [†]	80.0	(±7.4)
Gwinnett, Georgia	79.0	(±7.4)	79.7	(±6.3)	82.1	(±6.0) [†]	81.8	(±6.5) [†]	83.1	(±6.1) [†]	88.2	(±4.9) [†]	77.9	(±8.6)
Hawaii, Hawaii	77.7	(±7.2)	75.3	(±7.7)	75.9	(±6.9)	78.7	(±7.3)	83.9	(±5.7) [†]	74.4	(±8.1)	84.4	(±6.4) [†]
Honolulu, Hawaii	83.5	(±4.1) [†]	77.9	(±4.2)	78.0	(±4.2)	76.9	(±4.5)	82.4	(±3.5) [†]	83.6	(±4.0) [†]	81.9	(±4.5) [†]
Maui, Hawaii	76.8	(±7.3)	78.1	(±7.4)	72.7	(±7.3)	78.3	(±7.1)	80.9	(±6.6) [†]	77.3	(±8.2)	85.0	(±6.9) [†]
Ada, Idaho	76.0	(±6.2)	79.8	(±5.2)	78.7	(±5.4)	74.2	(±6.6)	84.8	(±5.0) [†]	82.5	(±5.2) [†]	77.9	(±6.4)
Bannock, Idaho	NA	NA	78.9	(±7.1)	77.9	(±6.7)	77.1	(±8.1)	NA	NA	NA	NA	NA	NA
Bonneville, Idaho	73.3	(±7.4)	75.3	(±7.2)	79.2	(±6.1)	79.9	(±7.1)	85.8	(±5.6) [†]	80.5	(±6.9) [†]	81.4	(±8.1) [†]
Canyon, Idaho	NA	NA	74.0	(±6.8)	71.5	(±7.1)	74.4	(±7.7)	79.0	(±7.1)	72.0	(±7.5)	73.9	(±8.5)
Kootenai, Idaho	76.3	(±7.5)	80.9	(±6.5) [†]	80.2	(±6.3) [†]	72.5	(±8.7)	NA	NA	NA	NA	NA	NA
Twin Falls, Idaho	NA	NA	76.8	(±7.3)	NA	NA	77.9	(±7.8)	NA	NA	NA	NA	NA	NA
Cook, Illinois	75.4	(±4.2)	70.8	(±4.4)	73.0	(±4.0)	77.2	(±3.7)	82.1	(±4.0) [†]	80.5	(±4.4) [†]	77.7	(±4.0)
DuPage, Illinois	83.0	(±6.2) [†]	83.1	(±5.5) [†]	82.1	(±5.5) [†]	81.4	(±7.0) [†]	90.2	(±4.6) [†]	NA	NA	82.4	(±6.7) [†]
Lake, Illinois	81.0	(±6.8) [†]	83.0	(±6.0) [†]	82.6	(±5.9) [†]	78.8	(±7.2)	84.0	(±6.4) [†]	NA	NA	85.2	(±7.1) [†]

See table footnotes on page 69.

TABLE 18. (Continued) Estimated vaccination coverage for the 4:3:1 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Will, Illinois	NA	NA	NA	NA	81.1	(±6.4) [†]	77.7	(±7.4)	86.7	(±5.5) [†]	86.4	(±5.5) [†]	83.3	(±6.6) [†]
Allen, Indiana	NA	NA	76.4	(±7.0)	80.2	(±6.3) [†]	75.6	(±7.9)	86.3	(±5.6) [†]	NA	NA	81.0	(±7.9) [†]
Hamilton, Indiana	80.0	(±7.8)	84.3	(±6.0) [†]	88.5	(±4.1) [†]	81.8	(±7.2) [†]	88.6	(±5.0) [†]	NA	NA	87.3	(±5.7) [†]
Lake, Indiana	68.3	(±9.2)	71.6	(±8.0)	72.8	(±7.1)	77.3	(±6.6)	81.9	(±7.1) [†]	NA	NA	78.9	(±8.0)
Marion, Indiana	77.3	(±4.1)	79.3	(±3.5)	75.0	(±4.0)	75.7	(±4.1)	82.4	(±3.6) [†]	85.6	(±5.0) [†]	83.9	(±5.2) [†]
Linn, Iowa	NA	NA	82.5	(±6.5) [†]	NA	NA	79.3	(±7.2)	87.4	(±5.8) [†]	NA	NA	82.9	(±7.6) [†]
Polk, Iowa	80.6	(±6.8) [†]	79.4	(±5.8)	82.7	(±5.5) [†]	78.2	(±6.7)	88.9	(±4.6) [†]	84.4	(±5.2) [†]	83.3	(±6.1) [†]
Scott, Iowa	NA	NA	NA	NA	80.8	(±6.3) [†]	81.3	(±7.4) [†]	84.4	(±6.0) [†]	NA	NA	NA	NA
Johnson, Kansas	81.8	(±6.1) [†]	83.6	(±5.3) [†]	84.8	(±4.5) [†]	82.0	(±6.1) [†]	86.8	(±4.8) [†]	85.8	(±4.1) [†]	85.1	(±5.8) [†]
Sedgwick, Kansas	73.0	(±7.2)	79.9	(±5.9)	76.4	(±6.1)	79.1	(±6.9)	82.5	(±6.3) [†]	83.3	(±5.7) [†]	79.8	(±7.1)
Shawnee, Kansas	NA	NA	NA	NA	78.6	(±6.7)	NA	NA	NA	NA	78.1	(±7.5)	84.0	(±7.9) [†]
Fayette, Kentucky	NA	NA	85.2	(±5.7) [†]	82.8	(±5.9) [†]	NA	NA	84.9	(±5.9) [†]	NA	NA	NA	NA
Jefferson, Kentucky [§]	73.7	(±7.3)	80.7	(±5.5) [†]	84.0	(±5.1) [†]	77.3	(±6.7)	83.4	(±6.1) [†]	85.1	(±5.2) [†]	88.1	(±5.0) [†]
Caddo, Louisiana	NA	NA	76.4	(±7.3)	73.2	(±7.4)	NA	NA	NA	NA	83.3	(±7.2) [†]	84.2	(±6.7) [†]
East Baton Rouge, Louisiana [§]	77.4	(±7.8)	76.2	(±7.4)	77.6	(±6.8)	76.5	(±7.5)	80.1	(±7.4) [†]	85.9	(±5.3) [†]	87.6	(±5.9) [†]
Jefferson, Louisiana	78.4	(±7.2)	82.4	(±6.1) [†]	78.0	(±6.5)	76.0	(±7.7)	78.7	(±7.2)	82.5	(±6.1) [†]	83.9	(±6.2) [†]
Lafayette, Louisiana [§]	NA	NA	74.6	(±7.8)	NA	NA	NA	NA	81.4	(±6.8) [†]	NA	NA	86.0	(±6.1) [†]
Orleans, Louisiana	74.6	(±4.7)	75.2	(±4.1)	71.8	(±4.4)	66.9	(±4.8)	78.4	(±4.1)	68.5	(±9.1)	81.5	(±7.6) [†]
St. Tammany, Louisiana	NA	NA	NA	NA	NA	NA	78.0	(±7.5)	86.4	(±6.0) [†]	81.2	(±6.4) [†]	NA	NA
Androscoggin, Maine	82.5	(±6.8) [†]	81.6	(±7.0) [†]	81.7	(±6.2) [†]	82.8	(±6.5) [†]	86.9	(±5.8) [†]	85.4	(±6.0) [†]	84.8	(±6.6) [†]
Aroostook, Maine	NA	NA	83.5	(±6.2) [†]	82.4	(±6.2) [†]	NA	NA	85.2	(±6.0) [†]	NA	NA	NA	NA
Cumberland, Maine	84.1	(±5.0) [†]	86.0	(±4.3) [†]	82.9	(±4.7) [†]	80.6	(±5.8) [†]	84.8	(±4.9) [†]	84.9	(±4.9) [†]	84.2	(±5.2) [†]
Kennebec, Maine	83.7	(±6.5) [†]	85.9	(±5.1) [†]	83.2	(±5.9) [†]	79.7	(±7.1)	85.3	(±6.1) [†]	NA	NA	86.0	(±6.6) [†]
Penobscot, Maine	85.1	(±5.8) [†]	81.2	(±6.2) [†]	80.0	(±6.0)	79.9	(±7.2)	83.7	(±6.0) [†]	83.7	(±6.7) [†]	84.0	(±6.5) [†]
York, Maine	84.2	(±5.7) [†]	83.3	(±5.4) [†]	83.5	(±5.2) [†]	80.9	(±6.1) [†]	86.3	(±5.2) [†]	82.8	(±5.9) [†]	84.7	(±6.4) [†]
Anne Arundel, Maryland	82.5	(±6.3) [†]	80.2	(±6.4) [†]	80.5	(±6.1) [†]	81.1	(±6.7) [†]	87.8	(±5.1) [†]	87.5	(±5.1) [†]	85.5	(±6.5) [†]
Baltimore, Maryland	81.6	(±6.4) [†]	82.4	(±5.5) [†]	81.2	(±5.4) [†]	81.9	(±6.4) [†]	82.7	(±6.3) [†]	89.4	(±4.3) [†]	89.1	(±5.1) [†]
Frederick, Maryland	NA	NA	NA	NA	82.8	(±5.8) [†]	83.2	(±6.8) [†]	88.5	(±5.2) [†]	NA	NA	NA	NA
Harford, Maryland	NA	NA	NA	NA	NA	NA	NA	NA	86.1	(±5.9) [†]	NA	NA	NA	NA
Howard, Maryland	NA	NA	88.3	(±5.0) [†]	82.9	(±6.0) [†]	84.1	(±6.6) [†]	87.6	(±5.3) [†]	NA	NA	90.8	(±4.6) [†]
Montgomery, Maryland [§]	79.2	(±6.5)	87.7	(±4.3) [†]	81.4	(±5.1) [†]	83.8	(±5.0) [†]	86.4	(±4.7) [†]	89.9	(±3.8) [†]	90.7	(±4.1) [†]
Prince George's, Maryland	78.5	(±6.4)	73.3	(±6.9)	76.0	(±6.3)	73.6	(±7.6)	76.1	(±8.0)	79.5	(±6.5)	85.8	(±5.7) [†]
City of Baltimore, Maryland [§]	NA	NA	NA	NA	72.5	(±4.1)	74.9	(±4.0)	81.7	(±3.8) [†]	79.2	(±4.3)	85.6	(±5.0) [†]
Bristol, Massachusetts	82.2	(±6.8) [†]	80.6	(±6.3) [†]	83.4	(±5.7) [†]	82.2	(±6.8) [†]	87.4	(±5.1) [†]	87.1	(±5.2) [†]	NA	NA
Essex, Massachusetts	82.2	(±6.4) [†]	82.1	(±5.7) [†]	81.4	(±5.6) [†]	84.4	(±5.8) [†]	85.9	(±5.8) [†]	83.1	(±6.2) [†]	82.2	(±7.8) [†]
Hampden, Massachusetts	81.5	(±6.5) [†]	81.2	(±6.5) [†]	81.1	(±6.1) [†]	78.9	(±7.7)	86.8	(±5.9) [†]	NA	NA	NA	NA
Middlesex, Massachusetts	84.2	(±4.8) [†]	86.3	(±4.2) [†]	83.9	(±4.7) [†]	83.1	(±5.1) [†]	90.3	(±3.8) [†]	92.0	(±3.1) [†]	87.3	(±5.0) [†]
Norfolk, Massachusetts	83.7	(±5.8) [†]	88.0	(±4.8) [†]	82.3	(±5.7) [†]	84.9	(±5.8) [†]	90.7	(±4.4) [†]	90.0	(±4.2) [†]	87.8	(±5.6) [†]
Plymouth, Massachusetts	81.9	(±6.8) [†]	83.5	(±6.2) [†]	84.0	(±5.7) [†]	81.6	(±6.8) [†]	88.7	(±4.8) [†]	NA	NA	84.6	(±7.0) [†]
Suffolk, Massachusetts	82.4	(±4.8) [†]	87.7	(±3.0) [†]	83.5	(±3.2) [†]	84.2	(±3.4) [†]	87.2	(±3.5) [†]	87.0	(±5.0) [†]	88.6	(±6.0) [†]
Worcester, Massachusetts	83.3	(±5.9) [†]	82.7	(±5.9) [†]	82.6	(±5.6) [†]	84.2	(±5.6) [†]	87.2	(±4.9) [†]	87.9	(±4.8) [†]	85.4	(±6.1) [†]
Kent, Michigan	81.3	(±7.3) [†]	80.2	(±7.1) [†]	81.0	(±6.4) [†]	82.3	(±7.0) [†]	85.8	(±6.1) [†]	NA	NA	84.7	(±6.5) [†]
Macomb, Michigan	80.5	(±7.1) [†]	81.3	(±6.5) [†]	81.0	(±6.0) [†]	77.2	(±7.3)	87.4	(±5.3) [†]	84.8	(±5.8) [†]	NA	NA
Oakland, Michigan	78.7	(±6.8)	85.2	(±5.0) [†]	83.7	(±5.3) [†]	82.6	(±6.2) [†]	86.6	(±5.1) [†]	85.4	(±5.2) [†]	85.0	(±6.2) [†]
Wayne, Michigan	72.3	(±4.8)	69.6	(±4.9)	71.3	(±4.7)	71.3	(±5.3)	78.6	(±5.3)	76.6	(±5.7)	78.7	(±6.6)
Anoka, Minnesota	80.0	(±7.3)	81.6	(±7.1) [†]	83.2	(±5.9) [†]	83.9	(±6.7) [†]	NA	NA	NA	NA	83.5	(±7.1) [†]
Dakota, Minnesota	83.9	(±6.2) [†]	79.6	(±6.7)	82.4	(±6.0) [†]	81.2	(±7.1) [†]	87.6	(±5.3) [†]	84.9	(±5.9) [†]	85.8	(±6.6) [†]
Hennepin, Minnesota	82.5	(±5.4) [†]	82.7	(±4.9) [†]	85.7	(±4.6) [†]	81.2	(±5.9) [†]	87.2	(±5.0) [†]	89.9	(±4.3) [†]	85.4	(±5.1) [†]
Ramsey, Minnesota	82.2	(±6.3) [†]	80.5	(±6.6) [†]	81.5	(±5.9) [†]	77.5	(±7.5)	85.1	(±6.1) [†]	87.8	(±4.9) [†]	86.3	(±6.3) [†]
Washington, Minnesota	NA	NA	79.7	(±7.3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Harrison, Mississippi	NA	NA	77.9	(±7.0)	NA	NA	NA	NA	NA	NA	80.6	(±6.8) [†]	NA	NA
Hinds, Mississippi	76.7	(±7.5)	75.0	(±7.3)	73.5	(±7.3)	79.1	(±7.5)	NA	NA	78.3	(±7.8)	76.9	(±8.7)
Greene, Missouri	NA	NA	NA	NA	NA	NA	79.4	(±7.7)	NA	NA	NA	NA	NA	NA
Jackson, Missouri	73.1	(±7.9)	78.7	(±6.8)	77.9	(±6.7)	84.5	(±6.0) [†]	84.6	(±5.7) [†]	85.9	(±5.5) [†]	82.3	(±6.5) [†]
Jefferson, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	82.1	(±7.7) [†]
St. Charles, Missouri	NA	NA	81.5	(±6.8) [†]	NA	NA	NA	NA	NA	NA	NA	NA	86.6	(±6.0) [†]
St. Louis, Missouri	80.0	(±6.2)	82.9	(±5.4) [†]	82.0	(±5.3) [†]	84.8	(±5.7) [†]	88.9	(±4.6) [†]	87.4	(±3.9) [†]	87.1	(±5.6) [†]
City of St. Louis, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	80.5	(±8.0) [†]
Cascade, Montana [§]	71.2	(±8.0)	82.5	(±5.4) [†]	82.1	(±5.8) [†]	79.5	(±7.0)	87.5	(±5.4) [†]	84.4	(±5.7) [†]	82.1	(±7.0) [†]
Flathead, Montana	73.9	(±8.2)	75.9	(±7.1)	80.3	(±6.4) [†]	68.4	(±7.7)	79.7	(±6.9)	70.0	(±8.6)	74.8	(±8.5)
Gallatin, Montana	80.9	(±6.5) [†]	77.9	(±7.0)	78.2	(±6.5)	76.4	(±7.9)	81.7	(±6.7) [†]	84.1	(±6.0) [†]	79.3	(±7.5)
Lewis and Clark, Montana	NA	NA	82.6	(±5.9) [†]	80.1	(±6.5) [†]	81.1	(±7.2) [†]	NA	NA	NA	NA	84.0	(±7.0) [†]
Missoula, Montana	81.5	(±6.4) [†]	78.5	(±6.4)	81.9	(±6.2) [†]	80.4	(±6.8) [†]	80.2	(±6.6) [†]	78.5	(±6.4)	73.0	(±8.5)
Yellowstone, Montana	74.9	(±6.8)	81.4	(±5.5) [†]	80.6	(±5.7) [†]	79.7	(±6.3)	83.8	(±5.3) [†]	85.6	(±4.9) [†]	79.0	(±7.5)
Douglas, Nebraska [§]	78.5	(±5.7)	78.5	(±5.1)	84.2	(±4.4) [†]	80.9	(±5.3) [†]	83.7	(±4.7) [†]	86.6	(±4.3) [†]	87.4	(±3.9) [†]
Lancaster, Nebraska	82.6	(±5.8) [†]	77.4	(±5.9)	82.2	(±5.1) [†]	81.1	(±6.4) [†]	86.6	(±5.2) [†]	87.3	(±5.2) [†]	86.0	(±5.9) [†]
Sarpy, Nebraska	80.4	(±6.9) [†]	78.2	(±6.9)	80.5	(±6.3) [†]	81.0	(±7.1) [†]	86.9	(±5.6) [†]	NA	NA	NA	NA
Clark, Nevada	69.3	(±5.2)	74.3	(±4.5)	72.0	(±4.1)	73.6	(±4.7)	72.1	(±4.5)	69.5	(±4.9)	70.1	(±5.3)

See table footnotes on page 69.

TABLE 18. (Continued) Estimated vaccination coverage for the 4:3:1 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Washoe, Nevada	80.7	(±6.3) [†]	81.3	(±5.5) [†]	81.6	(±5.0) [†]	81.4	(±6.4) [†]	87.4	(±4.9) [†]	82.5	(±5.6) [†]	83.3	(±6.3) [†]
Grafton, New Hampshire ⁵	NA	NA	83.6	(±5.7) [†]	83.2	(±5.7) [†]	79.7	(±7.7)	88.1	(±5.4) [†]	NA	NA	92.4	(±4.0) [†]
Hillsborough, New Hampshire	85.4	(±4.3) [†]	85.1	(±4.0) [†]	83.4	(±4.6) [†]	83.3	(±4.9) [†]	89.2	(±3.7) [†]	86.4	(±4.1) [†]	87.1	(±4.5) [†]
Merrimack, New Hampshire	83.5	(±5.9) [†]	85.2	(±5.1) [†]	83.8	(±5.6) [†]	82.9	(±6.1) [†]	85.6	(±5.3) [†]	83.9	(±6.3) [†]	87.0	(±6.5) [†]
Rockingham, New Hampshire	83.9	(±5.4) [†]	84.7	(±4.6) [†]	84.2	(±4.4) [†]	86.3	(±4.7) [†]	88.8	(±4.4) [†]	83.7	(±5.1) [†]	87.1	(±5.2) [†]
Strafford, New Hampshire	84.8	(±5.8) [†]	82.4	(±6.3) [†]	80.7	(±6.1) [†]	80.7	(±6.9) [†]	87.1	(±5.5) [†]	85.7	(±5.5) [†]	84.7	(±6.9) [†]
Bergen, New Jersey	78.8	(±7.2)	88.4	(±4.5) [†]	83.5	(±5.2) [†]	84.9	(±6.2) [†]	87.9	(±5.3) [†]	86.0	(±5.6) [†]	87.2	(±6.4) [†]
Burlington, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	85.4	(±6.6) [†]
Camden, New Jersey	NA	NA	79.9	(±7.1)	77.6	(±6.9)	80.9	(±7.0) [†]	NA	NA	82.8	(±6.6) [†]	84.8	(±7.0) [†]
Essex, New Jersey	79.3	(±6.1)	78.0	(±6.0)	76.2	(±5.9)	70.3	(±7.1)	76.8	(±6.7)	79.4	(±6.3)	75.3	(±7.2)
Hudson, New Jersey	73.5	(±8.9)	78.5	(±7.1)	71.5	(±8.1)	70.5	(±9.6)	77.2	(±7.6)	NA	NA	75.6	(±8.7)
Middlesex, New Jersey	NA	NA	82.5	(±6.1) [†]	78.9	(±6.6)	79.6	(±6.8)	85.7	(±5.8) [†]	84.4	(±6.0) [†]	79.6	(±7.9)
Monmouth, New Jersey	NA	NA	83.8	(±5.9) [†]	83.5	(±5.3) [†]	77.5	(±7.6)	NA	NA	85.0	(±5.7) [†]	81.5	(±7.2) [†]
Morris, New Jersey	78.2	(±7.6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ocean, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	82.0	(±6.8) [†]	78.8	(±7.0)	80.1	(±7.7) [†]
Passaic, New Jersey	NA	NA	NA	NA	76.5	(±7.0)	75.8	(±8.1)	81.2	(±6.8) [†]	NA	NA	NA	NA
Union, New Jersey	NA	NA	78.7	(±7.4)	79.8	(±6.4)	82.6	(±6.8) [†]	83.4	(±6.1) [†]	NA	NA	82.7	(±7.6) [†]
Bernalillo, New Mexico ⁵	71.8	(±7.3)	76.3	(±5.7)	74.6	(±6.1)	70.2	(±6.3)	83.5	(±5.4) [†]	77.2	(±6.1)	82.6	(±6.2) [†]
Dona Ana, New Mexico	73.2	(±8.6)	77.2	(±6.8)	72.6	(±7.6)	69.2	(±9.4)	80.8	(±7.2) [†]	NA	NA	80.6	(±8.0) [†]
Sandoval, New Mexico	NA	NA	NA	NA	NA	NA	NA	NA	83.0	(±7.7) [†]	NA	NA	76.9	(±9.4)
San Juan, New Mexico	NA	NA	NA	NA	73.6	(±7.8)	73.8	(±8.3)	89.2	(±6.9) [†]	76.1	(±7.8)	77.9	(±8.6)
Santa Fe, New Mexico	80.9	(±7.1) [†]	NA	NA	72.8	(±7.6)	NA	NA	80.6	(±7.1) [†]	NA	NA	NA	NA
Bronx, New York ⁵	70.9	(±8.7)	71.3	(±7.8)	68.1	(±7.8)	74.0	(±7.4)	72.2	(±7.9)	77.7	(±7.1)	82.0	(±6.3) [†]
Erie, New York	80.4	(±7.1) [†]	83.0	(±6.3) [†]	82.8	(±5.7) [†]	79.2	(±7.5)	82.7	(±7.1) [†]	81.2	(±7.3) [†]	NA	NA
Kings, New York	76.6	(±6.7)	76.3	(±6.1)	72.9	(±5.6)	76.0	(±6.2)	75.9	(±6.3)	79.4	(±5.2)	78.5	(±5.0)
Monroe, New York	NA	NA	82.1	(±6.2) [†]	82.2	(±6.0) [†]	80.2	(±7.4) [†]	87.3	(±5.5) [†]	89.5	(±4.2) [†]	88.7	(±5.6) [†]
Nassau, New York	81.3	(±7.2) [†]	87.3	(±4.7) [†]	80.6	(±5.5) [†]	81.7	(±6.5) [†]	83.4	(±6.1) [†]	87.3	(±5.3) [†]	87.5	(±5.2) [†]
New York, New York	79.6	(±7.5)	86.0	(±5.3) [†]	85.8	(±5.3) [†]	84.8	(±6.5) [†]	90.4	(±4.7) [†]	87.4	(±4.6) [†]	85.9	(±5.4) [†]
Queens, New York	78.0	(±6.8)	81.7	(±5.3) [†]	73.9	(±5.8)	78.8	(±6.1)	84.0	(±5.1) [†]	85.5	(±5.1) [†]	85.4	(±5.1) [†]
Suffolk, New York	80.9	(±6.2) [†]	84.9	(±5.2) [†]	79.2	(±5.6)	81.2	(±6.4) [†]	86.8	(±5.5) [†]	82.4	(±5.9) [†]	80.5	(±6.5) [†]
Westchester, New York	NA	NA	87.7	(±4.8) [†]	84.0	(±5.7) [†]	84.8	(±6.2) [†]	86.2	(±6.0) [†]	88.0	(±5.2) [†]	NA	NA
Durham, North Carolina	NA	NA	NA	NA	NA	NA	NA	NA	78.9	(±8.0)	NA	NA	NA	NA
Guilford, North Carolina	NA	NA	79.1	(±6.9)	80.8	(±6.3) [†]	NA	NA	NA	NA	NA	NA	NA	NA
Mecklenburg, North Carolina	80.1	(±6.8) [†]	80.8	(±6.5) [†]	80.1	(±6.5) [†]	80.6	(±7.0) [†]	87.2	(±5.6) [†]	88.1	(±5.0) [†]	85.1	(±6.5) [†]
Wake, North Carolina	83.5	(±6.1) [†]	83.1	(±6.0) [†]	79.9	(±6.2)	84.5	(±6.2) [†]	87.8	(±5.4) [†]	89.9	(±4.2) [†]	88.8	(±4.9) [†]
Burleigh, North Dakota	80.4	(±6.4) [†]	83.0	(±5.4) [†]	79.4	(±5.8)	80.8	(±7.2) [†]	86.2	(±5.3) [†]	85.0	(±5.6) [†]	81.5	(±6.5) [†]
Cass, North Dakota	82.1	(±5.4) [†]	79.4	(±5.4)	81.3	(±5.0) [†]	81.6	(±6.0) [†]	87.0	(±4.6) [†]	87.5	(±4.3) [†]	86.9	(±5.4) [†]
Grand Forks, North Dakota	81.0	(±6.5) [†]	79.4	(±6.4)	81.2	(±5.7) [†]	77.5	(±7.1)	86.4	(±5.4) [†]	87.4	(±5.5) [†]	85.4	(±6.9) [†]
Ward, North Dakota	83.8	(±6.0) [†]	78.6	(±6.6)	80.3	(±5.7) [†]	80.8	(±6.8) [†]	84.4	(±5.9) [†]	83.1	(±6.3) [†]	81.3	(±7.0) [†]
Cuyahoga, Ohio ⁵	77.8	(±4.2)	76.4	(±3.7)	74.4	(±3.8)	75.8	(±4.3)	83.4	(±3.6) [†]	86.5	(±3.2) [†]	88.4	(±4.9) [†]
Franklin, Ohio	79.5	(±3.8)	76.6	(±3.7)	79.4	(±3.3)	81.4	(±3.4) [†]	85.8	(±3.1) [†]	86.0	(±5.0) [†]	80.9	(±7.4) [†]
Hamilton, Ohio ⁵	78.9	(±7.0)	81.3	(±6.1) [†]	79.6	(±6.3)	84.8	(±6.0) [†]	85.8	(±5.8) [†]	84.7	(±6.1) [†]	88.9	(±5.4) [†]
Lucas, Ohio	NA	NA	78.6	(±6.9)	NA	NA	78.9	(±7.5)	NA	NA	NA	NA	NA	NA
Montgomery, Ohio	NA	NA	NA	NA	NA	NA	79.5	(±7.1)	NA	NA	NA	NA	NA	NA
Cleveland, Oklahoma	NA	NA	78.2	(±7.3)	NA	NA	81.7	(±7.1) [†]	82.8	(±6.7) [†]	85.8	(±5.6) [†]	82.9	(±7.2) [†]
Oklahoma, Oklahoma	78.4	(±7.0)	75.2	(±6.6)	77.6	(±5.7)	74.2	(±6.9)	72.8	(±7.8)	80.8	(±5.7) [†]	81.8	(±6.6) [†]
Tulsa, Oklahoma	72.2	(±7.2)	78.9	(±5.9)	77.9	(±6.1)	81.9	(±6.4) [†]	79.5	(±7.8)	80.9	(±5.9) [†]	79.8	(±6.8)
Clackamas, Oregon	80.5	(±6.6) [†]	74.6	(±6.9)	83.2	(±5.4) [†]	79.5	(±7.2)	84.8	(±6.3) [†]	NA	NA	78.6	(±7.9)
Lane, Oregon	77.6	(±7.2)	80.2	(±6.6) [†]	79.9	(±6.5)	68.7	(±8.5)	81.7	(±6.9) [†]	78.1	(±7.1)	79.0	(±8.3)
Marion, Oregon	81.7	(±6.8) [†]	78.8	(±6.4)	76.7	(±6.3)	77.7	(±7.6)	81.1	(±6.7) [†]	80.3	(±7.0) [†]	77.6	(±8.9)
Multnomah, Oregon	80.3	(±5.7) [†]	77.1	(±5.9)	80.2	(±5.4) [†]	77.8	(±6.1)	80.6	(±6.1) [†]	82.2	(±5.7) [†]	80.2	(±6.6) [†]
Washington, Oregon ⁵	73.9	(±7.1)	80.1	(±6.0) [†]	78.1	(±5.9)	81.3	(±6.3) [†]	81.8	(±5.5) [†]	82.4	(±6.0) [†]	84.7	(±7.0) [†]
Allegheny, Pennsylvania	81.8	(±6.1) [†]	80.9	(±5.8) [†]	83.4	(±5.6) [†]	86.7	(±5.5) [†]	87.5	(±5.1) [†]	83.7	(±5.9) [†]	86.1	(±5.7) [†]
Delaware, Pennsylvania	NA	NA	82.6	(±6.3) [†]	NA	NA	NA	NA	87.9	(±5.4) [†]	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	79.8	(±8.2)
Montgomery, Pennsylvania	82.8	(±6.2) [†]	88.3	(±4.7) [†]	81.8	(±6.0) [†]	NA	NA	90.3	(±4.5) [†]	NA	NA	89.8	(±5.1) [†]
Philadelphia, Pennsylvania ⁵	75.5	(±4.4)	80.6	(±3.5) [†]	77.9	(±3.5)	75.5	(±3.8)	80.9	(±3.6) [†]	82.6	(±3.7) [†]	84.0	(±3.5) [†]
Kent, Rhode Island	80.4	(±6.4) [†]	84.7	(±4.9) [†]	85.1	(±5.1) [†]	83.5	(±5.6) [†]	86.8	(±5.1) [†]	86.8	(±4.5) [†]	84.9	(±5.9) [†]
Newport, Rhode Island	82.9	(±6.3) [†]	81.0	(±6.3) [†]	77.5	(±6.6)	82.0	(±6.5) [†]	NA	NA	85.7	(±5.4) [†]	NA	NA
Providence, Rhode Island	84.0	(±3.8) [†]	84.9	(±3.4) [†]	84.8	(±3.6) [†]	86.9	(±3.4) [†]	87.9	(±3.6) [†]	83.4	(±3.8) [†]	82.8	(±4.7) [†]
Washington, Rhode Island	86.4	(±5.5) [†]	82.9	(±5.8) [†]	83.2	(±5.1) [†]	83.9	(±6.0) [†]	88.3	(±4.8) [†]	91.0	(±4.1) [†]	88.1	(±5.4) [†]
Charleston, South Carolina	82.2	(±7.0) [†]	80.2	(±6.3) [†]	79.0	(±6.7)	79.1	(±7.9)	78.7	(±7.9)	84.6	(±6.4) [†]	82.7	(±7.2) [†]
Greenville, South Carolina	82.4	(±6.7) [†]	80.6	(±6.2) [†]	80.3	(±6.0) [†]	81.8	(±6.9) [†]	86.7	(±5.8) [†]	82.2	(±6.4) [†]	80.1	(±7.2) [†]
Horry, South Carolina	NA	NA	NA	NA	NA	NA	81.6	(±7.2) [†]	NA	NA	NA	NA	83.8	(±7.6) [†]
Richland, South Carolina	NA	NA	80.0	(±7.1)	77.3	(±7.0)	82.3	(±7.3) [†]	NA	NA	88.3	(±4.9) [†]	84.2	(±6.5) [†]
Spartanburg, South Carolina	77.4	(±7.5)	77.2	(±7.4)	81.2	(±6.4) [†]	NA	NA	NA	NA	84.2	(±6.1) [†]	84.3	(±6.8) [†]
York, South Carolina	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	82.6	(±6.8) [†]
Minnehaha, South Dakota	80.8	(±5.7) [†]	77.6	(±5.9)	79.3	(±5.5)	77.8	(±6.7)	88.0	(±4.6) [†]	82.8	(±5.4) [†]	85.7	(±5.3) [†]

See table footnotes on page 69.

TABLE 18. (Continued) Estimated vaccination coverage for the 4:3:1 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Pennington, South Dakota	81.1	(±6.8) [†]	80.8	(±6.2) [†]	82.3	(±5.7) [†]	79.2	(±8.0)	88.9	(±4.9) [†]	83.2	(±5.8) [†]	81.3	(±7.7) [†]
Davidson, Tennessee [§]	78.0	(±3.8)	79.5	(±3.4)	75.6	(±3.7)	82.1	(±3.4) [†]	86.8	(±3.0) [†]	84.9	(±4.9) [†]	87.9	(±5.4) [†]
Hamilton, Tennessee	NA	NA	80.5	(±6.3) [†]	77.2	(±6.7)	80.6	(±7.8) [†]	NA	NA	NA	NA	NA	NA
Knox, Tennessee	82.2	(±6.4) [†]	83.1	(±5.5) [†]	79.4	(±6.2)	78.8	(±7.5)	85.0	(±5.5) [†]	86.7	(±5.8) [†]	88.5	(±5.7) [†]
Shelby, Tennessee [§]	72.7	(±4.2)	73.5	(±4.0)	77.8	(±3.6)	76.0	(±4.0)	80.3	(±3.6) [†]	77.4	(±4.2)	82.6	(±6.7) [†]
Bexar, Texas	75.7	(±4.2)	79.2	(±3.6)	69.4	(±4.2)	76.9	(±3.6)	77.9	(±4.2)	78.8	(±4.2)	80.9	(±3.7) [†]
Collin, Texas [¶]	NA	NA	NA	NA	NA	NA	95.6	(±1.6) [†]	NA	NA	86.1	(±5.6) [†]	NA	NA
Dallas, Texas	74.0	(±4.4)	75.5	(±3.8)	73.2	(±3.9)	73.2	(±3.6)	76.1	(±3.7)	78.1	(±4.2)	78.2	(±3.7)
El Paso, Texas [§]	69.3	(±4.5)	72.4	(±3.6)	73.0	(±3.9)	71.7	(±4.2)	77.4	(±3.9)	76.1	(±3.7)	79.0	(±3.6)
Harris, Texas [§]	71.9	(±4.6)	67.9	(±4.5)	70.2	(±4.2)	71.8	(±4.7)	72.0	(±4.4)	78.1	(±4.5)	79.4	(±5.7)
Hidalgo, Texas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	79.4	(±7.6)	NA	NA
Tarrant, Texas	78.6	(±7.3)	73.2	(±7.5)	76.8	(±6.8)	77.8	(±7.6)	81.5	(±6.6) [†]	82.9	(±5.8) [†]	81.3	(±7.5) [†]
Travis, Texas	NA	NA	NA	NA	77.2	(±7.2)	NA	NA	83.9	(±6.9) [†]	80.2	(±6.7) [†]	NA	NA
Cache, Utah	NA	NA	78.8	(±7.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Davis, Utah	73.9	(±7.5)	81.3	(±6.1) [†]	79.0	(±6.1)	80.1	(±6.7) [†]	82.2	(±6.3) [†]	81.0	(±6.6) [†]	83.5	(±6.5) [†]
Salt Lake, Utah [§]	70.8	(±5.6)	76.6	(±5.2)	79.6	(±4.7)	79.1	(±5.3)	80.0	(±5.3)	81.0	(±5.9) [†]	80.8	(±6.1) [†]
Utah, Utah	72.0	(±6.7)	73.3	(±6.1)	78.8	(±5.6)	79.3	(±5.9)	81.6	(±5.5) [†]	79.2	(±6.6)	78.1	(±6.9)
Weber, Utah	74.1	(±7.8)	80.6	(±6.1) [†]	79.6	(±6.3)	77.1	(±8.1)	83.5	(±6.3) [†]	NA	NA	NA	NA
Addison, Vermont	86.3	(±5.9) [†]	88.1	(±5.0) [†]	NA	NA	81.0	(±6.9) [†]	86.8	(±5.5) [†]	NA	NA	NA	NA
Bennington, Vermont	NA	NA	83.6	(±6.3) [†]	83.1	(±5.9) [†]	NA	NA	NA	NA	NA	NA	NA	NA
Chittenden, Vermont	86.8	(±4.7) [†]	87.2	(±4.3) [†]	84.7	(±4.7) [†]	84.3	(±5.0) [†]	89.9	(±3.8) [†]	92.2	(±3.3) [†]	84.2	(±5.2) [†]
Franklin, Vermont	80.3	(±7.1) [†]	85.2	(±5.6) [†]	82.6	(±5.7) [†]	82.7	(±6.9) [†]	86.6	(±5.4) [†]	NA	NA	85.6	(±6.3) [†]
Lamoille, Vermont	NA	NA	NA	NA	NA	NA	NA	NA	84.6	(±6.6) [†]	NA	NA	NA	NA
Orange, Vermont	81.5	(±7.4) [†]	82.6	(±5.8) [†]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rutland, Vermont	78.7	(±6.8)	82.4	(±6.0) [†]	82.1	(±5.6) [†]	83.0	(±6.9) [†]	86.0	(±5.6) [†]	NA	NA	NA	NA
Washington, Vermont	83.8	(±6.4) [†]	83.3	(±5.7) [†]	82.6	(±6.2) [†]	84.4	(±6.6) [†]	87.8	(±5.0) [†]	84.7	(±5.9) [†]	80.4	(±7.4) [†]
Windham, Vermont	NA	NA	83.6	(±6.2) [†]	83.7	(±5.6) [†]	79.3	(±7.4)	NA	NA	NA	NA	82.7	(±6.9) [†]
Windsor, Vermont	81.2	(±6.8) [†]	82.2	(±6.1) [†]	81.4	(±5.9) [†]	81.9	(±6.6) [†]	87.8	(±5.4) [†]	77.3	(±9.7)	NA	NA
Fairfax, Virginia [§]	80.1	(±6.2) [†]	79.4	(±5.8)	79.8	(±5.9)	80.7	(±6.7) [†]	88.9	(±4.5) [†]	89.0	(±4.1) [†]	87.9	(±4.7) [†]
Loudoun, Virginia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	84.8	(±6.8) [†]
Virginia Beach, Virginia	NA	NA	75.8	(±7.3)	77.5	(±6.8)	NA	NA	NA	NA	NA	NA	78.5	(±8.4)
Clark, Washington	80.1	(±7.5) [†]	79.4	(±6.7)	77.9	(±6.3)	78.5	(±7.6)	82.8	(±6.7) [†]	82.3	(±6.8) [†]	NA	NA
King, Washington	83.0	(±3.2) [†]	83.8	(±3.1) [†]	78.1	(±3.3)	76.5	(±3.6)	85.4	(±2.9) [†]	82.7	(±4.0) [†]	81.8	(±5.5) [†]
Kitsap, Washington	NA	NA	NA	NA	81.1	(±6.2) [†]	NA	NA	77.5	(±7.8)	NA	NA	78.4	(±7.8)
Pierce, Washington	78.6	(±6.8)	80.4	(±6.1) [†]	76.7	(±5.7)	76.3	(±7.2)	79.8	(±6.7)	84.0	(±6.0) [†]	76.9	(±8.2)
Snohomish, Washington	77.7	(±7.0)	78.7	(±6.1)	78.8	(±5.7)	78.9	(±6.4)	84.0	(±5.8) [†]	79.4	(±6.6)	79.8	(±8.3)
Spokane, Washington	79.6	(±7.1)	81.0	(±6.1) [†]	81.3	(±5.7) [†]	72.3	(±8.2)	82.2	(±6.7) [†]	NA	NA	78.2	(±7.7)
Thurston, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	78.4	(±7.3)
Whatcom, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	84.1	(±6.6) [†]
Yakima, Washington	75.6	(±8.3)	75.9	(±7.5)	NA	NA	75.1	(±9.4)	NA	NA	NA	NA	NA	NA
Kanawha, West Virginia	75.7	(±7.2)	84.1	(±5.5) [†]	81.7	(±5.6) [†]	NA	NA	87.0	(±5.4) [†]	76.2	(±7.8)	84.6	(±6.3) [†]
Brown, Wisconsin	NA	NA	NA	NA	NA	NA	81.1	(±7.3) [†]	NA	NA	NA	NA	NA	NA
Dane, Wisconsin	84.6	(±5.8) [†]	85.8	(±5.5) [†]	81.0	(±5.9) [†]	81.7	(±6.9) [†]	87.0	(±5.2) [†]	89.9	(±4.4) [†]	85.7	(±6.7) [†]
Milwaukee, Wisconsin [§]	72.9	(±4.2)	74.8	(±3.7)	73.2	(±3.9)	72.9	(±4.5)	81.6	(±3.6) [†]	80.2	(±4.8) [†]	81.7	(±6.3) [†]
Outagamie, Wisconsin	NA	NA	80.3	(±6.8) [†]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Waukesha, Wisconsin	81.7	(±6.4) [†]	84.1	(±5.5) [†]	84.2	(±5.3) [†]	84.0	(±6.5) [†]	88.4	(±4.9) [†]	87.6	(±4.9) [†]	NA	NA
Albany, Wyoming	NA	NA	77.1	(±6.9)	81.1	(±6.3) [†]	NA	NA	83.4	(±6.7) [†]	NA	NA	NA	NA
Campbell, Wyoming	NA	NA	80.3	(±6.6) [†]	79.9	(±6.2)	81.7	(±6.7) [†]	82.5	(±5.9) [†]	82.3	(±6.3) [†]	85.9	(±6.1) [†]
Fremont, Wyoming [§]	NA	NA	77.3	(±7.4)	75.8	(±6.9)	76.4	(±8.4)	92.0	(±5.4) [†]	NA	NA	NA	NA
Laramie, Wyoming	77.6	(±6.6)	78.9	(±5.9)	81.8	(±5.5) [†]	76.8	(±7.3)	85.3	(±5.1) [†]	84.4	(±5.4) [†]	72.6	(±7.8)
Natrona, Wyoming	75.8	(±7.3)	81.5	(±5.5) [†]	80.9	(±5.4) [†]	79.3	(±6.7)	85.0	(±5.4) [†]	79.6	(±6.6)	81.4	(±6.6) [†]
Sweetwater, Wyoming	77.8	(±7.2)	71.7	(±7.4)	80.3	(±6.1) [†]	79.1	(±7.6)	NA	NA	76.0	(±8.0)	76.3	(±7.8)
Uinta, Wyoming	NA	NA	NA	NA	80.4	(±6.4) [†]	NA	NA	NA	NA	NA	NA	NA	NA
United States[§]	77.5	(±0.8)	79.1	(±0.6)	78.4	(±0.7)	78.4	(±0.7)	83.2	(±0.6)[†]	83.1	(±0.7)[†]	82.7	(±0.7)[†]
Sample size, no.	37,282		44,855		45,623		45,052		43,308		38,607		35,447	
All selected counties	77.5	(±1.0)	78.6	(±0.8)	77.8	(±0.8)	78.4	(±0.8)	82.9	(±0.8)[†]	83.1	(±0.8)[†]	82.9	(±0.9)[†]
Sample size, no.	23,014		29,227		30,362		29,851		28,845		23,485		20,552	
Range, %	68.3–86.8		66.7–88.4		68.1–88.5		66.1–95.6		72.0–92.0		68.5–92.2		70.1–92.4	

Abbreviations: CI = confidence interval; DTaP = diphtheria and tetanus toxoids and acellular pertussis; DTP = diphtheria and tetanus toxoids and pertussis; MMR = measles, mumps, and rubella; NA = not available.

* ≥4 doses DTaP/DTP vaccine, ≥3 doses of polio vaccine, ≥1 dose of MMR vaccine.

[†] Estimate exceeds the *Healthy People 2010* objective of 80% vaccination coverage.

[§] Estimates increased significantly between the first and last biennial periods ($p < 0.05$).

[¶] Estimates decreased significantly between the first and last biennial periods ($p < 0.05$).

TABLE 19. Estimated vaccination coverage for the 4:3:1:3 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Jefferson, Alabama	80.2	(±3.5) [†]	82.8	(±3.0) [†]	80.6	(±3.4) [†]	82.8	(±3.4) [†]	82.9	(±4.0) [†]	86.1	(±4.6) [†]	84.1	(±6.4) [†]
Madison, Alabama	NA	NA	78.2	(±6.9)	78.4	(±6.6)	NA	NA	83.8	(±6.2) [†]	84.8	(±5.6) [†]	84.3	(±7.1) [†]
Mobile, Alabama	68.2	(±8.9)	79.5	(±6.3)	74.8	(±7.2)	77.6	(±7.3)	78.2	(±7.7)	79.1	(±6.8)	80.0	(±7.8)
Montgomery, Alabama	NA	NA	73.9	(±7.9)	76.4	(±7.7)	NA	NA	NA	NA	NA	NA	NA	NA
Shelby, Alabama	NA	NA	NA	NA	81.2	(±6.2) [†]	82.5	(±6.8) [†]	85.9	(±5.9) [†]	NA	NA	84.1	(±7.3) [†]
Anchorage, Alaska	NA	NA	NA	NA	77.2	(±4.5)	76.7	(±5.2)	79.2	(±5.2)	80.2	(±5.3) [†]	80.0	(±5.9)
Fairbanks North Star, Alaska	NA	NA	NA	NA	75.8	(±6.4)	73.1	(±7.2)	75.2	(±7.1)	80.3	(±6.0) [†]	76.3	(±8.0)
Kenai Peninsula, Alaska	NA	NA	NA	NA	78.9	(±6.6)	NA	NA	NA	NA	NA	NA	NA	NA
Matanuska-Susitna, Alaska	NA	NA	NA	NA	78.8	(±6.4)	72.8	(±8.3)	82.9	(±6.2) [†]	74.6	(±7.3)	70.8	(±8.4)
Cochise, Arizona	NA	NA	73.7	(±7.7)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Coconino, Arizona [§]	NA	NA	66.2	(±8.1)	NA	NA	NA	NA	85.9	(±9.7) [†]	NA	NA	NA	NA
Maricopa, Arizona [§]	71.0	(±4.6)	74.0	(±3.8)	72.1	(±3.9)	73.3	(±3.9)	81.0	(±3.4) [†]	78.9	(±3.8)	79.0	(±5.1)
Mohave, Arizona	NA	NA	NA	NA	69.8	(±8.0)	70.3	(±9.0)	NA	NA	NA	NA	NA	NA
Pima, Arizona	73.8	(±5.9)	76.7	(±5.0)	78.9	(±4.9)	71.4	(±5.7)	77.1	(±5.6)	79.1	(±5.4)	82.2	(±6.6) [†]
Pinal, Arizona	70.0	(±8.8)	71.1	(±8.2)	73.1	(±8.0)	69.9	(±8.3)	75.6	(±8.3)	81.0	(±8.0) [†]	NA	NA
Yavapai, Arizona	NA	NA	NA	NA	NA	NA	71.3	(±8.9)	80.1	(±7.0) [†]	NA	NA	NA	NA
Yuma, Arizona	72.4	(±8.5)	76.2	(±7.0)	67.1	(±8.1)	65.8	(±9.0)	81.8	(±6.8) [†]	77.9	(±7.8)	NA	NA
Benton, Arkansas	NA	NA	77.6	(±6.7)	NA	NA	75.1	(±7.9)	85.9	(±5.4) [†]	75.6	(±7.5)	81.1	(±7.1) [†]
Pulaski, Arkansas	75.9	(±7.3)	78.9	(±6.0)	71.6	(±7.0)	74.8	(±7.4)	83.0	(±6.5) [†]	76.2	(±8.3)	81.6	(±7.0) [†]
Washington, Arkansas	76.2	(±7.9)	76.7	(±6.9)	NA	NA	72.9	(±8.6)	NA	NA	NA	NA	76.7	(±8.0)
Alameda, California [§]	68.8	(±8.8)	NA	NA	73.2	(±7.5)	80.8	(±7.4) [†]	82.3	(±6.4) [†]	82.9	(±4.6) [†]	81.7	(±6.6) [†]
Los Angeles, California [§]	72.6	(±4.7)	73.6	(±4.0)	74.4	(±3.9)	74.1	(±4.1)	81.7	(±3.4) [†]	81.1	(±3.6) [†]	81.1	(±3.4) [†]
Orange, California	76.7	(±7.0)	78.6	(±6.1)	72.3	(±6.9)	78.9	(±6.9)	81.9	(±5.9) [†]	81.4	(±6.2) [†]	84.6	(±6.4) [†]
Riverside, California	NA	NA	NA	NA	73.1	(±7.7)	69.4	(±9.0)	74.4	(±7.5)	NA	NA	77.6	(±8.5)
San Bernardino, California	NA	NA	71.5	(±7.5)	72.6	(±7.7)	67.7	(±9.0)	80.4	(±6.9) [†]	74.1	(±5.8)	78.3	(±6.6)
San Diego, California	74.1	(±4.2)	77.1	(±3.4)	74.9	(±3.6)	78.3	(±3.5)	81.1	(±3.6) [†]	84.3	(±4.5) [†]	81.5	(±7.1) [†]
San Mateo, California	NA	NA	79.2	(±7.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Santa Clara, California	77.4	(±3.9)	77.4	(±3.6)	79.0	(±3.4)	80.6	(±3.2) [†]	85.7	(±3.3) [†]	83.1	(±5.3) [†]	NA	NA
Adams, Colorado	73.9	(±8.0)	75.6	(±6.6)	71.2	(±7.4)	70.7	(±8.6)	78.5	(±7.1)	NA	NA	NA	NA
Arapahoe, Colorado	81.9	(±6.3) [†]	77.8	(±6.6)	79.3	(±6.3)	69.1	(±8.1)	84.5	(±5.6) [†]	NA	NA	82.4	(±7.7) [†]
Boulder, Colorado	NA	NA	81.2	(±6.0) [†]	81.1	(±6.3) [†]	73.2	(±8.4)	76.7	(±7.4)	83.9	(±5.6) [†]	79.5	(±8.0)
Denver, Colorado	79.2	(±7.0)	76.1	(±6.3)	77.7	(±6.3)	76.4	(±7.1)	80.6	(±6.7) [†]	NA	NA	NA	NA
Douglas, Colorado	NA	NA	NA	NA	82.5	(±6.2) [†]	82.5	(±6.6) [†]	86.8	(±5.1) [†]	NA	NA	NA	NA
El Paso, Colorado	71.9	(±8.1)	76.0	(±7.0)	73.4	(±6.6)	76.6	(±7.2)	74.6	(±6.9)	81.4	(±6.1) [†]	75.4	(±8.2)
Jefferson, Colorado	78.5	(±7.1)	78.5	(±5.9)	81.3	(±6.1) [†]	85.2	(±5.4) [†]	85.7	(±5.4) [†]	88.1	(±4.5) [†]	78.4	(±8.1)
Larimer, Colorado	NA	NA	NA	NA	77.7	(±6.5)	76.3	(±7.9)	NA	NA	81.6	(±6.5) [†]	NA	NA
Weld, Colorado	NA	NA	NA	NA	76.8	(±7.2)	73.1	(±8.6)	78.1	(±7.2)	NA	NA	80.8	(±8.1) [†]
Fairfield, Connecticut	82.0	(±5.8) [†]	81.2	(±4.6) [†]	84.6	(±4.4) [†]	86.7	(±4.5) [†]	89.4	(±4.4) [†]	85.7	(±4.5) [†]	80.6	(±6.2) [†]
Hartford, Connecticut	84.2	(±5.5) [†]	84.9	(±4.7) [†]	81.2	(±5.1) [†]	81.4	(±5.5) [†]	89.0	(±4.1) [†]	87.8	(±4.0) [†]	82.5	(±6.2) [†]
New Haven, Connecticut	80.9	(±5.8) [†]	85.5	(±4.5) [†]	82.1	(±5.1) [†]	80.1	(±5.9) [†]	84.3	(±5.7) [†]	84.5	(±5.2) [†]	82.0	(±5.9) [†]
New London, Connecticut	79.7	(±7.6)	78.9	(±6.5)	79.4	(±6.3)	NA	NA	86.3	(±5.7) [†]	88.7	(±4.6) [†]	76.3	(±8.1)
Kent, Delaware	76.8	(±6.8)	77.8	(±5.8)	74.2	(±6.2)	79.8	(±5.9)	82.6	(±5.8) [†]	83.1	(±5.9) [†]	79.6	(±6.8)
New Castle, Delaware	75.9	(±4.9)	79.4	(±4.0)	77.0	(±4.1)	79.8	(±4.2)	85.9	(±3.6) [†]	85.5	(±3.9) [†]	80.2	(±4.9) [†]
Sussex, Delaware	72.8	(±7.1)	76.9	(±6.2)	80.7	(±5.6) [†]	82.4	(±6.1) [†]	82.8	(±5.7) [†]	86.5	(±4.8) [†]	76.3	(±6.5)
District of Columbia [§]	72.5	(±4.8)	71.9	(±4.1)	73.5	(±4.0)	73.6	(±4.3)	81.4	(±4.0) [†]	81.9	(±3.5) [†]	81.9	(±3.8) [†]
Broward, Florida	78.0	(±7.0)	77.3	(±6.2)	78.2	(±6.2)	79.9	(±6.7)	80.3	(±6.8) [†]	79.2	(±6.7)	83.5	(±6.9) [†]
Duval, Florida [§]	72.9	(±4.5)	74.4	(±3.9)	77.0	(±3.7)	76.0	(±4.3)	80.2	(±3.7) [†]	80.9	(±3.4) [†]	NA	NA
Hillsborough, Florida	74.9	(±8.3)	79.4	(±6.5)	75.2	(±6.8)	76.1	(±7.6)	81.2	(±6.4) [†]	79.8	(±6.6)	NA	NA
Dade, Florida	NA	NA	NA	NA	79.5	(±3.8)	75.2	(±4.1)	83.1	(±3.5) [†]	83.0	(±4.8) [†]	82.6	(±3.7) [†]
Orange, Florida [§]	NA	NA	NA	NA	74.9	(±6.6)	NA	NA	81.6	(±6.9) [†]	NA	NA	85.9	(±4.6) [†]
Palm Beach, Florida	NA	NA	78.6	(±6.4)	81.9	(±5.9) [†]	81.0	(±6.7) [†]	85.7	(±5.9) [†]	79.3	(±6.9)	83.0	(±8.0) [†]
Pinellas, Florida	NA	NA	76.1	(±7.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobb, Georgia	77.8	(±7.2)	77.3	(±6.7)	80.1	(±6.2) [†]	80.8	(±6.5) [†]	87.0	(±5.2) [†]	84.8	(±5.2) [†]	79.6	(±7.2)
DeKalb, Georgia	75.3	(±6.7)	72.8	(±5.4)	79.9	(±4.7)	75.5	(±5.0)	79.5	(±4.4)	80.3	(±5.2) [†]	84.3	(±6.6) [†]
Fulton, Georgia	76.4	(±6.0)	73.8	(±5.0)	78.4	(±4.4)	78.3	(±4.8)	83.7	(±4.0) [†]	83.3	(±4.7) [†]	78.9	(±7.5)
Gwinnett, Georgia	76.9	(±7.5)	78.2	(±6.3)	81.2	(±6.2) [†]	81.0	(±6.6) [†]	81.5	(±6.1) [†]	87.5	(±4.8) [†]	74.0	(±9.4)
Hawaii, Hawaii [§]	72.2	(±8.4)	73.7	(±7.6)	74.1	(±7.1)	75.1	(±8.2)	82.2	(±5.8) [†]	73.9	(±7.8)	82.9	(±6.5) [†]
Honolulu, Hawaii	76.2	(±5.4)	76.0	(±4.3)	76.6	(±4.3)	74.9	(±4.7)	81.8	(±3.5) [†]	82.9	(±4.0) [†]	81.0	(±4.6) [†]
Maui, Hawaii [§]	69.2	(±8.6)	74.3	(±7.8)	71.7	(±7.5)	75.0	(±7.8)	80.2	(±6.5) [†]	78.0	(±7.6)	84.6	(±6.6) [†]
Ada, Idaho	73.9	(±6.5)	78.7	(±5.2)	77.3	(±5.6)	74.1	(±6.5)	84.5	(±4.9) [†]	82.5	(±5.0) [†]	74.8	(±6.8)
Bannock, Idaho	NA	NA	77.9	(±6.9)	76.7	(±6.8)	77.3	(±7.9)	NA	NA	NA	NA	NA	NA
Bonneville, Idaho	71.1	(±7.7)	74.7	(±7.0)	78.5	(±6.2)	80.2	(±7.0) [†]	85.0	(±5.5) [†]	79.9	(±6.7)	74.1	(±8.8)
Canyon, Idaho	NA	NA	72.9	(±6.7)	70.7	(±7.2)	73.0	(±7.7)	78.1	(±7.0)	72.1	(±7.2)	72.7	(±8.5)
Kootenai, Idaho	76.2	(±7.5)	79.9	(±6.4)	79.5	(±6.5)	73.3	(±8.5)	NA	NA	NA	NA	NA	NA
Twin Falls, Idaho	NA	NA	75.9	(±7.1)	NA	NA	78.3	(±7.6)	NA	NA	NA	NA	NA	NA
Cook, Illinois	73.0	(±4.3)	68.8	(±4.4)	71.4	(±4.1)	76.0	(±3.7)	80.8	(±4.0) [†]	79.9	(±4.4)	76.4	(±4.1)
DuPage, Illinois	82.5	(±6.3) [†]	81.6	(±5.6) [†]	81.2	(±5.8) [†]	81.4	(±6.9) [†]	89.4	(±4.6) [†]	NA	NA	78.3	(±7.5)
Lake, Illinois	77.1	(±7.7)	81.6	(±6.1) [†]	81.0	(±6.2) [†]	78.7	(±7.1)	82.7	(±6.4) [†]	NA	NA	85.0	(±6.8) [†]

See table footnotes on page 73.

TABLE 19. (Continued) Estimated vaccination coverage for the 4:3:1:3 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Will, Illinois	NA	NA	NA	NA	79.4	(±6.8)	76.8	(±7.4)	86.0	(±5.4) [†]	86.1	(±5.2) [†]	81.0	(±7.2) [†]
Allen, Indiana	NA	NA	74.5	(±7.0)	79.4	(±6.5)	74.8	(±7.9)	85.5	(±5.6) [†]	NA	NA	77.7	(±8.7)
Hamilton, Indiana	80.1	(±7.7) [†]	82.8	(±6.1) [†]	87.9	(±4.3) [†]	82.4	(±6.9) [†]	87.9	(±5.0) [†]	NA	NA	84.9	(±6.5) [†]
Lake, Indiana	66.2	(±9.4)	70.9	(±7.7)	70.8	(±7.6)	74.0	(±8.1)	81.3	(±6.9) [†]	NA	NA	76.2	(±8.6)
Marion, Indiana	74.6	(±4.6)	78.8	(±3.5)	73.9	(±4.0)	74.4	(±4.2)	81.9	(±3.5) [†]	84.1	(±5.0) [†]	81.2	(±5.8) [†]
Linn, Iowa	NA	NA	80.9	(±6.5) [†]	NA	NA	79.7	(±7.0)	86.6	(±5.7) [†]	NA	NA	79.7	(±8.3)
Polk, Iowa	77.1	(±7.4)	78.3	(±5.8)	82.0	(±5.7) [†]	77.9	(±6.6)	87.9	(±4.7) [†]	83.5	(±5.1) [†]	79.1	(±6.9)
Scott, Iowa	NA	NA	NA	NA	80.0	(±6.5)	81.2	(±7.3) [†]	82.2	(±6.2) [†]	NA	NA	NA	NA
Johnson, Kansas	82.2	(±5.9) [†]	82.2	(±5.4) [†]	84.2	(±4.6) [†]	82.3	(±5.9) [†]	85.8	(±4.8) [†]	85.4	(±4.0) [†]	82.6	(±6.3) [†]
Sedgwick, Kansas	70.3	(±7.5)	78.7	(±5.9)	75.7	(±6.2)	78.7	(±6.9)	82.0	(±6.2) [†]	82.3	(±5.6) [†]	77.0	(±7.5)
Shawnee, Kansas	NA	NA	NA	NA	77.7	(±6.9)	NA	NA	NA	NA	78.1	(±7.1)	81.2	(±8.5) [†]
Fayette, Kentucky	NA	NA	82.5	(±6.0) [†]	81.9	(±6.2) [†]	NA	NA	84.3	(±5.8) [†]	NA	NA	NA	NA
Jefferson, Kentucky [§]	73.7	(±7.2)	77.6	(±5.8)	82.9	(±5.2) [†]	76.0	(±6.9)	83.0	(±5.9) [†]	82.6	(±5.6) [†]	83.3	(±6.0) [†]
Caddo, Louisiana	NA	NA	75.0	(±7.2)	72.3	(±7.6)	NA	NA	NA	NA	78.8	(±7.9)	81.4	(±7.5) [†]
East Baton Rouge, Louisiana	74.6	(±8.4)	74.9	(±7.3)	76.7	(±7.0)	74.6	(±7.8)	79.7	(±7.1)	82.5	(±6.0) [†]	85.0	(±6.6) [†]
Jefferson, Louisiana	79.9	(±6.7)	80.8	(±6.2) [†]	76.6	(±6.7)	75.0	(±7.8)	78.4	(±7.0)	79.2	(±6.7)	81.6	(±6.9) [†]
Lafayette, Louisiana	NA	NA	73.6	(±7.6)	NA	NA	NA	NA	80.4	(±6.7) [†]	NA	NA	81.8	(±7.5) [†]
Orleans, Louisiana	73.5	(±4.8)	73.2	(±4.2)	70.9	(±4.4)	64.5	(±4.9)	77.6	(±4.1)	66.8	(±9.0)	80.7	(±7.7) [†]
St. Tammany, Louisiana	NA	NA	NA	NA	NA	NA	78.0	(±7.4)	85.6	(±5.9) [†]	80.2	(±6.3) [†]	NA	NA
Androscoggin, Maine	78.9	(±7.7)	80.0	(±6.6)	80.5	(±6.4) [†]	83.2	(±6.3) [†]	86.1	(±5.8) [†]	84.1	(±6.0) [†]	81.9	(±7.3) [†]
Aroostook, Maine	NA	NA	82.1	(±6.3) [†]	81.8	(±6.4) [†]	NA	NA	84.6	(±5.9) [†]	NA	NA	NA	NA
Cumberland, Maine	82.6	(±5.2) [†]	83.4	(±4.5) [†]	81.9	(±4.8) [†]	79.3	(±5.8)	83.5	(±5.0) [†]	84.5	(±4.7) [†]	80.5	(±5.7) [†]
Kennebec, Maine	81.6	(±6.9) [†]	84.1	(±5.3) [†]	82.6	(±6.0) [†]	79.7	(±7.0)	84.7	(±6.0) [†]	NA	NA	82.0	(±7.6) [†]
Penobscot, Maine	81.1	(±6.9) [†]	80.2	(±6.2) [†]	79.0	(±6.1)	80.3	(±7.0) [†]	82.1	(±6.0) [†]	82.7	(±6.7) [†]	79.1	(±7.4)
York, Maine	83.0	(±6.0) [†]	81.9	(±5.4) [†]	82.6	(±5.3) [†]	81.3	(±5.9) [†]	84.6	(±5.2) [†]	81.6	(±5.7) [†]	79.4	(±7.5)
Anne Arundel, Maryland	78.0	(±7.4)	79.0	(±6.3)	79.7	(±6.4)	79.0	(±7.0)	87.1	(±5.1) [†]	87.6	(±4.8) [†]	82.8	(±7.3) [†]
Baltimore, Maryland	79.4	(±6.8)	79.4	(±5.7)	80.5	(±5.6) [†]	80.4	(±6.5) [†]	82.3	(±6.1) [†]	88.8	(±4.3) [†]	86.0	(±6.0) [†]
Frederick, Maryland	NA	NA	NA	NA	82.1	(±6.0) [†]	82.9	(±6.6) [†]	87.6	(±5.2) [†]	NA	NA	NA	NA
Harford, Maryland	NA	NA	NA	NA	NA	NA	NA	NA	85.4	(±5.8) [†]	NA	NA	NA	NA
Howard, Maryland	NA	NA	86.4	(±5.3) [†]	81.9	(±6.3) [†]	83.0	(±6.6) [†]	87.0	(±5.2) [†]	NA	NA	86.5	(±6.3) [†]
Montgomery, Maryland [§]	80.0	(±6.3)	84.5	(±4.6) [†]	79.9	(±5.3)	82.7	(±5.2) [†]	86.1	(±4.6) [†]	89.5	(±3.8) [†]	88.6	(±4.8) [†]
Prince George's, Maryland [§]	68.6	(±8.3)	72.0	(±6.8)	74.0	(±6.6)	69.7	(±8.3)	75.3	(±7.9)	80.4	(±6.1) [†]	85.3	(±5.6) [†]
City of Baltimore, Maryland [§]	NA	NA	NA	NA	70.8	(±4.1)	73.0	(±4.2)	81.1	(±3.9) [†]	79.1	(±4.2)	83.6	(±5.0) [†]
Bristol, Massachusetts	80.1	(±7.5) [†]	79.6	(±6.3)	81.9	(±6.0) [†]	82.3	(±6.7) [†]	86.7	(±5.1) [†]	85.8	(±5.2) [†]	NA	NA
Essex, Massachusetts	81.1	(±6.6) [†]	81.0	(±5.8) [†]	80.5	(±5.8) [†]	84.4	(±5.7) [†]	84.5	(±5.8) [†]	83.3	(±5.9) [†]	81.7	(±7.8) [†]
Hampden, Massachusetts	80.0	(±6.9)	79.6	(±6.5)	79.9	(±6.3)	78.0	(±7.7)	85.9	(±5.8) [†]	NA	NA	NA	NA
Middlesex, Massachusetts	83.1	(±5.0) [†]	85.0	(±4.3) [†]	82.5	(±5.0) [†]	83.1	(±5.1) [†]	89.4	(±3.8) [†]	91.5	(±3.1) [†]	84.9	(±5.6) [†]
Norfolk, Massachusetts	84.2	(±5.8) [†]	86.1	(±5.0) [†]	81.4	(±5.9) [†]	84.4	(±5.7) [†]	89.8	(±4.5) [†]	89.4	(±4.1) [†]	84.6	(±6.6) [†]
Plymouth, Massachusetts	79.3	(±7.4)	81.9	(±6.2) [†]	83.2	(±5.9) [†]	81.6	(±6.7) [†]	87.3	(±5.0) [†]	NA	NA	81.6	(±7.9) [†]
Suffolk, Massachusetts	82.0	(±4.9) [†]	86.1	(±3.1) [†]	82.0	(±3.4) [†]	82.6	(±3.6) [†]	86.4	(±3.6) [†]	85.4	(±5.2) [†]	87.6	(±6.3) [†]
Worcester, Massachusetts	81.9	(±6.3) [†]	81.1	(±5.9) [†]	81.5	(±5.7) [†]	84.0	(±5.5) [†]	86.6	(±4.9) [†]	86.6	(±4.9) [†]	82.5	(±6.8) [†]
Kent, Michigan	78.2	(±8.1)	78.9	(±7.0)	79.6	(±6.6)	80.7	(±7.3) [†]	85.0	(±6.0) [†]	NA	NA	79.6	(±7.3)
Macomb, Michigan	78.1	(±7.5)	78.2	(±6.7)	80.2	(±6.2) [†]	77.6	(±7.2)	86.6	(±5.3) [†]	84.7	(±5.5) [†]	NA	NA
Oakland, Michigan	80.1	(±6.5) [†]	83.5	(±5.2) [†]	82.8	(±5.5) [†]	82.1	(±6.2) [†]	85.7	(±5.1) [†]	84.9	(±5.0) [†]	82.5	(±6.9) [†]
Wayne, Michigan	69.6	(±5.0)	67.6	(±4.8)	68.6	(±5.2)	69.6	(±5.4)	78.2	(±5.3)	76.1	(±5.4)	75.4	(±7.2)
Anoka, Minnesota	77.6	(±7.9)	80.3	(±6.9) [†]	82.5	(±6.1) [†]	84.1	(±6.5) [†]	NA	NA	NA	NA	80.5	(±7.8) [†]
Dakota, Minnesota	81.7	(±6.7) [†]	78.6	(±6.6)	81.3	(±6.2) [†]	81.2	(±6.9) [†]	86.9	(±5.2) [†]	85.4	(±5.4) [†]	82.2	(±7.3) [†]
Hennepin, Minnesota	79.6	(±5.8)	80.9	(±4.9) [†]	84.6	(±4.7) [†]	78.8	(±6.5)	86.1	(±5.1) [†]	88.6	(±4.2) [†]	80.7	(±5.6) [†]
Ramsey, Minnesota	80.2	(±6.7) [†]	78.3	(±6.6)	80.1	(±6.2) [†]	77.0	(±7.5)	84.5	(±6.0) [†]	86.9	(±4.9) [†]	83.6	(±6.9) [†]
Washington, Minnesota	NA	NA	78.6	(±7.1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Harrison, Mississippi	NA	NA	76.0	(±7.0)	NA	NA	NA	NA	NA	NA	78.1	(±7.1)	NA	NA
Hinds, Mississippi	73.6	(±8.2)	73.7	(±7.3)	72.5	(±7.5)	75.5	(±8.4)	NA	NA	74.2	(±8.2)	76.0	(±8.7)
Greene, Missouri	NA	NA	NA	NA	NA	NA	79.7	(±7.5)	NA	NA	NA	NA	NA	NA
Jackson, Missouri	70.8	(±8.2)	77.5	(±6.8)	77.0	(±6.9)	83.1	(±6.4) [†]	84.0	(±5.6) [†]	84.3	(±5.5) [†]	77.3	(±7.3)
Jefferson, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	79.5	(±8.4)
St. Charles, Missouri	NA	NA	80.3	(±6.7) [†]	NA	NA	NA	NA	NA	NA	NA	NA	83.5	(±6.7) [†]
St. Louis, Missouri	76.6	(±6.8)	81.0	(±5.6) [†]	80.6	(±5.5) [†]	84.0	(±5.7) [†]	88.2	(±4.6) [†]	86.9	(±3.9) [†]	84.6	(±6.3) [†]
City of St. Louis, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	80.0	(±8.1)
Cascade, Montana	70.8	(±8.1)	81.1	(±5.5) [†]	81.5	(±5.9) [†]	79.6	(±6.9)	86.3	(±5.4) [†]	83.0	(±5.8) [†]	78.3	(±7.8)
Flathead, Montana	74.5	(±8.0)	75.2	(±7.0)	79.7	(±6.5)	69.0	(±7.5)	79.1	(±6.8)	69.1	(±8.3)	73.6	(±8.5)
Gallatin, Montana	75.5	(±7.5)	77.0	(±6.9)	76.1	(±6.9)	77.0	(±7.6)	81.0	(±6.6) [†]	83.6	(±5.7) [†]	77.4	(±7.7)
Lewis and Clark, Montana	NA	NA	80.5	(±6.0) [†]	79.4	(±6.7)	81.5	(±7.0) [†]	NA	NA	NA	NA	80.6	(±7.9) [†]
Missoula, Montana	80.8	(±6.5) [†]	77.1	(±6.4)	81.1	(±6.4) [†]	80.7	(±6.6) [†]	79.6	(±6.5)	77.8	(±6.2)	70.0	(±9.0)
Yellowstone, Montana	72.0	(±7.1)	80.1	(±5.6) [†]	77.0	(±6.2)	79.1	(±6.2)	83.5	(±5.2) [†]	84.6	(±4.9) [†]	76.1	(±8.0)
Douglas, Nebraska [§]	77.2	(±5.8)	76.4	(±5.2)	82.8	(±4.6) [†]	80.3	(±5.3) [†]	83.0	(±4.7) [†]	85.4	(±4.3) [†]	84.9	(±4.2) [†]
Lancaster, Nebraska	76.7	(±6.9)	76.8	(±5.8)	80.6	(±5.5) [†]	79.9	(±6.4)	85.6	(±5.2) [†]	86.7	(±5.0) [†]	82.0	(±6.7) [†]
Sarpy, Nebraska [§]	75.6	(±8.0)	75.8	(±6.9)	78.8	(±6.6)	81.0	(±7.0) [†]	86.1	(±5.6) [†]	NA	NA	NA	NA
Clark, Nevada	68.3	(±5.2)	72.1	(±4.5)	71.3	(±4.2)	71.9	(±4.7)	71.6	(±4.5)	69.8	(±4.8)	68.9	(±5.4)

See table footnotes on page 73.

TABLE 19. (Continued) Estimated vaccination coverage for the 4:3:1:3 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Washoe, Nevada	75.9	(±7.0)	79.9	(±5.5)	80.9	(±5.2) [†]	81.1	(±6.4) [†]	86.5	(±5.0) [†]	82.8	(±5.4) [†]	82.9	(±6.3) [†]
Grafton, New Hampshire	NA	NA	81.8	(±5.9) [†]	82.5	(±5.9) [†]	80.2	(±7.4) [†]	87.3	(±5.3) [†]	NA	NA	89.3	(±5.4) [†]
Hillsborough, New Hampshire	84.7	(±4.4) [†]	82.8	(±4.2) [†]	82.1	(±4.8) [†]	83.0	(±4.8) [†]	88.3	(±3.8) [†]	86.2	(±4.0) [†]	84.9	(±4.9) [†]
Merrimack, New Hampshire	82.2	(±6.3) [†]	82.3	(±5.5) [†]	83.1	(±5.8) [†]	82.0	(±6.0) [†]	85.1	(±5.2) [†]	84.5	(±5.8) [†]	84.1	(±7.3) [†]
Rockingham, New Hampshire	81.9	(±5.7) [†]	83.1	(±4.7) [†]	83.4	(±4.5) [†]	86.5	(±4.6) [†]	88.2	(±4.5) [†]	84.3	(±4.8) [†]	85.2	(±5.8) [†]
Strafford, New Hampshire	79.1	(±7.1)	81.2	(±6.3) [†]	79.8	(±6.3)	81.1	(±6.7) [†]	86.3	(±5.5) [†]	85.8	(±5.3) [†]	81.9	(±7.7) [†]
Bergen, New Jersey	82.1	(±6.6) [†]	86.0	(±5.0) [†]	82.5	(±5.5) [†]	84.6	(±6.2) [†]	86.9	(±5.3) [†]	86.6	(±5.2) [†]	86.2	(±6.7) [†]
Burlington, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	81.7	(±7.7) [†]
Camden, New Jersey	NA	NA	78.0	(±7.1)	76.2	(±7.2)	79.9	(±7.1)	NA	NA	82.5	(±6.2) [†]	84.3	(±7.0) [†]
Essex, New Jersey	77.5	(±6.5)	76.3	(±6.0)	74.8	(±6.0)	68.1	(±8.8)	76.0	(±6.6)	78.9	(±6.1)	75.0	(±7.2)
Hudson, New Jersey	73.0	(±8.9)	77.1	(±7.0)	69.3	(±8.4)	66.8	(±9.9)	76.6	(±7.4)	NA	NA	75.4	(±8.6)
Middlesex, New Jersey	NA	NA	81.0	(±6.2) [†]	77.8	(±6.9)	78.7	(±6.9)	84.6	(±5.9) [†]	85.1	(±5.5) [†]	79.0	(±8.0)
Monmouth, New Jersey	NA	NA	80.1	(±6.5) [†]	82.6	(±5.5) [†]	76.5	(±7.6)	NA	NA	85.8	(±5.3) [†]	80.9	(±7.3) [†]
Morris, New Jersey	77.7	(±7.6)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ocean, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	79.3	(±7.2)	78.8	(±6.5)	79.8	(±7.7)
Passaic, New Jersey	NA	NA	NA	NA	75.2	(±7.3)	74.6	(±8.2)	79.3	(±7.0)	NA	NA	NA	NA
Union, New Jersey	NA	NA	76.6	(±7.4)	78.6	(±6.6)	81.5	(±7.1) [†]	82.6	(±6.1) [†]	NA	NA	81.2	(±7.8) [†]
Bernalillo, New Mexico	71.8	(±7.1)	73.8	(±5.8)	72.6	(±6.2)	69.4	(±6.3)	82.8	(±5.4) [†]	75.9	(±6.0)	81.1	(±6.3) [†]
Dona Ana, New Mexico	76.8	(±7.4)	76.2	(±6.7)	70.0	(±7.9)	67.8	(±9.4)	80.0	(±7.1)	NA	NA	80.1	(±6.8) [†]
Sandoval, New Mexico	NA	NA	NA	NA	NA	NA	NA	NA	80.5	(±8.2) [†]	NA	NA	76.5	(±9.3)
San Juan, New Mexico	NA	NA	NA	NA	72.0	(±8.0)	69.2	(±8.9)	88.4	(±7.2) [†]	73.3	(±8.1)	77.8	(±8.5)
Santa Fe, New Mexico	81.0	(±7.1) [†]	NA	NA	69.4	(±8.2)	NA	NA	80.0	(±7.0)	NA	NA	NA	NA
Bronx, New York [§]	66.5	(±9.4)	69.2	(±7.7)	66.0	(±8.0)	71.0	(±7.9)	70.9	(±7.8)	71.6	(±8.0)	81.5	(±6.3) [†]
Erie, New York	80.3	(±7.1) [†]	81.4	(±6.4) [†]	81.5	(±6.0) [†]	78.8	(±7.4)	81.5	(±7.1) [†]	82.6	(±6.0) [†]	NA	NA
Kings, New York	73.6	(±7.4)	74.3	(±6.1)	70.2	(±5.8)	74.2	(±6.5)	73.3	(±6.4)	77.1	(±5.5)	76.8	(±5.1)
Monroe, New York	NA	NA	80.0	(±6.3)	80.1	(±6.3) [†]	79.2	(±7.5)	86.4	(±5.4) [†]	87.5	(±4.5) [†]	85.3	(±6.3) [†]
Nassau, New York	84.9	(±6.4) [†]	85.7	(±4.9) [†]	79.1	(±5.7)	80.6	(±6.6) [†]	82.3	(±6.1) [†]	87.7	(±5.0) [†]	86.8	(±5.3) [†]
New York, New York	80.7	(±7.2) [†]	81.9	(±6.0) [†]	83.4	(±5.9) [†]	83.9	(±6.7) [†]	89.5	(±4.8) [†]	85.0	(±5.2) [†]	81.7	(±5.9) [†]
Queens, New York	76.0	(±6.9)	78.8	(±5.4)	71.3	(±6.1)	75.7	(±6.5)	80.3	(±6.0) [†]	83.8	(±5.2) [†]	84.1	(±5.3) [†]
Suffolk, New York	79.6	(±6.4)	83.2	(±5.3) [†]	78.4	(±5.7)	81.2	(±6.3) [†]	83.4	(±6.5) [†]	83.2	(±5.5) [†]	76.7	(±7.2)
Westchester, New York	NA	NA	85.4	(±5.2) [†]	81.9	(±6.2) [†]	84.2	(±6.3) [†]	85.2	(±6.0) [†]	87.8	(±5.0) [†]	NA	NA
Durham, North Carolina	NA	NA	NA	NA	NA	NA	NA	NA	77.9	(±7.9)	NA	NA	NA	NA
Guilford, North Carolina	NA	NA	77.7	(±6.9)	79.8	(±6.5)	NA	NA	NA	NA	NA	NA	NA	NA
Mecklenburg, North Carolina	78.1	(±7.1)	78.7	(±6.5)	79.0	(±6.7)	79.3	(±7.3)	86.2	(±5.5) [†]	86.7	(±5.1) [†]	80.3	(±7.6) [†]
Wake, North Carolina	80.3	(±6.7) [†]	80.9	(±6.2) [†]	78.9	(±6.4)	83.5	(±6.4) [†]	85.9	(±5.7) [†]	89.1	(±4.3) [†]	85.5	(±5.6) [†]
Burleigh, North Dakota	77.9	(±6.9)	80.7	(±5.8) [†]	78.8	(±5.9)	81.1	(±7.0) [†]	85.3	(±5.3) [†]	84.9	(±5.4) [†]	77.3	(±7.1)
Cass, North Dakota	79.8	(±5.7)	78.2	(±5.4)	79.7	(±5.3)	81.8	(±5.8) [†]	86.2	(±4.6) [†]	87.0	(±4.2) [†]	83.9	(±6.0) [†]
Grand Forks, North Dakota	73.1	(±7.9)	78.5	(±6.3)	80.7	(±5.9) [†]	77.8	(±6.9)	85.7	(±5.4) [†]	87.0	(±5.3) [†]	80.9	(±7.7) [†]
Ward, North Dakota	80.7	(±6.7) [†]	77.0	(±6.6)	79.8	(±5.8)	81.0	(±6.7) [†]	83.7	(±5.8) [†]	83.0	(±6.0) [†]	77.7	(±7.7)
Cuyahoga, Ohio [§]	76.4	(±4.2)	74.3	(±3.8)	73.5	(±3.8)	74.4	(±4.4)	82.5	(±3.7) [†]	86.0	(±3.1) [†]	85.1	(±5.9) [†]
Franklin, Ohio	76.9	(±4.0)	75.8	(±3.7)	78.3	(±3.3)	80.5	(±3.5) [†]	85.4	(±3.1) [†]	85.0	(±5.1) [†]	77.9	(±8.0)
Hamilton, Ohio	77.8	(±7.1)	79.6	(±6.2)	78.7	(±6.5)	83.8	(±6.2) [†]	83.0	(±6.0) [†]	85.6	(±5.2) [†]	85.6	(±6.4) [†]
Lucas, Ohio	NA	NA	77.4	(±6.9)	NA	NA	78.2	(±7.5)	NA	NA	NA	NA	NA	NA
Montgomery, Ohio	NA	NA	NA	NA	NA	NA	78.8	(±7.1)	NA	NA	NA	NA	NA	NA
Cleveland, Oklahoma	NA	NA	77.2	(±7.2)	NA	NA	81.3	(±7.1) [†]	82.1	(±6.6) [†]	85.3	(±5.5) [†]	80.4	(±7.9) [†]
Oklahoma, Oklahoma	75.2	(±7.3)	72.0	(±6.7)	76.7	(±5.8)	73.0	(±7.0)	72.5	(±7.7)	79.4	(±5.8)	79.6	(±7.1)
Tulsa, Oklahoma	70.7	(±7.4)	77.0	(±5.9)	76.8	(±6.2)	78.4	(±7.2)	77.0	(±7.9)	80.0	(±5.9)	75.9	(±7.5)
Clackamas, Oregon	80.6	(±6.6) [†]	74.0	(±6.7)	82.5	(±5.6) [†]	79.8	(±7.0)	83.6	(±6.3) [†]	NA	NA	75.7	(±8.8)
Lane, Oregon	76.6	(±7.4)	79.1	(±6.6)	79.2	(±6.7)	69.2	(±8.4)	79.3	(±7.1)	77.8	(±6.8)	77.5	(±8.5)
Marion, Oregon	77.1	(±7.8)	77.9	(±6.4)	75.9	(±6.5)	76.3	(±7.6)	80.4	(±6.6) [†]	79.3	(±6.8)	77.4	(±8.8)
Multnomah, Oregon	78.0	(±6.0)	76.0	(±5.9)	78.4	(±5.7)	76.7	(±6.2)	79.5	(±6.1)	81.8	(±5.6) [†]	73.9	(±7.6)
Washington, Oregon [§]	71.2	(±7.4)	79.2	(±6.0)	76.1	(±6.2)	80.7	(±6.3) [†]	81.2	(±5.4) [†]	82.7	(±5.6) [†]	84.1	(±6.9) [†]
Allegheny, Pennsylvania	81.4	(±6.2) [†]	79.2	(±5.9)	81.9	(±5.9) [†]	86.0	(±5.6) [†]	86.8	(±5.1) [†]	84.4	(±5.1) [†]	83.4	(±6.4) [†]
Delaware, Pennsylvania	NA	NA	80.8	(±6.3) [†]	NA	NA	NA	NA	87.1	(±5.4) [†]	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	77.0	(±8.8)
Montgomery, Pennsylvania	83.5	(±6.1) [†]	86.2	(±5.0) [†]	80.8	(±6.2) [†]	NA	NA	89.5	(±4.6) [†]	NA	NA	86.2	(±6.3) [†]
Philadelphia, Pennsylvania [§]	71.7	(±4.8)	78.7	(±3.5)	76.1	(±3.6)	73.3	(±3.9)	79.9	(±3.6)	79.9	(±3.8)	83.1	(±3.6) [†]
Kent, Rhode Island	79.7	(±6.4)	82.1	(±5.1) [†]	84.5	(±5.2) [†]	83.5	(±5.5) [†]	85.3	(±5.1) [†]	86.5	(±4.4) [†]	79.7	(±6.9)
Newport, Rhode Island	78.2	(±7.4)	78.4	(±6.5)	76.3	(±6.8)	81.6	(±6.5) [†]	NA	NA	84.7	(±5.4) [†]	NA	NA
Providence, Rhode Island	82.6	(±4.0) [†]	83.3	(±3.5) [†]	83.3	(±3.8) [†]	83.9	(±4.0) [†]	86.1	(±3.7) [†]	81.8	(±3.8) [†]	81.1	(±4.8) [†]
Washington, Rhode Island	82.5	(±6.4) [†]	81.3	(±5.8) [†]	82.2	(±5.2) [†]	84.2	(±5.8) [†]	86.9	(±4.9) [†]	90.6	(±3.9) [†]	82.7	(±6.8) [†]
Charleston, South Carolina	79.3	(±7.7)	78.7	(±6.4)	78.1	(±6.9)	77.2	(±8.2)	77.3	(±7.8)	82.8	(±6.5) [†]	79.9	(±7.7)
Greenville, South Carolina	80.0	(±7.4)	79.3	(±6.2)	79.5	(±6.1)	81.1	(±7.0) [†]	85.9	(±5.7) [†]	81.3	(±6.3) [†]	77.4	(±7.7)
Horry, South Carolina	NA	NA	NA	NA	NA	NA	80.7	(±7.2) [†]	NA	NA	NA	NA	80.6	(±8.4) [†]
Richland, South Carolina	NA	NA	78.1	(±7.2)	76.3	(±7.2)	79.6	(±7.9)	NA	NA	87.1	(±5.1) [†]	81.5	(±7.2) [†]
Spartanburg, South Carolina	73.4	(±8.4)	76.1	(±7.3)	80.4	(±6.7) [†]	NA	NA	NA	NA	82.6	(±6.2) [†]	81.1	(±7.6) [†]
York, South Carolina	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	79.5	(±7.4)
Minnehaha, South Dakota	78.2	(±6.2)	76.4	(±5.8)	77.3	(±5.7)	76.9	(±6.6)	87.1	(±4.7) [†]	82.5	(±5.2) [†]	83.9	(±5.8) [†]

See table footnotes on page 73.

TABLE 19. (Continued) Estimated vaccination coverage for the 4:3:1:3 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Pennington, South Dakota	79.6	(±7.2)	79.6	(±6.1)	81.6	(±5.9) [†]	79.1	(±7.9)	88.2	(±4.9) [†]	82.1	(±5.8) [†]	77.6	(±8.5)
Davidson, Tennessee [§]	76.6	(±3.9)	78.5	(±3.4)	74.1	(±3.8)	80.6	(±3.6) [†]	86.2	(±3.0) [†]	83.4	(±5.0) [†]	85.0	(±6.0) [†]
Hamilton, Tennessee	NA	NA	79.2	(±6.3)	76.4	(±6.9)	79.7	(±7.9)	NA	NA	NA	NA	NA	NA
Knox, Tennessee	79.8	(±7.1)	81.4	(±5.6) [†]	78.7	(±6.4)	78.8	(±7.4)	84.5	(±5.4) [†]	85.1	(±5.9) [†]	85.6	(±6.8) [†]
Shelby, Tennessee [§]	70.8	(±4.3)	71.3	(±4.0)	75.7	(±3.7)	74.0	(±4.1)	77.0	(±3.9)	76.5	(±4.2)	80.5	(±6.8) [†]
Bexar, Texas [§]	74.1	(±4.3)	78.1	(±3.6)	68.7	(±4.2)	75.8	(±3.7)	77.7	(±4.2)	77.5	(±4.2)	80.5	(±3.7) [†]
Collin, Texas [¶]	NA	NA	NA	NA	NA	NA	95.2	(±1.7) [†]	NA	NA	86.3	(±5.3) [†]	NA	NA
Dallas, Texas [§]	69.4	(±4.7)	73.4	(±3.9)	70.6	(±4.0)	71.4	(±3.7)	74.9	(±3.8)	77.3	(±4.2)	77.9	(±3.7)
El Paso, Texas [§]	68.5	(±4.5)	70.9	(±3.7)	70.8	(±4.1)	70.9	(±4.2)	76.5	(±3.9)	74.4	(±3.9)	78.4	(±3.6)
Harris, Texas [§]	69.7	(±4.8)	66.8	(±4.5)	68.1	(±4.3)	71.0	(±4.7)	71.7	(±4.4)	77.6	(±4.4)	78.6	(±5.7)
Hidalgo, Texas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	71.6	(±9.9)	NA	NA
Tarrant, Texas	75.8	(±7.8)	72.5	(±7.3)	74.9	(±7.1)	76.8	(±7.7)	81.1	(±6.4) [†]	81.9	(±5.8) [†]	77.2	(±8.4)
Travis, Texas	NA	NA	NA	NA	75.8	(±7.5)	NA	NA	82.6	(±6.7) [†]	80.2	(±6.4) [†]	NA	NA
Cache, Utah	NA	NA	77.3	(±6.9)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Davis, Utah	71.2	(±7.9)	78.4	(±6.5)	77.4	(±6.4)	80.3	(±6.6) [†]	81.9	(±6.1) [†]	81.7	(±6.1) [†]	80.9	(±7.1) [†]
Salt Lake, Utah [§]	68.6	(±5.7)	75.3	(±5.2)	78.8	(±4.8)	77.5	(±5.5)	79.5	(±5.3)	81.5	(±5.6) [†]	80.3	(±6.1) [†]
Utah, Utah	68.5	(±7.2)	73.0	(±6.0)	78.3	(±5.7)	79.5	(±5.8)	81.0	(±5.5) [†]	80.1	(±6.2) [†]	77.2	(±6.9)
Weber, Utah [§]	72.3	(±8.1)	78.1	(±6.3)	78.8	(±6.5)	77.2	(±7.9)	83.0	(±6.1) [†]	NA	NA	NA	NA
Addison, Vermont	84.9	(±6.1) [†]	86.4	(±5.3) [†]	NA	NA	81.5	(±6.7) [†]	86.1	(±5.5) [†]	NA	NA	NA	NA
Bennington, Vermont	NA	NA	82.3	(±6.2) [†]	82.4	(±6.1) [†]	NA	NA	NA	NA	NA	NA	NA	NA
Chittenden, Vermont	85.6	(±4.9) [†]	84.9	(±4.5) [†]	84.1	(±4.9) [†]	83.7	(±4.9) [†]	89.1	(±3.8) [†]	91.6	(±3.3) [†]	80.7	(±5.9) [†]
Franklin, Vermont	81.0	(±6.9) [†]	83.8	(±5.6) [†]	82.0	(±5.9) [†]	82.9	(±6.6) [†]	85.9	(±5.4) [†]	NA	NA	83.1	(±7.0) [†]
Lamoille, Vermont	NA	NA	NA	NA	NA	NA	NA	NA	83.5	(±6.6) [†]	NA	NA	NA	NA
Orange, Vermont	82.0	(±7.3) [†]	81.0	(±5.9) [†]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rutland, Vermont	75.6	(±7.4)	80.8	(±6.1) [†]	81.5	(±5.7) [†]	83.4	(±6.6) [†]	84.5	(±5.7) [†]	NA	NA	NA	NA
Washington, Vermont	80.6	(±7.3) [†]	81.9	(±5.7) [†]	81.8	(±6.4) [†]	84.8	(±6.3) [†]	87.1	(±4.9) [†]	84.7	(±5.7) [†]	77.9	(±7.9)
Windham, Vermont	NA	NA	82.1	(±6.1) [†]	83.1	(±5.7) [†]	79.9	(±7.2)	NA	NA	NA	NA	79.8	(±7.6)
Windsor, Vermont	81.3	(±6.7) [†]	80.6	(±6.2) [†]	80.8	(±6.0) [†]	82.4	(±6.4) [†]	87.0	(±5.3) [†]	77.6	(±9.2)	NA	NA
Fairfax, Virginia	79.0	(±6.4)	78.4	(±5.8)	77.4	(±6.2)	79.2	(±6.8)	87.6	(±4.6) [†]	88.2	(±4.1) [†]	86.1	(±5.3) [†]
Loudoun, Virginia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	81.7	(±7.6) [†]
Virginia Beach, Virginia	NA	NA	72.4	(±7.6)	76.5	(±7.0)	NA	NA	NA	NA	NA	NA	77.7	(±8.4)
Clark, Washington	80.4	(±7.4) [†]	78.4	(±6.6)	75.3	(±6.8)	78.7	(±7.4)	81.9	(±6.7) [†]	82.2	(±6.4) [†]	NA	NA
King, Washington	82.1	(±3.2) [†]	82.4	(±3.1) [†]	76.8	(±3.4)	75.3	(±3.6)	84.4	(±3.0) [†]	82.7	(±3.9) [†]	81.5	(±5.5) [†]
Kitsap, Washington	NA	NA	NA	NA	80.4	(±6.4) [†]	NA	NA	76.4	(±7.6)	NA	NA	78.2	(±7.8)
Pierce, Washington	73.7	(±7.7)	79.3	(±6.1)	75.5	(±5.8)	75.0	(±7.3)	79.1	(±6.6)	83.9	(±5.7) [†]	76.7	(±8.1)
Snohomish, Washington	75.5	(±7.5)	77.4	(±6.1)	78.2	(±5.8)	77.3	(±6.7)	82.5	(±5.8) [†]	80.1	(±6.2) [†]	79.6	(±8.2)
Spokane, Washington	77.4	(±7.7)	80.0	(±6.1)	80.7	(±5.9) [†]	72.7	(±8.0)	80.2	(±6.8) [†]	NA	NA	78.0	(±7.7)
Thurston, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	78.1	(±7.3)
Whatcom, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	83.7	(±6.7) [†]
Yakima, Washington	74.3	(±8.5)	74.8	(±7.4)	NA	NA	73.9	(±9.5)	NA	NA	NA	NA	NA	NA
Kanawha, West Virginia	77.5	(±6.7)	82.5	(±5.5) [†]	81.1	(±5.8) [†]	NA	NA	86.3	(±5.4) [†]	76.6	(±7.1)	81.5	(±7.1) [†]
Brown, Wisconsin	NA	NA	NA	NA	NA	NA	81.3	(±7.2) [†]	NA	NA	NA	NA	NA	NA
Dane, Wisconsin	82.7	(±6.2) [†]	84.0	(±5.6) [†]	80.2	(±6.1) [†]	80.8	(±6.9) [†]	85.9	(±5.3) [†]	89.4	(±4.2) [†]	82.0	(±7.7) [†]
Milwaukee, Wisconsin [§]	69.3	(±4.3)	72.5	(±3.7)	72.5	(±4.0)	70.4	(±4.6)	80.6	(±3.7) [†]	80.1	(±4.5) [†]	80.9	(±6.3) [†]
Outagamie, Wisconsin	NA	NA	79.2	(±6.7)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Waukesha, Wisconsin [§]	79.6	(±6.7)	81.7	(±5.7) [†]	82.4	(±5.6) [†]	83.3	(±6.3) [†]	86.5	(±5.0) [†]	87.9	(±4.6) [†]	NA	NA
Albany, Wyoming	NA	NA	76.3	(±6.7)	80.3	(±6.5) [†]	NA	NA	82.4	(±6.6) [†]	NA	NA	NA	NA
Campbell, Wyoming	NA	NA	79.3	(±6.5)	79.2	(±6.3)	82.1	(±6.5) [†]	82.2	(±5.8) [†]	82.7	(±5.9) [†]	82.5	(±7.0) [†]
Fremont, Wyoming [§]	NA	NA	76.1	(±7.3)	75.0	(±7.1)	74.8	(±8.6)	91.1	(±5.5) [†]	NA	NA	NA	NA
Laramie, Wyoming	75.2	(±7.0)	77.4	(±5.9)	80.4	(±5.7) [†]	77.1	(±7.1)	84.4	(±5.1) [†]	83.9	(±5.3) [†]	68.2	(±8.3)
Natrona, Wyoming	75.9	(±7.3)	80.7	(±5.5) [†]	79.9	(±5.6)	79.7	(±6.5)	84.6	(±5.3) [†]	78.8	(±6.5)	76.8	(±7.9)
Sweetwater, Wyoming	77.0	(±7.3)	70.8	(±7.3)	79.5	(±6.2)	79.5	(±7.3)	NA	NA	79.0	(±6.7)	73.5	(±8.2)
Uinta, Wyoming	NA	NA	NA	NA	79.7	(±6.5)	NA	NA	NA	NA	NA	NA	NA	NA
United States[§]	75.3	(±0.8)	77.5	(±0.6)	77.0	(±0.7)	77.2	(±0.7)	82.2	(±0.6)[†]	82.3	(±0.7)[†]	80.7	(±0.7)[†]
Sample size, no.	37,282		44,855		45,623		45,052		43,308		38,607		35,447	
All selected counties	75.1	(±1.0)	76.9	(±0.8)	76.3	(±0.8)	77.0	(±0.8)	81.8	(±0.8)[†]	82.4	(±0.8)[†]	80.9	(±0.9)[†]
Sample size, no.	23,014		29,227		30,362		29,851		28,845		23,485		20,552	
Range, %	66.2–85.6		66.2–86.4		66–87.9		64.5–95.2		70.9–91.1		66.8–91.6		68.2–89.3	

Abbreviations: CI = confidence interval; DTaP = diphtheria and tetanus toxoids and acellular pertussis; DTP = diphtheria and tetanus toxoids and pertussis; Hib = *Haemophilus influenzae* type B; MMR = measles, mumps, and rubella; NA = not available.

* ≥4 doses DTaP/DTP vaccine, ≥3 doses of polio vaccine, ≥1 dose of MMR vaccine, and ≥3 doses of Hib vaccine.

[†] Estimate exceeds the *Healthy People 2010* objective of 90% vaccination coverage.

[§] Estimates increased significantly between the first and last biennial periods ($p < 0.05$).

[¶] Estimates decreased significantly between the first and last biennial periods ($p < 0.05$).

TABLE 20. Estimated vaccination coverage for the 4:3:1:3:3 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Jefferson, Alabama†	61.2	(±4.5)	75.4	(±3.5)	76.8	(±3.7)	77.3	(±3.8)	81.2	(±4.1) [§]	85.2	(±4.6) [§]	81.3	(±6.7) [§]
Madison, Alabama†	NA	NA	65.3	(±8.4)	73.1	(±7.5)	NA	NA	82.0	(±6.3) [§]	82.0	(±6.2) [§]	83.2	(±6.9) [§]
Mobile, Alabama†	48.8	(±10.0) [¶]	71.6	(±7.4)	69.1	(±7.9)	75.8	(±7.3)	76.6	(±7.7)	75.9	(±7.4)	77.5	(±8.2)
Montgomery, Alabama	NA	NA	65.8	(±8.9)	72.5	(±8.6)	NA	NA	NA	NA	NA	NA	NA	NA
Shelby, Alabama	NA	NA	NA	NA	77.3	(±7.1)	77.9	(±7.5)	84.0	(±6.2) [§]	NA	NA	83.8	(±6.9) [§]
Anchorage, Alaska†	NA	NA	NA	NA	71.4	(±5.0)	73.4	(±5.3)	77.7	(±5.2)	78.8	(±5.4)	79.7	(±5.8)
Fairbanks North Star, Alaska	NA	NA	NA	NA	70.1	(±7.1)	69.7	(±7.2)	72.9	(±7.1)	78.8	(±6.2)	76.3	(±7.7)
Kenai Peninsula, Alaska	NA	NA	NA	NA	73.0	(±7.6)	NA	NA	NA	NA	NA	NA	NA	NA
Matanuska-Susitna, Alaska	NA	NA	NA	NA	72.2	(±7.5)	68.8	(±8.6)	80.9	(±6.3) [§]	73.4	(±7.4)	70.5	(±8.2)
Cochise, Arizona	NA	NA	65.2	(±8.7)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Coconino, Arizona†	NA	NA	58.9	(±8.5)	NA	NA	NA	NA	85.8	(±9.3) [§]	NA	NA	NA	NA
Maricopa, Arizona†	58.6	(±5.0)	65.9	(±4.1)	66.2	(±4.1)	69.5	(±4.0)	78.6	(±3.5)	76.0	(±3.9)	77.7	(±5.1)
Mohave, Arizona	NA	NA	NA	NA	65.2	(±8.7)	66.3	(±9.1)	NA	NA	NA	NA	NA	NA
Pima, Arizona†	56.7	(±6.8)	68.7	(±5.5)	74.4	(±5.4)	68.4	(±5.7)	76.3	(±5.5)	77.0	(±5.7)	77.6	(±7.2)
Pinal, Arizona†	53.0	(±10.5) [¶]	63.1	(±9.0)	68.9	(±8.7)	65.2	(±8.5)	74.0	(±8.2)	76.1	(±8.3)	NA	NA
Yavapai, Arizona	NA	NA	NA	NA	NA	NA	65.8	(±9.2)	77.1	(±7.2)	NA	NA	NA	NA
Yuma, Arizona†	59.0	(±10.7) [¶]	69.3	(±8.0)	64.3	(±8.4)	63.1	(±8.9)	79.6	(±6.8)	76.2	(±8.2)	NA	NA
Benton, Arkansas	NA	NA	70.8	(±7.9)	NA	NA	69.4	(±8.4)	83.2	(±5.9) [§]	75.5	(±7.4)	80.3	(±7.1) [§]
Pulaski, Arkansas†	56.3	(±9.5)	71.7	(±6.9)	65.6	(±7.6)	71.6	(±7.4)	80.7	(±6.6) [§]	78.9	(±7.0)	79.7	(±7.2)
Washington, Arkansas†	54.6	(±10.8) [¶]	65.2	(±8.3)	NA	NA	66.5	(±8.9)	NA	NA	NA	NA	75.8	(±7.9)
Alameda, California†	61.4	(±10.0) [¶]	NA	NA	70.1	(±8.0)	79.1	(±7.1)	80.4	(±6.5) [§]	80.6	(±4.9) [§]	80.9	(±6.5) [§]
Los Angeles, California†	64.4	(±5.2)	67.3	(±4.3)	70.2	(±4.1)	72.6	(±4.1)	79.4	(±3.5)	80.2	(±3.6) [§]	79.2	(±3.5)
Orange, California†	64.2	(±8.9)	72.3	(±7.0)	68.1	(±7.4)	73.5	(±7.3)	80.6	(±6.0) [§]	79.8	(±6.5)	80.0	(±7.5)
Riverside, California	NA	NA	NA	NA	68.2	(±8.4)	67.3	(±8.9)	72.3	(±7.5)	NA	NA	73.8	(±8.8)
San Bernardino, California†	NA	NA	62.9	(±8.3)	69.6	(±8.3)	65.0	(±8.9)	77.9	(±7.1)	71.7	(±6.0)	77.1	(±6.7)
San Diego, California†	62.4	(±4.7)	68.4	(±3.8)	70.6	(±3.8)	74.2	(±3.7)	78.7	(±3.7)	80.0	(±5.5)	80.5	(±7.1) [§]
San Mateo, California	NA	NA	72.7	(±8.1)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Santa Clara, California†	66.8	(±4.4)	70.9	(±3.9)	74.2	(±3.7)	76.4	(±3.5)	83.6	(±3.4) [§]	81.4	(±5.6) [§]	NA	NA
Adams, Colorado†	55.7	(±10.2) [¶]	65.7	(±7.8)	64.3	(±8.1)	66.5	(±8.8)	76.9	(±7.1)	NA	NA	NA	NA
Arapahoe, Colorado	72.9	(±8.2)	70.5	(±7.7)	75.9	(±7.0)	66.1	(±8.1)	83.4	(±5.6) [§]	NA	NA	80.3	(±7.8) [§]
Boulder, Colorado	NA	NA	70.1	(±7.8)	75.6	(±7.5)	69.0	(±8.6)	75.7	(±7.2)	80.9	(±6.2) [§]	79.3	(±7.7)
Denver, Colorado†	63.5	(±9.3)	69.1	(±7.2)	71.9	(±7.2)	73.9	(±7.2)	78.9	(±6.7)	NA	NA	NA	NA
Douglas, Colorado	NA	NA	NA	NA	77.6	(±7.3)	74.5	(±7.9)	85.3	(±5.3) [§]	NA	NA	NA	NA
El Paso, Colorado†	53.8	(±10.1) [¶]	67.7	(±8.2)	69.1	(±7.2)	72.9	(±7.4)	73.6	(±6.8)	78.7	(±6.6)	74.7	(±8.0)
Jefferson, Colorado†	61.5	(±8.9)	70.3	(±6.9)	75.7	(±7.0)	80.5	(±6.4) [§]	81.5	(±6.0) [§]	86.4	(±5.0) [§]	78.4	(±7.9)
Larimer, Colorado	NA	NA	NA	NA	72.4	(±7.5)	72.6	(±8.2)	NA	NA	79.2	(±7.0)	NA	NA
Weld, Colorado	NA	NA	NA	NA	73.1	(±8.0)	68.3	(±8.9)	75.5	(±7.5)	NA	NA	79.8	(±8.1)
Fairfield, Connecticut†	70.2	(±7.2)	73.7	(±5.4)	80.1	(±5.1) [§]	82.2	(±5.0) [§]	88.2	(±4.5) [§]	83.8	(±4.8) [§]	80.4	(±6.1) [§]
Hartford, Connecticut	74.5	(±6.9)	76.4	(±5.8)	76.5	(±5.7)	76.1	(±6.0)	87.6	(±4.3) [§]	85.6	(±4.4) [§]	81.9	(±6.2) [§]
New Haven, Connecticut†	65.0	(±7.6)	78.0	(±5.4)	79.1	(±5.6)	75.6	(±6.3)	82.6	(±5.8) [§]	81.5	(±5.8) [§]	80.5	(±5.9) [§]
New London, Connecticut	68.1	(±9.9)	70.4	(±7.8)	75.8	(±7.2)	NA	NA	84.4	(±5.9) [§]	84.3	(±5.5) [§]	76.3	(±7.8)
Kent, Delaware	68.7	(±8.1)	68.3	(±6.8)	69.1	(±6.7)	76.2	(±6.3)	80.4	(±6.0) [§]	80.6	(±6.5) [§]	78.8	(±6.8)
New Castle, Delaware†	65.4	(±5.5)	68.9	(±4.6)	70.3	(±4.6)	76.0	(±4.5)	84.5	(±3.7) [§]	83.5	(±4.2) [§]	78.9	(±4.9)
Sussex, Delaware†	57.4	(±8.4)	66.6	(±7.1)	74.7	(±6.3)	79.1	(±6.4)	79.9	(±6.0)	83.6	(±5.2) [§]	75.8	(±6.5)
District of Columbia†	59.6	(±5.2)	64.2	(±4.4)	68.7	(±4.2)	70.1	(±4.4)	79.2	(±4.1)	78.6	(±3.7)	80.6	(±3.9) [§]
Broward, Florida†	61.2	(±9.2)	71.3	(±6.9)	75.0	(±6.9)	73.6	(±7.7)	77.8	(±6.8)	78.1	(±6.9)	82.2	(±7.0) [§]
Duval, Florida†	62.2	(±4.9)	70.2	(±4.1)	74.8	(±3.9)	74.1	(±4.3)	78.2	(±3.9)	79.2	(±3.5)	NA	NA
Hillsborough, Florida†	60.0	(±10.6) [¶]	73.2	(±7.6)	68.4	(±7.9)	72.0	(±7.9)	79.3	(±6.4)	76.7	(±7.1)	NA	NA
Dade, Florida	NA	NA	NA	NA	77.1	(±4.0)	71.9	(±4.3)	81.2	(±3.6) [§]	83.4	(±4.8) [§]	79.9	(±3.9)
Orange, Florida†	NA	NA	NA	NA	69.7	(±7.8)	NA	NA	79.6	(±7.0)	NA	NA	84.2	(±4.8) [§]
Palm Beach, Florida†	NA	NA	70.1	(±7.6)	78.7	(±6.8)	76.8	(±7.1)	83.4	(±6.1) [§]	78.3	(±7.1)	82.1	(±7.7) [§]
Pinellas, Florida	NA	NA	70.1	(±7.9)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cobb, Georgia†	65.2	(±9.1)	71.3	(±7.7)	76.3	(±7.0)	78.5	(±6.8)	85.4	(±5.5) [§]	82.6	(±5.6) [§]	77.9	(±7.3)
DeKalb, Georgia†	66.6	(±7.3)	67.2	(±5.7)	76.1	(±5.0)	73.9	(±5.0)	78.7	(±4.5)	78.6	(±5.4)	82.5	(±6.8) [§]
Fulton, Georgia	67.9	(±6.9)	67.9	(±5.4)	74.0	(±4.8)	76.9	(±4.8)	83.0	(±4.0) [§]	81.1	(±5.0) [§]	77.2	(±7.7)
Gwinnett, Georgia	62.5	(±9.6)	71.7	(±7.3)	77.8	(±7.1)	77.8	(±6.9)	80.2	(±6.1) [§]	85.6	(±5.3) [§]	74.0	(±9.0)
Hawaii, Hawaii†	65.7	(±9.2)	67.0	(±8.1)	69.9	(±7.5)	75.1	(±7.5)	80.1	(±6.0) [§]	76.2	(±6.9)	80.0	(±7.0)
Honolulu, Hawaii†	69.5	(±5.7)	70.8	(±4.6)	74.5	(±4.5)	73.8	(±4.6)	80.5	(±3.6) [§]	80.7	(±4.2) [§]	80.3	(±4.6) [§]
Maui, Hawaii†	65.0	(±9.2)	68.5	(±8.4)	68.5	(±8.0)	74.0	(±7.4)	77.9	(±6.7)	79.8	(±6.8)	83.6	(±6.6) [§]
Ada, Idaho†	56.4	(±7.8)	71.2	(±5.9)	73.1	(±6.2)	68.4	(±6.8)	83.0	(±5.1) [§]	80.8	(±5.2) [§]	74.4	(±6.7)
Bannock, Idaho	NA	NA	69.6	(±8.2)	72.3	(±7.7)	72.1	(±8.4)	NA	NA	NA	NA	NA	NA
Bonneville, Idaho†	49.7	(±9.3)	61.9	(±8.2)	72.2	(±7.1)	75.7	(±7.5)	82.6	(±5.8) [§]	79.4	(±6.7)	73.6	(±8.6)
Canyon, Idaho	NA	NA	63.8	(±7.9)	65.9	(±7.8)	67.1	(±7.9)	76.4	(±7.1)	70.0	(±7.5)	72.0	(±8.4)
Kootenai, Idaho	59.4	(±9.8)	70.7	(±7.8)	74.8	(±7.4)	69.5	(±8.7)	NA	NA	NA	NA	NA	NA
Twin Falls, Idaho	NA	NA	68.3	(±8.2)	NA	NA	73.8	(±8.0)	NA	NA	NA	NA	NA	NA
Cook, Illinois†	58.3	(±4.9)	63.4	(±4.5)	66.6	(±4.4)	73.8	(±3.8)	79.2	(±4.0)	76.6	(±4.7)	75.3	(±4.1)
DuPage, Illinois	71.1	(±9.0)	74.9	(±6.7)	76.3	(±6.8)	77.7	(±7.4)	87.8	(±4.9) [§]	NA	NA	78.1	(±7.3)
Lake, Illinois†	64.4	(±10.1) [¶]	75.6	(±7.2)	76.3	(±7.2)	75.8	(±7.4)	81.3	(±6.4) [§]	NA	NA	84.5	(±6.7) [§]

See table footnotes on page 77.

TABLE 20. (Continued) Estimated vaccination coverage for the 4:3:1:3:3 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Will, Illinois	NA	NA	NA	NA	74.4	(±7.7)	72.5	(±7.8)	83.1	(±5.9) [§]	83.4	(±5.8) [§]	79.9	(±7.2)
Allen, Indiana	NA	NA	66.6	(±8.0)	74.6	(±7.6)	71.5	(±8.1)	81.1	(±6.3) [§]	NA	NA	77.2	(±8.4)
Hamilton, Indiana [†]	63.4	(±10.8) [¶]	72.3	(±7.8)	82.0	(±6.2) [§]	78.0	(±7.6)	86.3	(±5.2) [§]	NA	NA	83.9	(±6.5) [§]
Lake, Indiana [†]	50.6	(±11.1) [¶]	62.4	(±8.6)	65.3	(±8.2)	71.0	(±8.1)	78.7	(±7.1)	NA	NA	75.4	(±8.5)
Marion, Indiana [†]	59.7	(±5.2)	67.5	(±4.1)	64.8	(±4.4)	72.1	(±4.2)	78.7	(±3.7)	82.1	(±5.3) [§]	79.8	(±5.8)
Linn, Iowa	NA	NA	73.9	(±7.8)	NA	NA	76.0	(±7.5)	84.7	(±5.7) [§]	NA	NA	79.4	(±8.1)
Polk, Iowa [†]	58.0	(±9.2)	73.5	(±6.6)	78.0	(±6.5)	73.8	(±7.0)	86.3	(±4.9) [§]	82.3	(±5.3) [§]	78.8	(±6.8)
Scott, Iowa	NA	NA	NA	NA	76.1	(±7.5)	77.0	(±7.8)	80.8	(±6.2) [§]	NA	NA	NA	NA
Johnson, Kansas [†]	68.8	(±8.0)	74.1	(±6.3)	79.2	(±5.3)	76.6	(±6.8)	83.7	(±5.0) [§]	85.2	(±3.9) [§]	82.2	(±6.2) [§]
Sedgwick, Kansas [†]	53.0	(±8.6)	66.3	(±7.0)	69.8	(±6.9)	73.9	(±7.3)	79.8	(±6.3)	80.9	(±5.8) [§]	75.6	(±7.5)
Shawnee, Kansas [†]	NA	NA	NA	NA	65.1	(±8.5)	NA	NA	NA	NA	76.9	(±7.0)	79.7	(±7.9)
Fayette, Kentucky	NA	NA	75.2	(±7.3)	76.4	(±7.3)	NA	NA	82.8	(±5.9) [§]	NA	NA	NA	NA
Jefferson, Kentucky [†]	58.8	(±8.9)	70.4	(±6.5)	79.3	(±5.9)	72.9	(±7.0)	81.6	(±6.0) [§]	81.3	(±5.8) [§]	82.0	(±6.1) [§]
Caddo, Louisiana	NA	NA	67.5	(±8.0)	67.9	(±8.3)	NA	NA	NA	NA	80.8	(±6.9) [§]	78.6	(±8.1)
East Baton Rouge, Louisiana [†]	58.3	(±10.6) [¶]	68.1	(±8.0)	71.9	(±7.6)	72.4	(±7.7)	78.5	(±7.1)	80.0	(±6.6)	83.0	(±6.9) [§]
Jefferson, Louisiana	68.4	(±8.9)	74.3	(±7.1)	72.9	(±7.4)	70.7	(±8.1)	77.3	(±6.9)	77.5	(±6.8)	78.2	(±7.4)
Lafayette, Louisiana [†]	NA	NA	66.5	(±8.5)	NA	NA	NA	NA	79.1	(±6.6)	NA	NA	80.0	(±7.7)
Orleans, Louisiana [†]	60.6	(±5.7)	64.9	(±4.4)	64.5	(±4.7)	61.9	(±4.8)	74.8	(±4.3)	64.2	(±9.4)	77.2	(±8.7)
St. Tammany, Louisiana	NA	NA	NA	NA	NA	NA	72.9	(±8.0)	83.7	(±6.1) [§]	81.1	(±5.9) [§]	NA	NA
Androscoggin, Maine [†]	62.0	(±9.6)	70.8	(±7.9)	75.3	(±7.4)	77.2	(±6.9)	84.0	(±5.9) [§]	80.2	(±6.8) [§]	78.8	(±7.5)
Aroostook, Maine	NA	NA	75.1	(±7.8)	77.4	(±7.2)	NA	NA	82.8	(±6.1) [§]	NA	NA	NA	NA
Cumberland, Maine [†]	51.2	(±7.5)	75.2	(±5.4)	76.4	(±5.6)	74.9	(±6.1)	78.8	(±5.5)	82.5	(±5.0) [§]	77.3	(±6.1)
Kennebec, Maine [†]	66.1	(±9.2)	77.4	(±6.6)	78.5	(±6.9)	75.1	(±7.5)	82.0	(±6.2) [§]	NA	NA	80.7	(±7.7) [§]
Penobscot, Maine [†]	60.2	(±9.1)	72.0	(±7.4)	72.0	(±7.2)	73.5	(±7.7)	79.8	(±6.2)	82.3	(±6.1) [§]	76.7	(±7.6)
York, Maine [†]	62.5	(±8.2)	74.6	(±6.4)	76.8	(±6.2)	76.6	(±6.4)	82.0	(±5.5) [§]	79.4	(±6.0)	78.5	(±7.4)
Anne Arundel, Maryland [†]	67.4	(±9.4)	71.9	(±7.4)	74.0	(±7.3)	75.0	(±7.4)	85.6	(±5.2) [§]	84.5	(±5.6) [§]	82.3	(±7.0) [§]
Baltimore, Maryland [†]	61.9	(±8.8)	72.5	(±6.7)	75.7	(±6.2)	77.4	(±6.8)	80.4	(±6.2) [§]	85.2	(±5.1) [§]	84.9	(±6.0) [§]
Frederick, Maryland [†]	NA	NA	NA	NA	76.3	(±7.1)	79.0	(±7.3)	85.8	(±5.5) [§]	NA	NA	NA	NA
Harford, Maryland	NA	NA	NA	NA	NA	NA	NA	NA	83.7	(±6.0) [§]	NA	NA	NA	NA
Howard, Maryland	NA	NA	81.4	(±6.6) [§]	78.1	(±7.2)	76.9	(±7.5)	84.6	(±5.5) [§]	NA	NA	85.9	(±6.2) [§]
Montgomery, Maryland [†]	68.6	(±7.9)	78.7	(±5.6)	76.2	(±5.9)	79.7	(±5.5)	85.0	(±4.7) [§]	88.7	(±3.8) [§]	87.9	(±4.9) [§]
Prince George's, Maryland [†]	55.5	(±9.2)	65.6	(±7.4)	69.9	(±7.1)	70.1	(±7.7)	74.0	(±7.7)	77.3	(±6.7)	84.4	(±5.6) [§]
City of Baltimore, Maryland [†]	NA	NA	NA	NA	66.2	(±4.3)	68.9	(±4.2)	78.3	(±4.0)	78.9	(±4.1)	81.8	(±5.3) [§]
Bristol, Massachusetts [†]	67.5	(±10.1) [¶]	69.5	(±7.6)	76.8	(±6.9)	76.6	(±7.7)	85.0	(±5.4) [§]	82.9	(±5.9) [§]	NA	NA
Essex, Massachusetts	70.1	(±8.6)	73.1	(±6.8)	76.9	(±6.5)	81.1	(±6.1) [§]	82.8	(±5.9) [§]	82.0	(±6.2) [§]	80.9	(±7.7) [§]
Hampden, Massachusetts [†]	65.4	(±9.3)	73.3	(±7.6)	76.3	(±7.0)	74.1	(±8.0)	83.9	(±6.1) [§]	NA	NA	NA	NA
Middlesex, Massachusetts [†]	75.0	(±6.2)	79.1	(±5.1)	79.5	(±5.5)	78.8	(±5.5)	88.2	(±4.0) [§]	89.1	(±3.6) [§]	83.8	(±5.6) [§]
Norfolk, Massachusetts	73.7	(±8.0)	81.1	(±6.1) [§]	77.0	(±6.9)	80.7	(±6.3) [§]	88.3	(±4.6) [§]	88.4	(±4.4) [§]	83.3	(±6.6) [§]
Plymouth, Massachusetts [†]	67.9	(±9.6)	74.0	(±7.5)	79.3	(±7.0)	76.6	(±7.3)	85.3	(±5.2) [§]	NA	NA	80.9	(±7.7) [§]
Suffolk, Massachusetts [†]	73.7	(±5.8)	81.9	(±3.5) [§]	76.2	(±4.3)	79.0	(±3.9)	83.5	(±3.9) [§]	84.4	(±5.3) [§]	85.7	(±6.7) [§]
Worcester, Massachusetts [†]	68.2	(±8.6)	72.9	(±6.9)	75.3	(±6.7)	79.8	(±6.0)	84.2	(±5.2) [§]	84.6	(±5.3) [§]	81.2	(±6.8) [§]
Kent, Michigan [†]	64.8	(±9.9)	70.9	(±8.2)	74.6	(±7.5)	75.6	(±7.8)	83.1	(±6.3) [§]	NA	NA	79.2	(±7.2)
Macomb, Michigan [†]	60.6	(±9.5)	68.8	(±8.0)	75.5	(±7.3)	73.5	(±7.6)	84.9	(±5.5) [§]	83.5	(±5.8) [§]	NA	NA
Oakland, Michigan [†]	66.6	(±8.7)	78.6	(±6.1)	78.3	(±6.5)	78.6	(±6.7)	84.3	(±5.2) [§]	83.8	(±5.2) [§]	81.3	(±6.9) [§]
Wayne, Michigan [†]	54.8	(±5.8)	61.7	(±5.1)	65.7	(±5.3)	66.4	(±5.4)	77.1	(±5.2)	73.6	(±5.6)	73.9	(±7.3)
Anoka, Minnesota [†]	61.0	(±10.5) [¶]	71.5	(±8.0)	78.5	(±7.1)	80.0	(±7.1)	NA	NA	NA	NA	80.3	(±7.6) [§]
Dakota, Minnesota [†]	59.4	(±9.3)	68.6	(±7.9)	76.3	(±7.2)	75.4	(±7.7)	85.2	(±5.5) [§]	84.2	(±5.7) [§]	82.2	(±7.1) [§]
Hennepin, Minnesota [†]	58.9	(±7.5)	72.8	(±5.8)	79.9	(±5.5)	76.2	(±6.7)	84.4	(±5.2) [§]	86.8	(±4.7) [§]	80.0	(±5.6)
Ramsey, Minnesota [†]	61.9	(±8.4)	68.1	(±7.8)	72.7	(±7.5)	74.4	(±7.7)	82.9	(±6.1) [§]	84.4	(±5.5) [§]	81.0	(±7.2) [§]
Washington, Minnesota	NA	NA	70.3	(±8.5)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Harrison, Mississippi	NA	NA	69.3	(±8.0)	NA	NA	NA	NA	NA	NA	76.7	(±7.2)	NA	NA
Hinds, Mississippi [†]	56.1	(±10.4) [¶]	67.0	(±7.9)	67.2	(±8.5)	72.6	(±8.1)	NA	NA	73.2	(±8.3)	73.6	(±9.1)
Greene, Missouri	NA	NA	NA	NA	NA	NA	75.2	(±8.0)	NA	NA	NA	NA	NA	NA
Jackson, Missouri [†]	59.1	(±9.8)	68.3	(±7.8)	71.4	(±7.7)	78.6	(±7.2)	81.6	(±5.9) [§]	84.1	(±5.5) [§]	76.6	(±7.3)
Jefferson, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	79.1	(±8.2)
St. Charles, Missouri	NA	NA	72.0	(±8.1)	NA	NA	NA	NA	NA	NA	NA	NA	80.1	(±7.9) [§]
St. Louis, Missouri [†]	63.7	(±8.2)	73.6	(±6.4)	76.0	(±6.2)	80.0	(±6.2)	85.6	(±4.9) [§]	84.5	(±4.3) [§]	82.6	(±6.3) [§]
City of St. Louis, Missouri	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76.3	(±8.8)
Cascade, Montana [†]	54.7	(±9.9)	72.2	(±6.6)	75.9	(±6.9)	75.5	(±7.3)	84.7	(±5.6) [§]	80.4	(±6.4) [§]	77.3	(±7.8)
Flathead, Montana [†]	52.3	(±10.5) [¶]	65.4	(±8.2)	72.2	(±7.7)	62.7	(±7.7)	76.5	(±6.9)	69.1	(±8.1)	72.0	(±8.5)
Gallatin, Montana [†]	57.6	(±10.0) [¶]	68.4	(±8.2)	71.3	(±7.7)	73.2	(±8.0)	78.5	(±6.7)	80.0	(±6.3)	76.9	(±7.6)
Lewis and Clark, Montana	NA	NA	73.0	(±7.3)	74.2	(±7.7)	75.9	(±7.9)	NA	NA	NA	NA	78.9	(±7.9)
Missoula, Montana	62.2	(±9.0)	70.4	(±7.3)	76.0	(±7.3)	74.8	(±7.3)	77.5	(±6.6)	74.8	(±6.7)	63.4	(±9.4)
Yellowstone, Montana [†]	59.9	(±8.5)	74.3	(±6.4)	72.3	(±6.8)	75.9	(±6.6)	81.2	(±5.4) [§]	83.1	(±5.3) [§]	72.8	(±8.1)
Douglas, Nebraska [†]	67.9	(±6.9)	69.4	(±5.8)	80.0	(±5.1)	78.5	(±5.5)	82.2	(±4.7) [§]	84.2	(±4.5) [§]	83.9	(±4.3) [§]
Lancaster, Nebraska [†]	61.8	(±8.6)	70.1	(±6.5)	77.5	(±6.1)	76.9	(±6.7)	83.7	(±5.4) [§]	84.2	(±5.5) [§]	81.5	(±6.7) [§]
Sarpy, Nebraska [†]	62.5	(±10.0) [¶]	67.4	(±7.9)	74.9	(±7.6)	76.3	(±7.5)	83.5	(±5.8) [§]	NA	NA	NA	NA
Clark, Nevada	59.0	(±5.7)	66.4	(±4.8)	65.4	(±4.5)	68.6	(±4.8)	69.3	(±4.5)	63.8	(±5.0)	66.8	(±5.4)

See table footnotes on page 77.

TABLE 20. (Continued) Estimated vaccination coverage for the 4:3:1:3:3 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Washoe, Nevada†	64.5	(±8.4)	72.1	(±6.4)	77.8	(±5.7)	78.1	(±6.8)	84.9	(±5.2) [§]	83.3	(±5.0) [§]	81.0	(±6.4) [§]
Grafton, New Hampshire†	NA	NA	74.0	(±7.3)	76.2	(±7.0)	74.7	(±8.0)	85.4	(±5.6) [§]	NA	NA	88.4	(±5.5) [§]
Hillsborough, New Hampshire†	73.4	(±5.9)	75.8	(±4.9)	77.9	(±5.4)	78.5	(±5.3)	86.1	(±4.0) [§]	84.2	(±4.5) [§]	84.7	(±4.9) [§]
Merrimack, New Hampshire†	70.2	(±8.5)	73.1	(±6.9)	77.5	(±6.9)	75.4	(±6.8)	82.6	(±5.5) [§]	84.4	(±5.5) [§]	83.5	(±7.2) [§]
Rockingham, New Hampshire†	72.4	(±7.2)	76.6	(±5.6)	79.5	(±5.2)	81.5	(±5.3) [§]	86.6	(±4.7) [§]	83.8	(±4.8) [§]	84.9	(±5.7) [§]
Strafford, New Hampshire†	67.2	(±9.3)	73.4	(±7.5)	75.0	(±7.2)	76.3	(±7.3)	84.1	(±5.7) [§]	82.9	(±5.8) [§]	81.4	(±7.5) [§]
Bergen, New Jersey†	70.6	(±8.9)	81.7	(±6.0) [§]	78.6	(±6.2)	81.1	(±6.7) [§]	85.4	(±5.5) [§]	85.5	(±5.3) [§]	85.5	(±6.5) [§]
Burlington, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	81.3	(±7.4) [§]
Camden, New Jersey†	NA	NA	70.6	(±8.3)	72.4	(±8.0)	76.3	(±7.6)	NA	NA	80.8	(±6.6) [§]	83.0	(±6.8) [§]
Essex, New Jersey	66.0	(±7.9)	71.8	(±6.7)	69.3	(±6.8)	67.0	(±8.4)	74.9	(±6.5)	77.0	(±6.4)	71.3	(±7.1)
Hudson, New Jersey†	57.9	(±11.4) [¶]	70.3	(±8.0)	64.8	(±8.9)	62.6	(±9.7)	75.3	(±7.3)	NA	NA	74.2	(±8.6)
Middlesex, New Jersey	NA	NA	74.8	(±7.3)	71.9	(±7.8)	73.6	(±7.6)	82.7	(±6.0) [§]	82.6	(±6.1) [§]	78.9	(±7.7)
Monmouth, New Jersey	NA	NA	73.4	(±7.7)	75.8	(±7.4)	70.9	(±8.1)	NA	NA	84.6	(±5.6) [§]	80.7	(±7.1) [§]
Morris, New Jersey	66.7	(±10.0) [¶]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ocean, New Jersey	NA	NA	NA	NA	NA	NA	NA	NA	77.6	(±7.2)	77.2	(±6.8)	79.3	(±7.5)
Passaic, New Jersey	NA	NA	NA	NA	70.9	(±8.0)	71.8	(±8.2)	77.8	(±7.0)	NA	NA	NA	NA
Union, New Jersey	NA	NA	69.7	(±8.6)	74.9	(±7.4)	78.8	(±7.3)	81.2	(±6.1) [§]	NA	NA	80.6	(±7.6) [§]
Bernalillo, New Mexico†	56.6	(±8.2)	67.1	(±6.4)	68.0	(±6.7)	65.3	(±6.4)	81.3	(±5.5) [§]	75.8	(±5.9)	79.7	(±6.4)
Dona Ana, New Mexico†	52.0	(±10.0) [¶]	68.2	(±7.7)	67.1	(±8.2)	63.0	(±9.4)	77.4	(±7.2)	NA	NA	76.3	(±8.6)
Sandoval, New Mexico	NA	NA	NA	NA	NA	NA	NA	NA	79.7	(±8.0)	NA	NA	75.5	(±9.2)
San Juan, New Mexico	NA	NA	NA	NA	67.9	(±8.7)	68.1	(±8.6)	88.2	(±7.1) [§]	70.9	(±8.5)	75.4	(±8.9)
Santa Fe, New Mexico†	63.8	(±10.2) [¶]	NA	NA	64.2	(±8.8)	NA	NA	78.1	(±7.0)	NA	NA	NA	NA
Bronx, New York†	56.7	(±10.1) [¶]	65.0	(±8.1)	62.7	(±8.2)	70.5	(±7.5)	68.6	(±7.7)	70.1	(±8.3)	79.0	(±6.8)
Erie, New York	69.0	(±9.5)	75.0	(±7.7)	77.8	(±6.8)	74.3	(±7.8)	79.2	(±7.1)	79.4	(±6.7)	NA	NA
Kings, New York†	61.7	(±8.5)	68.5	(±6.5)	65.7	(±6.1)	72.3	(±6.4)	71.3	(±6.4)	75.8	(±5.7)	74.6	(±5.3)
Monroe, New York	NA	NA	74.8	(±7.3)	76.3	(±7.2)	74.2	(±8.1)	84.7	(±5.7) [§]	84.5	(±5.2) [§]	82.2	(±6.9) [§]
Nassau, New York	76.8	(±8.9)	81.2	(±5.8) [§]	76.4	(±6.3)	77.9	(±6.9)	81.2	(±6.1) [§]	86.9	(±5.1) [§]	86.3	(±5.3) [§]
New York, New York	67.6	(±9.8)	78.3	(±6.7)	80.5	(±6.5) [§]	80.9	(±7.0) [§]	88.6	(±4.9) [§]	80.0	(±6.3)	78.9	(±6.5)
Queens, New York†	67.1	(±8.1)	71.4	(±6.1)	69.1	(±6.4)	74.1	(±6.4)	77.9	(±6.2)	80.9	(±5.6) [§]	82.2	(±5.5) [§]
Suffolk, New York	67.6	(±8.5)	75.3	(±6.5)	74.9	(±6.3)	76.2	(±6.8)	81.0	(±6.5) [§]	81.5	(±5.8) [§]	76.7	(±7.0)
Westchester, New York	NA	NA	80.9	(±6.2) [§]	78.7	(±7.0)	81.2	(±6.7) [§]	83.1	(±6.2) [§]	87.4	(±5.1) [§]	NA	NA
Durham, North Carolina	NA	NA	NA	NA	NA	NA	NA	NA	76.4	(±7.8)	NA	NA	NA	NA
Guilford, North Carolina	NA	NA	70.9	(±7.9)	76.3	(±7.2)	NA	NA	NA	NA	NA	NA	NA	NA
Mecklenburg, North Carolina†	64.3	(±9.2)	70.5	(±7.5)	75.0	(±7.6)	74.4	(±7.7)	84.7	(±5.7) [§]	84.0	(±5.8) [§]	79.4	(±7.6)
Wake, North Carolina†	71.4	(±8.8)	75.2	(±7.2)	74.9	(±7.1)	79.4	(±6.9)	83.9	(±5.8) [§]	87.2	(±4.7) [§]	84.1	(±5.7) [§]
Burleigh, North Dakota	67.0	(±8.8)	73.7	(±6.8)	73.8	(±6.7)	77.1	(±7.6)	84.1	(±5.4) [§]	84.1	(±5.4) [§]	77.1	(±6.9)
Cass, North Dakota†	69.5	(±7.3)	71.1	(±6.2)	76.0	(±5.9)	77.1	(±6.3)	83.8	(±5.0) [§]	86.1	(±4.3) [§]	82.7	(±6.0) [§]
Grand Forks, North Dakota†	60.1	(±9.7)	72.0	(±7.3)	76.6	(±6.6)	74.6	(±7.2)	83.0	(±5.7) [§]	83.9	(±5.7) [§]	80.3	(±7.6) [§]
Ward, North Dakota	68.8	(±9.0)	68.7	(±7.7)	76.2	(±6.5)	75.4	(±7.6)	82.3	(±5.9) [§]	82.7	(±5.9) [§]	77.3	(±7.5)
Cuyahoga, Ohio†	61.7	(±4.8)	68.3	(±4.1)	67.7	(±4.0)	71.4	(±4.4)	79.6	(±4.0)	84.1	(±3.3) [§]	82.5	(±6.2) [§]
Franklin, Ohio†	58.7	(±4.6)	65.8	(±4.2)	69.8	(±3.9)	77.3	(±3.6)	84.3	(±3.2) [§]	82.8	(±5.5) [§]	76.4	(±8.0)
Hamilton, Ohio†	63.2	(±9.2)	72.0	(±7.3)	74.3	(±7.4)	80.3	(±6.6) [§]	81.8	(±6.1) [§]	84.0	(±5.5) [§]	84.4	(±6.6) [§]
Lucas, Ohio	NA	NA	70.2	(±7.9)	NA	NA	75.4	(±7.7)	NA	NA	NA	NA	NA	NA
Montgomery, Ohio	NA	NA	NA	NA	NA	NA	76.3	(±7.3)	NA	NA	NA	NA	NA	NA
Cleveland, Oklahoma†	NA	NA	67.5	(±8.5)	NA	NA	76.5	(±7.6)	80.6	(±6.6) [§]	81.0	(±6.2) [§]	79.6	(±7.8)
Oklahoma, Oklahoma†	56.1	(±8.7)	66.2	(±7.3)	73.6	(±6.3)	68.7	(±7.3)	70.2	(±7.8)	78.6	(±5.8)	78.3	(±7.2)
Tulsa, Oklahoma†	50.6	(±8.9)	71.6	(±6.6)	73.0	(±6.8)	74.3	(±7.4)	76.0	(±7.9)	78.9	(±6.0)	74.5	(±7.4)
Clackamas, Oregon	69.4	(±8.7)	62.6	(±8.0)	75.0	(±7.0)	74.6	(±7.5)	78.6	(±6.9)	NA	NA	74.4	(±8.6)
Lane, Oregon†	58.6	(±9.9)	68.5	(±8.0)	74.5	(±7.7)	65.1	(±8.4)	77.0	(±7.2)	75.9	(±7.2)	76.4	(±8.4)
Marion, Oregon†	60.3	(±10.1) [¶]	69.7	(±7.4)	71.3	(±7.1)	72.5	(±7.9)	78.6	(±6.7)	75.4	(±7.5)	76.3	(±8.7)
Multnomah, Oregon	64.6	(±7.6)	69.2	(±6.5)	73.3	(±6.3)	70.2	(±6.7)	77.5	(±6.1)	79.1	(±6.0)	71.9	(±7.7)
Washington, Oregon†	59.4	(±8.7)	70.2	(±7.1)	69.8	(±7.0)	77.7	(±6.6)	79.6	(±5.5)	80.4	(±5.9) [§]	83.4	(±6.8) [§]
Allegheny, Pennsylvania†	69.4	(±8.4)	70.4	(±7.1)	78.3	(±6.8)	81.3	(±6.3) [§]	85.3	(±5.2) [§]	83.4	(±5.2) [§]	82.5	(±6.5) [§]
Delaware, Pennsylvania†	NA	NA	74.0	(±7.5)	NA	NA	NA	NA	85.3	(±5.5) [§]	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76.7	(±8.6)
Montgomery, Pennsylvania†	74.3	(±8.4)	80.3	(±6.2) [§]	77.0	(±7.2)	NA	NA	87.7	(±4.8) [§]	NA	NA	85.3	(±6.2) [§]
Philadelphia, Pennsylvania†	60.0	(±5.1)	68.6	(±4.0)	69.4	(±3.8)	68.8	(±4.0)	77.7	(±3.7)	78.1	(±4.0)	81.9	(±3.7) [§]
Kent, Rhode Island†	64.0	(±8.6)	70.3	(±6.6)	80.0	(±6.0)	80.1	(±5.9) [§]	83.3	(±5.4) [§]	85.3	(±4.6) [§]	79.4	(±6.7)
Newport, Rhode Island†	63.5	(±9.4)	65.9	(±8.1)	72.3	(±7.6)	76.7	(±7.0)	NA	NA	81.5	(±6.0) [§]	NA	NA
Providence, Rhode Island†	66.2	(±5.1)	76.5	(±4.0)	80.5	(±4.1) [§]	80.8	(±4.4) [§]	83.7	(±3.9) [§]	79.6	(±4.1)	79.4	(±4.9)
Washington, Rhode Island	71.9	(±8.5)	73.4	(±7.0)	78.2	(±6.0)	80.3	(±6.4) [§]	85.4	(±5.1) [§]	88.8	(±4.5) [§]	82.4	(±6.6) [§]
Charleston, South Carolina	70.3	(±10.1) [¶]	74.0	(±7.2)	74.5	(±7.7)	74.6	(±8.1)	75.8	(±7.7)	82.1	(±6.6) [§]	78.4	(±7.8)
Greenville, South Carolina	70.3	(±9.8)	72.5	(±7.2)	75.3	(±7.0)	77.2	(±7.3)	84.0	(±6.0) [§]	79.6	(±6.6)	76.6	(±7.6)
Horry, South Carolina	NA	NA	NA	NA	NA	NA	76.1	(±7.8)	NA	NA	NA	NA	78.5	(±8.6)
Richland, South Carolina	NA	NA	72.8	(±8.1)	72.7	(±7.9)	78.3	(±7.4)	NA	NA	83.6	(±5.5) [§]	79.7	(±7.3)
Spartanburg, South Carolina†	61.2	(±10.4) [¶]	69.0	(±8.4)	76.8	(±7.4)	NA	NA	NA	NA	79.7	(±6.9)	79.8	(±7.7)
York, South Carolina	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	78.6	(±7.4)
Minnehaha, South Dakota†	41.4	(±7.8)	64.2	(±7.0)	71.6	(±6.5)	73.9	(±6.9)	85.0	(±4.8) [§]	82.2	(±5.0) [§]	83.4	(±5.8) [§]

See table footnotes on page 77.

TABLE 20. (Continued) Estimated vaccination coverage for the 4:3:1:3:3 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 1995–2008

County/Area	1995–1996		1997–1998		1999–2000		2001–2002		2003–2004		2005–2006		2007–2008	
	% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)		% (95% CI)	
Pennington, South Dakota†	57.4	(±9.7)	73.1	(±7.0)	78.0	(±6.7)	75.2	(±8.4)	86.5	(±5.2) [§]	80.6	(±6.1) [§]	76.6	(±8.4)
Davidson, Tennessee†	61.6	(±4.5)	66.4	(±4.0)	65.6	(±4.1)	78.0	(±3.7)	84.7	(±3.1) [§]	81.9	(±5.2) [§]	83.8	(±6.1) [§]
Hamilton, Tennessee	NA	NA	69.1	(±7.7)	69.8	(±7.9)	75.6	(±8.2)	NA	NA	NA	NA	NA	NA
Knox, Tennessee†	66.5	(±9.7)	74.6	(±6.7)	74.0	(±7.3)	75.1	(±7.8)	82.6	(±5.6) [§]	84.1	(±6.2) [§]	82.4	(±7.5) [§]
Shelby, Tennessee†	61.6	(±4.6)	67.5	(±4.2)	72.6	(±3.9)	73.2	(±4.1)	76.0	(±3.9)	75.5	(±4.3)	78.9	(±7.0)
Bexar, Texas†	55.2	(±4.9)	72.7	(±3.9)	65.6	(±4.3)	73.5	(±3.8)	76.3	(±4.2)	75.1	(±4.4)	79.3	(±3.8)
Collin, Texas	NA	NA	NA	NA	NA	NA	87.7	(±6.5) [§]	NA	NA	85.9	(±5.3) [§]	NA	NA
Dallas, Texas†	58.2	(±5.2)	64.7	(±4.3)	64.6	(±4.3)	67.7	(±3.8)	71.2	(±3.8)	75.0	(±4.4)	74.6	(±3.9)
El Paso, Texas†	56.1	(±5.0)	61.2	(±3.9)	65.0	(±4.2)	64.2	(±4.5)	72.4	(±4.0)	71.1	(±4.0)	76.6	(±3.8)
Harris, Texas†	55.0	(±5.5)	56.0	(±4.9)	60.9	(±4.7)	68.0	(±4.8)	68.9	(±4.4)	75.3	(±4.6)	77.0	(±5.7)
Hidalgo, Texas	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	72.1	(±9.7)	NA	NA
Tarrant, Texas†	62.6	(±9.9)	62.6	(±8.3)	70.3	(±7.8)	72.3	(±8.1)	79.8	(±6.4)	80.1	(±6.1) [§]	75.8	(±8.4)
Travis, Texas	NA	NA	NA	NA	69.7	(±8.3)	NA	NA	80.7	(±6.8) [§]	76.5	(±7.3)	NA	NA
Cache, Utah	NA	NA	68.2	(±8.4)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Davis, Utah†	57.4	(±9.6)	65.4	(±7.9)	66.9	(±7.7)	76.2	(±7.1)	80.4	(±6.2) [§]	79.5	(±6.5)	80.0	(±7.0)
Salt Lake, Utah†	50.6	(±6.4)	66.1	(±5.7)	71.2	(±5.5)	70.9	(±5.9)	76.9	(±5.4)	80.0	(±5.7)	78.9	(±6.1)
Utah, Utah†	56.1	(±8.2)	56.7	(±7.1)	66.1	(±6.9)	72.5	(±6.2)	78.7	(±5.6)	78.8	(±6.4)	74.7	(±7.1)
Weber, Utah†	52.0	(±10.3) [¶]	67.7	(±7.8)	73.1	(±7.4)	73.1	(±8.3)	80.8	(±6.3) [§]	NA	NA	NA	NA
Addison, Vermont†	69.9	(±9.4)	81.3	(±6.5) [§]	NA	NA	72.9	(±7.8)	83.7	(±5.8) [§]	NA	NA	NA	NA
Bennington, Vermont	NA	NA	74.8	(±7.5)	78.1	(±7.2)	NA	NA	NA	NA	NA	NA	NA	NA
Chittenden, Vermont†	66.7	(±7.1)	79.6	(±5.3)	77.8	(±6.2)	79.5	(±5.4)	85.5	(±4.2) [§]	88.8	(±4.0) [§]	80.2	(±5.9) [§]
Franklin, Vermont†	69.1	(±9.4)	77.7	(±7.0)	78.4	(±6.8)	76.2	(±7.2)	83.4	(±5.7) [§]	NA	NA	82.2	(±7.0) [§]
Lamoille, Vermont	NA	NA	NA	NA	NA	NA	NA	NA	81.4	(±6.8) [§]	NA	NA	NA	NA
Orange, Vermont	68.7	(±10.1) [¶]	71.6	(±7.3)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rutland, Vermont†	54.4	(±9.3)	73.9	(±7.2)	75.1	(±6.8)	78.7	(±7.4)	82.2	(±6.0) [§]	NA	NA	NA	NA
Washington, Vermont†	59.4	(±10.3) [¶]	71.8	(±7.3)	77.1	(±7.4)	76.8	(±7.7)	84.2	(±5.4) [§]	83.7	(±5.4) [§]	77.6	(±7.7)
Windham, Vermont	NA	NA	74.7	(±7.3)	79.1	(±6.7)	72.7	(±7.9)	NA	NA	NA	NA	79.0	(±7.6)
Windsor, Vermont†	65.3	(±9.1)	72.6	(±7.6)	76.3	(±6.9)	74.3	(±7.5)	83.4	(±5.6) [§]	84.6	(±5.5) [§]	NA	NA
Fairfax, Virginia†	68.0	(±8.2)	72.1	(±6.6)	73.1	(±6.8)	74.7	(±7.2)	86.6	(±4.7) [§]	86.5	(±4.4) [§]	84.8	(±5.4) [§]
Loudoun, Virginia	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	81.8	(±7.4) [§]
Virginia Beach, Virginia†	NA	NA	64.5	(±8.5)	72.8	(±7.8)	NA	NA	NA	NA	NA	NA	77.3	(±8.2)
Clark, Washington†	67.3	(±10.0) [¶]	66.8	(±7.9)	71.1	(±7.5)	74.7	(±7.8)	78.6	(±7.0)	79.7	(±6.9)	NA	NA
King, Washington†	69.1	(±4.0)	71.3	(±3.8)	69.6	(±3.8)	69.8	(±3.8)	79.7	(±3.4)	78.0	(±4.2)	78.6	(±5.6)
Kitsap, Washington	NA	NA	NA	NA	74.3	(±7.5)	NA	NA	74.7	(±7.5)	NA	NA	76.7	(±7.7)
Pierce, Washington†	56.0	(±9.3)	68.2	(±7.3)	69.3	(±6.6)	70.9	(±7.5)	76.4	(±6.7)	80.3	(±6.2) [§]	75.8	(±8.0)
Snohomish, Washington†	64.5	(±9.2)	65.6	(±7.3)	72.4	(±6.6)	72.3	(±7.1)	80.3	(±6.0) [§]	76.6	(±6.8)	77.2	(±8.2)
Spokane, Washington†	57.2	(±10.3) [¶]	69.9	(±7.4)	76.9	(±6.6)	68.6	(±8.3)	77.7	(±6.9)	NA	NA	77.2	(±7.6)
Thurston, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	76.8	(±7.3)
Whatcom, Washington	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	81.2	(±6.8) [§]
Yakima, Washington†	52.7	(±10.7) [¶]	63.8	(±8.4)	NA	NA	70.5	(±9.4)	NA	NA	NA	NA	NA	NA
Kanawha, West Virginia†	56.7	(±9.2)	76.1	(±6.7)	76.8	(±6.6)	NA	NA	84.5	(±5.6) [§]	77.4	(±6.8)	79.5	(±7.4)
Brown, Wisconsin	NA	NA	NA	NA	NA	NA	77.1	(±7.8)	NA	NA	NA	NA	NA	NA
Dane, Wisconsin	73.0	(±8.4)	76.3	(±6.8)	75.7	(±7.0)	76.1	(±7.5)	84.1	(±5.4) [§]	87.4	(±4.8) [§]	81.6	(±7.5) [§]
Milwaukee, Wisconsin†	52.4	(±4.6)	61.7	(±4.0)	65.6	(±4.3)	67.3	(±4.6)	78.6	(±3.8)	78.3	(±4.6)	78.8	(±6.4)
Outagamie, Wisconsin	NA	NA	70.4	(±8.0)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Waukesha, Wisconsin†	61.1	(±9.4)	72.1	(±7.3)	76.7	(±6.6)	79.2	(±6.9)	83.7	(±5.5) [§]	87.2	(±4.6) [§]	NA	NA
Albany, Wyoming†	NA	NA	69.2	(±7.8)	76.4	(±7.5)	NA	NA	79.6	(±6.8)	NA	NA	NA	NA
Campbell, Wyoming†	NA	NA	71.6	(±7.7)	74.7	(±7.2)	76.5	(±7.4)	80.3	(±5.9) [§]	83.9	(±5.4) [§]	82.1	(±6.8) [§]
Fremont, Wyoming†	NA	NA	68.7	(±8.3)	70.9	(±7.8)	71.4	(±8.7)	90.8	(±5.6) [§]	NA	NA	NA	NA
Laramie, Wyoming†	40.1	(±8.0)	70.9	(±6.7)	76.9	(±6.3)	69.9	(±7.8)	83.2	(±5.2) [§]	82.4	(±5.6) [§]	68.2	(±8.1)
Natrona, Wyoming†	49.8	(±9.4)	73.9	(±6.4)	76.9	(±6.2)	75.8	(±7.0)	83.3	(±5.4) [§]	78.9	(±6.4)	75.5	(±7.9)
Sweetwater, Wyoming†	45.6	(±9.8)	63.3	(±8.0)	76.0	(±7.0)	72.0	(±8.3)	NA	NA	78.3	(±6.7)	73.5	(±8.0)
Uinta, Wyoming	NA	NA	NA	NA	74.8	(±7.5)	NA	NA	NA	NA	NA	NA	NA	NA
United States†	61.9	(±0.9)	70.6	(±0.7)	72.7	(±0.7)	74.1	(±0.7)	80.5	(±0.7) [§]	80.6	(±0.7) [§]	79.2	(±0.7)
Sample size, no.	37,282		44,855		45,623		45,052		43,308		38,607		35,447	
All selected counties	62.4		69.6		71.8		73.7		79.9		80.4		79.3	
Sample size, no.	23,014		29,227		30,362		29,851		28,845		23,485		20,552	
Range, %	40.1–76.8		56–81.9		60.9–82		61.9–87.7		68.6–90.8		63.8–89.1		63.4–88.4	

Abbreviations: CI = confidence interval; DTaP = diphtheria and tetanus toxoids and acellular pertussis; DTP = diphtheria and tetanus toxoids and pertussis; Hib = *Haemophilus influenzae* type B; MMR = measles, mumps, and rubella; NA = not available.

* ≥4 doses DTaP/DTP vaccine, ≥3 doses of polio vaccine, ≥1 dose of MMR vaccine, ≥3 doses of Hib vaccine, and ≥3 doses of hepatitis B vaccine.

† Estimates increased significantly between the first and last biennial periods ($p < 0.05$).

‡ Estimate exceeds the *Healthy People 2010* objective of 80% vaccination coverage.

§ Estimate has 95% CI half-width that exceeds 10% and might be imprecise.

TABLE 21. Estimated vaccination coverage for the 4:3:1:3:3:1 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2001–2008

County/Area	2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Jefferson, Alabama	71.0	(±4.2)	77.7	(±4.5)	83.5	(±5.0) [†]	76.7	(±8.1)
Madison, Alabama	NA	NA	77.2	(±8.0)	78.6	(±7.2)	81.2	(±7.7) [†]
Mobile, Alabama	65.8	(±9.0)	73.6	(±8.6)	73.1	(±7.9)	76.3	(±8.5)
Shelby, Alabama [§]	68.2	(±9.5)	78.6	(±8.0)	NA	NA	81.3	(±7.6) [†]
Anchorage, Alaska [§]	58.0	(±6.2)	73.5	(±5.3)	71.2	(±6.4)	75.1	(±6.6)
Fairbanks North Star, Alaska [§]	55.5	(±8.5)	69.7	(±7.4)	71.0	(±7.7)	72.0	(±8.5)
Matanuska-Susitna, Alaska [§]	40.7	(±10.2) [¶]	72.3	(±8.3)	67.4	(±8.5)	63.9	(±9.0)
Coconino, Arizona	NA	NA	74.2	(±8.6)	NA	NA	NA	NA
Maricopa, Arizona [§]	60.3	(±4.3)	72.2	(±3.8)	72.2	(±4.1)	74.4	(±5.4)
Mohave, Arizona	56.5	(±10.3) [¶]	NA	NA	NA	NA	NA	NA
Pima, Arizona [§]	60.5	(±6.1)	71.2	(±6.2)	73.3	(±6.1)	75.4	(±7.5)
Pinal, Arizona [§]	52.8	(±9.4)	65.4	(±9.5)	67.9	(±9.3)	NA	NA
Yavapai, Arizona [§]	45.5	(±10.8) [¶]	68.3	(±8.8)	NA	NA	NA	NA
Yuma, Arizona [§]	59.1	(±9.2)	74.3	(±8.0)	74.5	(±8.2)	NA	NA
Benton, Arkansas [§]	59.9	(±9.6)	75.1	(±8.3)	72.5	(±8.1)	78.0	(±7.7)
Pulaski, Arkansas [§]	64.3	(±8.5)	76.0	(±8.1)	76.8	(±7.5)	78.1	(±7.6)
Washington, Arkansas [§]	56.6	(±10.1) [¶]	NA	NA	NA	NA	72.1	(±8.5)
Alameda, California	67.2	(±9.1)	77.0	(±7.7)	76.4	(±5.6)	77.4	(±7.1)
Los Angeles, California [§]	67.5	(±4.2)	76.7	(±3.7)	77.4	(±3.8)	77.0	(±3.7)
Orange, California	67.7	(±8.2)	76.4	(±7.1)	77.4	(±7.1)	77.4	(±8.1)
Riverside, California	62.1	(±9.7)	68.2	(±8.6)	NA	NA	71.8	(±9.3)
San Bernardino, California [§]	58.7	(±9.6)	73.1	(±8.3)	68.4	(±6.3)	75.8	(±6.9)
San Diego, California	70.1	(±3.9)	74.9	(±4.0)	74.1	(±6.7)	78.3	(±7.7)
Santa Clara, California [§]	69.0	(±3.8)	78.1	(±3.8)	78.4	(±6.1)	NA	NA
Adams, Colorado [§]	55.4	(±9.9)	72.8	(±8.4)	NA	NA	NA	NA
Arapahoe, Colorado [§]	56.0	(±9.1)	77.9	(±7.3)	NA	NA	77.5	(±8.6)
Boulder, Colorado [§]	56.1	(±10.2) [¶]	66.5	(±9.0)	73.3	(±7.9)	74.8	(±8.7)
Denver, Colorado	68.9	(±8.0)	73.4	(±8.3)	NA	NA	NA	NA
Douglas, Colorado [§]	65.7	(±9.6)	78.9	(±7.1)	NA	NA	NA	NA
El Paso, Colorado	64.0	(±8.6)	68.0	(±7.9)	74.2	(±7.5)	71.6	(±8.6)
Jefferson, Colorado	72.5	(±7.7)	75.5	(±7.7)	81.0	(±6.3) [†]	75.1	(±8.7)
Larimer, Colorado	61.8	(±9.7)	NA	NA	72.2	(±8.8)	NA	NA
Weld, Colorado [§]	60.9	(±10.0) [¶]	67.7	(±9.0)	NA	NA	77.2	(±8.9)
Fairfield, Connecticut	73.6	(±6.1)	86.4	(±5.2) [†]	79.8	(±5.4)	77.6	(±6.6)
Hartford, Connecticut [§]	68.6	(±6.8)	82.5	(±5.3) [†]	83.1	(±5.1) [†]	80.3	(±6.6) [†]
New Haven, Connecticut [§]	64.6	(±7.3)	78.5	(±6.7)	77.2	(±6.5)	76.6	(±6.4)
New London, Connecticut	NA	NA	79.2	(±7.7)	74.5	(±7.8)	71.9	(±8.6)
Kent, Delaware [§]	65.2	(±7.5)	72.1	(±7.4)	75.1	(±7.7)	77.2	(±7.2)
New Castle, Delaware [§]	65.9	(±4.9)	76.8	(±4.6)	79.8	(±4.8)	76.6	(±5.1)
Sussex, Delaware	66.7	(±8.3)	73.0	(±7.3)	80.0	(±6.3)	73.7	(±6.8)
District of Columbia [§]	65.1	(±4.7)	75.2	(±4.4)	76.0	(±3.9)	79.6	(±3.9)
Broward, Florida [§]	65.7	(±8.9)	72.5	(±8.3)	75.9	(±7.6)	78.4	(±7.9)
Duval, Florida [§]	66.3	(±4.6)	72.9	(±4.3)	76.5	(±3.7)	NA	NA
Hillsborough, Florida	61.5	(±9.2)	74.4	(±7.5)	73.4	(±7.8)	NA	NA
Dade, Florida [§]	57.2	(±4.8)	72.7	(±4.1)	79.2	(±5.3)	76.8	(±4.1)
Orange, Florida	NA	NA	74.9	(±8.6)	NA	NA	82.7	(±5.0) [†]
Palm Beach, Florida [§]	66.5	(±8.6)	79.5	(±7.3)	75.5	(±7.9)	79.9	(±8.5)
Cobb, Georgia	70.4	(±8.0)	81.1	(±7.0) [†]	77.9	(±6.6)	75.2	(±7.9)
DeKalb, Georgia [§]	67.5	(±5.4)	75.5	(±4.7)	71.0	(±6.8)	79.7	(±7.5)
Fulton, Georgia	71.1	(±5.3)	78.1	(±4.8)	77.2	(±5.5)	74.4	(±8.0)
Gwinnett, Georgia	71.2	(±8.2)	74.9	(±7.6)	81.9	(±6.4) [†]	69.6	(±9.9)
Hawaii, Hawaii [§]	61.4	(±9.3)	75.6	(±7.1)	71.6	(±7.8)	78.7	(±7.4)
Honolulu, Hawaii [§]	65.0	(±5.0)	77.6	(±3.9)	77.9	(±4.6)	78.9	(±4.7)
Maui, Hawaii [§]	60.7	(±9.1)	73.1	(±7.9)	71.9	(±8.9)	81.6	(±7.3) [†]
Ada, Idaho [§]	50.2	(±7.6)	71.0	(±7.2)	73.3	(±6.2)	65.8	(±7.5)
Bannock, Idaho	53.4	(±10.6) [¶]	NA	NA	NA	NA	NA	NA
Bonneville, Idaho	59.9	(±9.6)	75.1	(±7.6)	74.9	(±7.6)	69.0	(±9.5)
Canyon, Idaho	54.7	(±8.8)	66.5	(±8.5)	63.3	(±8.3)	66.8	(±9.1)
Kootenai, Idaho	41.3	(±10.6) [¶]	NA	NA	NA	NA	NA	NA
Twin Falls, Idaho	50.8	(±10.0) [¶]	NA	NA	NA	NA	NA	NA
Cook, Illinois [§]	58.5	(±4.4)	72.8	(±4.5)	72.0	(±4.9)	72.7	(±4.2)

See table footnotes on page 82.

TABLE 21. (Continued) Estimated vaccination coverage for the 4:3:1:3:3:1 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2001–2008

County/Area	2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
DuPage, Illinois [§]	58.6	(±9.5)	80.3	(±6.6) [†]	NA	NA	74.8	(±7.9)
Lake, Illinois [§]	58.1	(±10.0) [¶]	75.8	(±8.0)	NA	NA	79.8	(±8.1)
Will, Illinois [§]	58.3	(±8.9)	76.6	(±7.7)	78.2	(±7.1)	75.5	(±8.1)
Allen, Indiana [§]	53.2	(±9.9)	67.7	(±9.2)	NA	NA	72.0	(±9.4)
Hamilton, Indiana [§]	66.3	(±9.3)	80.5	(±7.2) [†]	NA	NA	80.0	(±7.5)
Lake, Indiana [§]	54.7	(±9.8)	65.4	(±10.1) [¶]	NA	NA	72.4	(±9.1)
Marion, Indiana [§]	58.3	(±4.7)	70.8	(±4.2)	77.0	(±6.2)	77.0	(±6.4)
Linn, Iowa [§]	61.5	(±9.3)	74.5	(±8.1)	NA	NA	76.2	(±9.0)
Polk, Iowa [§]	58.6	(±8.6)	78.6	(±6.8)	74.9	(±7.2)	74.9	(±7.4)
Scott, Iowa	60.0	(±9.6)	69.4	(±8.8)	NA	NA	NA	NA
Johnson, Kansas [§]	67.3	(±8.1)	77.8	(±6.4)	80.1	(±4.5) [†]	79.1	(±6.9)
Sedgwick, Kansas [§]	58.3	(±8.7)	69.6	(±8.1)	73.6	(±7.2)	70.6	(±8.1)
Shawnee, Kansas	NA	NA	NA	NA	69.9	(±8.4)	77.2	(±8.7)
Fayette, Kentucky	NA	NA	76.0	(±8.1)	NA	NA	NA	NA
Jefferson, Kentucky [§]	64.5	(±8.1)	75.5	(±7.7)	77.7	(±6.6)	78.8	(±6.6)
Caddo, Louisiana	NA	NA	NA	NA	82.0	(±6.5) [†]	78.1	(±8.1)
East Baton Rouge, Louisiana [§]	62.3	(±9.2)	71.9	(±8.6)	77.4	(±7.1)	81.1	(±7.4) [†]
Jefferson, Louisiana [§]	58.8	(±9.7)	68.9	(±8.7)	76.0	(±7.0)	77.3	(±7.6)
Lafayette, Louisiana	NA	NA	69.7	(±8.9)	NA	NA	78.3	(±8.2)
Orleans, Louisiana [§]	51.4	(±5.1)	70.2	(±4.7)	63.9	(±9.3)	76.2	(±8.5)
St. Tammany, Louisiana [§]	60.5	(±9.7)	77.1	(±8.3)	79.4	(±6.4)	NA	NA
Androscoggin, Maine [§]	57.4	(±9.4)	73.9	(±8.2)	75.6	(±7.9)	75.7	(±8.3)
Aroostook, Maine	NA	NA	72.0	(±9.3)	NA	NA	NA	NA
Cumberland, Maine [§]	57.8	(±7.3)	66.7	(±7.1)	79.5	(±5.6)	73.5	(±6.7)
Kennebec, Maine [§]	58.6	(±9.8)	75.2	(±8.4)	NA	NA	77.4	(±8.3)
Penobscot, Maine [§]	57.7	(±9.7)	70.9	(±8.2)	79.7	(±6.8)	73.2	(±8.3)
York, Maine [§]	57.0	(±8.3)	74.2	(±7.2)	75.1	(±6.9)	74.6	(±8.1)
Anne Arundel, Maryland [§]	65.0	(±8.9)	81.8	(±6.8) [†]	78.8	(±7.2)	79.3	(±7.8)
Baltimore, Maryland [§]	69.3	(±8.2)	73.4	(±7.9)	81.0	(±6.2) [†]	82.2	(±6.7) [†]
Frederick, Maryland	70.8	(±9.2)	78.5	(±8.0)	NA	NA	NA	NA
Harford, Maryland	NA	NA	77.6	(±7.9)	NA	NA	NA	NA
Howard, Maryland [§]	66.5	(±9.2)	77.0	(±7.7)	NA	NA	83.1	(±7.0) [†]
Montgomery, Maryland [§]	73.8	(±6.5)	78.5	(±6.1)	84.1	(±5.3) [†]	85.8	(±5.3) [†]
Prince George's, Maryland [§]	55.7	(±8.5)	73.4	(±7.9)	69.4	(±8.0)	82.1	(±6.2) [†]
City of Baltimore, Maryland [§]	63.7	(±4.4)	75.2	(±4.3)	72.8	(±4.7)	80.2	(±5.4) [†]
Bristol, Massachusetts [§]	66.8	(±9.5)	78.2	(±7.3)	79.1	(±7.0)	NA	NA
Essex, Massachusetts	71.6	(±7.2)	73.9	(±7.8)	79.2	(±6.9)	76.6	(±8.6)
Hampden, Massachusetts	65.8	(±9.4)	78.0	(±7.8)	NA	NA	NA	NA
Middlesex, Massachusetts [§]	69.0	(±6.5)	80.8	(±5.7) [†]	86.2	(±4.3) [†]	79.5	(±6.3)
Norfolk, Massachusetts	71.1	(±8.2)	84.0	(±6.2) [†]	85.1	(±5.3) [†]	80.8	(±7.4) [†]
Plymouth, Massachusetts	66.2	(±9.2)	79.7	(±6.9)	NA	NA	77.6	(±8.6)
Suffolk, Massachusetts [§]	70.4	(±4.8)	80.0	(±4.3)	83.6	(±5.3) [†]	84.9	(±7.0) [†]
Worcester, Massachusetts [§]	66.1	(±7.4)	77.4	(±7.0)	81.8	(±6.1) [†]	77.1	(±7.6)
Kent, Michigan	65.4	(±9.5)	76.1	(±8.5)	NA	NA	77.0	(±7.8)
Macomb, Michigan [§]	63.5	(±8.9)	79.8	(±7.3)	78.2	(±7.1)	NA	NA
Oakland, Michigan	69.7	(±8.3)	78.6	(±6.8)	80.8	(±5.9) [†]	78.0	(±7.6)
Wayne, Michigan [§]	59.0	(±5.7)	74.0	(±5.7)	70.5	(±6.0)	70.3	(±7.8)
Anoka, Minnesota	68.7	(±9.3)	NA	NA	NA	NA	76.1	(±8.5)
Dakota, Minnesota	65.5	(±9.4)	79.1	(±7.4)	78.5	(±7.2)	76.5	(±8.9)
Hennepin, Minnesota [§]	64.7	(±7.8)	77.4	(±6.6)	83.5	(±5.4) [†]	76.3	(±6.1)
Ramsey, Minnesota [§]	64.2	(±9.2)	75.4	(±8.2)	81.3	(±6.3) [†]	77.9	(±7.9)
Harrison, Mississippi	NA	NA	NA	NA	74.7	(±7.6)	NA	NA
Hinds, Mississippi [§]	52.7	(±10.1) [¶]	NA	NA	72.4	(±8.4)	72.5	(±9.2)
Greene, Missouri	65.1	(±9.7)	NA	NA	NA	NA	NA	NA
Jackson, Missouri	71.4	(±8.7)	76.5	(±7.2)	81.4	(±6.2) [†]	74.3	(±7.8)
Jefferson, Missouri	NA	NA	NA	NA	NA	NA	75.7	(±9.0)
St. Charles, Missouri	NA	NA	NA	NA	NA	NA	76.7	(±8.9)
St. Louis, Missouri [§]	66.4	(±7.8)	80.6	(±6.2) [†]	80.4	(±4.9) [†]	80.3	(±6.8) [†]
City of St. Louis, Missouri	NA	NA	NA	NA	NA	NA	74.7	(±9.2)
Cascade, Montana [§]	60.3	(±9.6)	76.4	(±8.0)	76.8	(±7.1)	73.6	(±8.5)
Flathead, Montana [§]	41.2	(±9.6)	61.4	(±9.2)	58.9	(±9.5)	64.2	(±9.5)

See table footnotes on page 82.

TABLE 21. (Continued) Estimated vaccination coverage for the 4:3:1:3:3:1 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2001–2008

County/Area	2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Gallatin, Montana [§]	53.1	(±10.6) [¶]	67.5	(±8.8)	74.0	(±7.3)	73.4	(±8.3)
Lewis and Clark, Montana [§]	54.4	(±10.3) [¶]	NA	NA	NA	NA	74.7	(±8.9)
Missoula, Montana	60.1	(±9.3)	66.1	(±8.4)	65.7	(±8.0)	59.3	(±9.8)
Yellowstone, Montana	60.7	(±8.3)	72.2	(±7.1)	79.7	(±5.8)	65.9	(±9.3)
Douglas, Nebraska [§]	67.8	(±6.5)	75.4	(±5.9)	81.2	(±4.9) [†]	82.3	(±4.5) [†]
Lancaster, Nebraska [§]	60.4	(±8.3)	74.5	(±7.2)	80.2	(±6.4) [†]	75.2	(±8.5)
Sarpy, Nebraska	64.3	(±9.5)	75.3	(±7.8)	NA	NA	NA	NA
Clark, Nevada	57.3	(±5.1)	63.2	(±4.8)	59.7	(±5.2)	64.3	(±5.5)
Washoe, Nevada [§]	67.4	(±7.8)	77.4	(±6.4)	77.4	(±6.5)	78.1	(±7.0)
Grafton, New Hampshire [§]	53.7	(±10.6) [¶]	69.4	(±9.8)	NA	NA	86.3	(±6.2) [†]
Hillsborough, New Hampshire [§]	67.0	(±6.1)	79.3	(±5.2)	80.1	(±5.2) [†]	82.7	(±5.3) [†]
Merrimack, New Hampshire [§]	57.1	(±9.3)	76.3	(±7.0)	77.9	(±7.0)	80.2	(±7.8) [†]
Rockingham, New Hampshire [§]	65.6	(±7.0)	78.7	(±6.2)	77.7	(±5.8)	80.9	(±6.3) [†]
Strafford, New Hampshire [§]	60.3	(±9.8)	74.0	(±8.0)	77.6	(±7.1)	77.7	(±8.3)
Bergen, New Jersey [§]	70.3	(±8.2)	78.8	(±7.2)	84.6	(±5.9) [†]	82.9	(±7.3) [†]
Burlington, New Jersey	NA	NA	NA	NA	NA	NA	77.7	(±8.4)
Camden, New Jersey [§]	64.9	(±9.4)	NA	NA	77.3	(±7.4)	78.0	(±8.6)
Essex, New Jersey [§]	53.2	(±9.2)	69.8	(±7.3)	73.9	(±7.1)	66.8	(±7.4)
Hudson, New Jersey [§]	56.4	(±10.3) [¶]	68.1	(±8.9)	NA	NA	72.0	(±9.1)
Middlesex, New Jersey	64.0	(±8.8)	76.5	(±7.7)	77.9	(±7.2)	73.7	(±8.8)
Monmouth, New Jersey [§]	58.3	(±9.7)	NA	NA	82.4	(±6.3) [†]	74.8	(±8.2)
Ocean, New Jersey	NA	NA	70.2	(±8.9)	73.6	(±7.5)	76.1	(±8.2)
Passaic, New Jersey	66.3	(±9.2)	70.8	(±8.9)	NA	NA	NA	NA
Union, New Jersey	66.0	(±9.3)	74.2	(±8.0)	NA	NA	78.0	(±8.5)
Bernalillo, New Mexico [§]	58.4	(±6.7)	75.6	(±7.1)	72.9	(±6.3)	78.2	(±6.7)
Dona Ana, New Mexico [§]	57.3	(±9.5)	70.5	(±8.9)	NA	NA	76.1	(±8.5)
Sandoval, New Mexico	NA	NA	73.7	(±9.1)	NA	NA	72.9	(±9.9)
San Juan, New Mexico [§]	51.3	(±10.5) [¶]	71.8	(±8.8)	70.2	(±8.4)	73.7	(±9.1)
Santa Fe, New Mexico	NA	NA	70.7	(±8.9)	NA	NA	NA	NA
Bronx, New York [§]	66.9	(±7.9)	68.2	(±7.6)	62.6	(±8.9)	77.9	(±6.8)
Erie, New York [§]	63.3	(±9.4)	75.6	(±8.3)	75.4	(±7.6)	NA	NA
Kings, New York [§]	63.4	(±7.1)	67.6	(±6.8)	68.7	(±6.1)	73.3	(±5.5)
Monroe, New York [§]	59.8	(±10.0) [¶]	77.5	(±7.6)	81.5	(±6.1) [†]	80.6	(±7.5) [†]
Nassau, New York [§]	65.5	(±8.7)	75.2	(±7.5)	85.7	(±5.8) [†]	83.7	(±6.1) [†]
New York, New York	73.2	(±8.2)	86.9	(±5.6) [†]	80.3	(±6.1) [†]	78.7	(±6.5)
Queens, New York [§]	63.5	(±7.1)	75.8	(±6.7)	79.1	(±5.8)	79.7	(±6.0)
Suffolk, New York	63.6	(±8.1)	74.2	(±8.0)	77.4	(±6.7)	71.1	(±7.9)
Westchester, New York [§]	74.0	(±8.3)	78.7	(±7.7)	86.6	(±5.5) [†]	NA	NA
Durham, North Carolina	NA	NA	73.3	(±9.0)	NA	NA	NA	NA
Mecklenburg, North Carolina	66.4	(±9.2)	80.0	(±7.2)	81.2	(±6.6) [†]	76.1	(±8.4)
Wake, North Carolina [§]	69.2	(±8.8)	77.9	(±7.5)	84.7	(±5.5) [†]	82.4	(±6.2) [†]
Burleigh, North Dakota	65.1	(±9.0)	75.3	(±7.4)	78.4	(±7.0)	73.5	(±7.5)
Cass, North Dakota [§]	65.9	(±7.5)	74.6	(±6.6)	84.2	(±4.8) [†]	79.0	(±6.5)
Grand Forks, North Dakota [§]	61.3	(±8.7)	73.0	(±8.0)	81.0	(±6.5) [†]	75.9	(±8.6)
Ward, North Dakota [§]	47.9	(±9.6)	68.1	(±8.4)	78.2	(±6.7)	71.0	(±8.5)
Cuyahoga, Ohio [§]	61.6	(±4.8)	73.1	(±4.6)	77.8	(±3.9)	81.3	(±6.7) [†]
Franklin, Ohio	66.1	(±4.3)	75.6	(±3.8)	78.3	(±6.4)	73.6	(±8.6)
Hamilton, Ohio [§]	63.2	(±9.1)	74.5	(±7.9)	79.9	(±6.5)	82.6	(±7.2) [†]
Lucas, Ohio	65.3	(±9.3)	NA	NA	NA	NA	NA	NA
Montgomery, Ohio	62.0	(±9.6)	NA	NA	NA	NA	NA	NA
Cleveland, Oklahoma [§]	61.7	(±10.0) [¶]	74.8	(±8.3)	76.0	(±7.4)	77.1	(±8.6)
Oklahoma, Oklahoma [§]	59.1	(±8.2)	68.6	(±7.3)	75.9	(±6.2)	76.2	(±7.5)
Tulsa, Oklahoma	65.8	(±8.8)	76.2	(±7.0)	75.3	(±6.8)	72.9	(±7.8)
Clackamas, Oregon	64.6	(±9.1)	73.5	(±8.4)	NA	NA	70.8	(±9.4)
Lane, Oregon [§]	56.1	(±9.2)	70.9	(±8.9)	72.7	(±8.0)	74.0	(±9.0)
Marion, Oregon	62.6	(±9.3)	67.3	(±8.8)	72.1	(±8.3)	73.8	(±9.3)
Multnomah, Oregon	61.5	(±7.4)	70.7	(±7.2)	71.5	(±7.2)	70.2	(±8.0)
Washington, Oregon [§]	66.9	(±8.3)	76.5	(±6.3)	74.3	(±6.9)	81.0	(±7.5) [†]
Allegheny, Pennsylvania	71.0	(±8.3)	80.5	(±6.8) [†]	79.9	(±6.0)	80.0	(±7.0)
Delaware, Pennsylvania	NA	NA	80.0	(±7.4)	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	NA	NA	72.4	(±9.5)

See table footnotes on page 82.

TABLE 21. (Continued) Estimated vaccination coverage for the 4:3:1:3:3:1 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2001–2008

County/Area	2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
Montgomery, Pennsylvania	NA	NA	81.2	(±7.2) [†]	NA	NA	81.8	(±7.0) [†]
Philadelphia, Pennsylvania [§]	63.2	(±4.2)	75.1	(±3.8)	76.7	(±4.1)	80.0	(±3.8)
Kent, Rhode Island	72.3	(±7.2)	77.3	(±7.0)	82.6	(±5.3) [†]	76.4	(±7.5)
Newport, Rhode Island [§]	61.0	(±9.4)	NA	NA	77.6	(±7.1)	NA	NA
Providence, Rhode Island	76.6	(±4.8)	79.4	(±4.5)	77.5	(±4.3)	75.9	(±5.2)
Washington, Rhode Island	67.8	(±8.3)	76.3	(±7.1)	85.9	(±5.3) [†]	78.8	(±7.5)
Charleston, South Carolina	65.5	(±10.0) [¶]	71.1	(±9.2)	82.2	(±6.6) [†]	76.2	(±8.3)
Greenville, South Carolina	68.0	(±8.7)	78.9	(±7.7)	77.3	(±7.3)	74.5	(±8.1)
Horry, South Carolina	63.3	(±10.0) [¶]	NA	NA	NA	NA	76.8	(±9.1)
Richland, South Carolina [§]	65.8	(±9.5)	NA	NA	79.4	(±6.8)	78.2	(±7.8)
Spartanburg, South Carolina	NA	NA	NA	NA	75.7	(±7.8)	77.9	(±8.3)
York, South Carolina	NA	NA	NA	NA	NA	NA	75.9	(±8.0)
Minnehaha, South Dakota [§]	54.6	(±8.0)	74.3	(±6.9)	76.2	(±6.1)	79.5	(±6.3)
Pennington, South Dakota	58.6	(±10.4) [¶]	76.7	(±7.4)	76.3	(±7.0)	71.4	(±9.2)
Davidson, Tennessee [§]	66.6	(±4.4)	81.3	(±3.5) [†]	78.1	(±6.0)	82.4	(±6.5) [†]
Hamilton, Tennessee	65.9	(±10.4) [¶]	NA	NA	NA	NA	NA	NA
Knox, Tennessee [§]	66.4	(±9.5)	75.9	(±7.4)	84.4	(±5.9) [†]	80.4	(±8.3) [†]
Shelby, Tennessee [§]	60.0	(±4.5)	71.5	(±4.2)	73.3	(±4.5)	77.1	(±7.3)
Bexar, Texas [§]	71.2	(±3.9)	73.5	(±4.5)	72.6	(±4.5)	77.5	(±3.9)
Collin, Texas	82.2	(±8.6) [†]	NA	NA	82.5	(±6.3) [†]	NA	NA
Dallas, Texas [§]	62.2	(±3.9)	68.4	(±4.0)	72.7	(±4.6)	73.4	(±4.0)
El Paso, Texas [§]	59.6	(±4.5)	68.1	(±4.3)	69.0	(±4.0)	75.9	(±3.8)
Harris, Texas [§]	63.8	(±5.0)	64.0	(±4.7)	72.6	(±4.8)	75.6	(±5.9)
Hidalgo, Texas	NA	NA	NA	NA	74.8	(±8.3)	NA	NA
Tarrant, Texas	64.0	(±9.4)	71.6	(±8.4)	76.8	(±6.8)	73.0	(±9.0)
Travis, Texas	NA	NA	76.0	(±8.3)	74.6	(±7.9)	NA	NA
Davis, Utah [§]	62.5	(±8.8)	73.6	(±7.9)	73.2	(±8.0)	77.1	(±7.6)
Salt Lake, Utah [§]	59.6	(±6.7)	71.3	(±6.2)	75.7	(±6.4)	75.8	(±6.5)
Utah, Utah [§]	53.5	(±7.2)	73.0	(±6.5)	75.6	(±7.1)	70.7	(±7.6)
Weber, Utah	64.1	(±9.7)	72.2	(±8.2)	NA	NA	NA	NA
Addison, Vermont [§]	53.7	(±9.7)	71.9	(±8.9)	NA	NA	NA	NA
Chittenden, Vermont	64.6	(±6.8)	75.2	(±5.9)	79.6	(±5.8)	72.9	(±7.2)
Franklin, Vermont [§]	47.9	(±9.7)	60.8	(±10.1) [¶]	NA	NA	74.7	(±8.8)
Lamoille, Vermont	NA	NA	67.3	(±9.1)	NA	NA	NA	NA
Rutland, Vermont [§]	55.6	(±10.1) [¶]	69.5	(±8.4)	NA	NA	NA	NA
Washington, Vermont	60.3	(±10.0) [¶]	71.3	(±8.0)	77.2	(±6.7)	66.8	(±9.7)
Windham, Vermont [§]	51.4	(±9.8)	NA	NA	NA	NA	75.5	(±8.4)
Windsor, Vermont [§]	50.4	(±9.7)	71.8	(±8.2)	75.7	(±7.6)	NA	NA
Fairfax, Virginia [§]	62.5	(±8.6)	82.0	(±6.0) [†]	83.3	(±5.1) [†]	82.2	(±6.0) [†]
Loudoun, Virginia	NA	NA	NA	NA	NA	NA	75.8	(±8.9)
Virginia Beach, Virginia	NA	NA	NA	NA	NA	NA	74.5	(±9.0)
Clark, Washington [§]	61.5	(±9.8)	72.1	(±8.5)	74.9	(±7.7)	NA	NA
King, Washington [§]	51.9	(±4.2)	69.3	(±3.9)	70.9	(±4.7)	74.3	(±6.0)
Kitsap, Washington	NA	NA	64.2	(±9.5)	NA	NA	71.7	(±8.7)
Pierce, Washington [§]	52.9	(±8.6)	71.2	(±7.7)	73.1	(±7.4)	72.4	(±8.7)
Snohomish, Washington [§]	52.9	(±8.3)	67.7	(±7.4)	66.8	(±8.2)	71.7	(±9.2)
Spokane, Washington [§]	50.4	(±9.9)	64.1	(±9.0)	NA	NA	75.3	(±8.1)
Thurston, Washington	NA	NA	NA	NA	NA	NA	72.3	(±8.1)
Whatcom, Washington	NA	NA	NA	NA	NA	NA	77.6	(±7.5)
Yakima, Washington	57.1	(±10.3) [¶]	NA	NA	NA	NA	NA	NA
Kanawha, West Virginia	NA	NA	75.7	(±8.1)	75.9	(±7.1)	77.1	(±7.8)
Brown, Wisconsin	67.7	(±9.7)	NA	NA	NA	NA	NA	NA
Dane, Wisconsin [§]	63.1	(±9.4)	77.4	(±7.3)	83.7	(±5.9) [†]	78.0	(±8.5)
Milwaukee, Wisconsin [§]	55.9	(±4.8)	72.5	(±4.2)	75.1	(±4.8)	76.2	(±6.8)
Waukesha, Wisconsin [§]	65.3	(±8.8)	76.0	(±7.4)	83.0	(±5.7) [†]	NA	NA
Albany, Wyoming	NA	NA	70.0	(±9.8)	NA	NA	NA	NA
Campbell, Wyoming [§]	52.3	(±9.8)	66.4	(±8.6)	76.3	(±7.1)	78.0	(±7.9)
Fremont, Wyoming	50.1	(±11.2) [¶]	63.8	(±10.7) [¶]	NA	NA	NA	NA
Laramie, Wyoming	55.4	(±8.8)	73.5	(±7.3)	74.7	(±7.1)	66.1	(±8.4)
Natrona, Wyoming	62.8	(±8.2)	66.0	(±8.2)	70.5	(±7.6)	71.8	(±8.5)
Sweetwater, Wyoming [§]	53.2	(±10.0) [¶]	NA	NA	71.5	(±8.0)	71.0	(±8.5)

See table footnotes on page 82.

TABLE 21. (Continued) Estimated vaccination coverage for the 4:3:1:3:3:1 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2001–2008

County/Area	2001–2002		2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)	%	(95% CI)
United States [§]	63.4	(±0.7)	74.6	(±0.7)	76.5	(±0.8)	76.7	(±0.8)
Sample size, no.	45,052		43,308		38,607		35,447	
All selected counties	64.0	(±0.9)	74.5	(±0.9)	76.5	(±0.9)	76.8	(±1.0)
Sample size, no.	29,851		28,845		23,485		20,552	
Range, %	40.7–82.2		60.8–86.9		58.9–86.6		59.3–86.3	

Abbreviations: CI = confidence interval; DTaP = diphtheria and tetanus toxoids and acellular pertussis; DTP = diphtheria and tetanus toxoids and pertussis; Hib = *Haemophilus influenzae* type B; MMR = measles, mumps, and rubella; NA = not available.

* ≥4 doses of DTaP/DTP vaccine, ≥3 doses of polio vaccine, ≥1 dose of MMR vaccine, ≥3 doses of Hib vaccine, ≥3 doses of hepatitis B vaccine, and ≥1 dose of varicella vaccine.

† Estimate exceeds the *Healthy People 2010* objective of 80% vaccination coverage.

§ Estimates increased significantly between the first and last biennial periods ($p < 0.05$).

¶ Estimate has 95% CI half-width that exceeds 10% and might be imprecise.

TABLE 22. Estimated vaccination coverage for the 4:3:1:3:3:1:4 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Jefferson, Alabama†	38.0	(±5.1)	61.3	(±7.5)	70.6	(±8.4)
Madison, Alabama†	30.8	(±10.0) [§]	56.6	(±10.0) [§]	70.4	(±8.9)
Mobile, Alabama†	39.8	(±10.5) [§]	48.1	(±10.1) [§]	69.0	(±9.0)
Shelby, Alabama†	37.2	(±11.1) [§]	NA	NA	75.8	(±8.1)
Anchorage, Alaska†	35.7	(±6.5)	53.4	(±7.3)	67.7	(±7.1)
Fairbanks North Star, Alaska†	27.3	(±7.6)	46.5	(±8.6)	63.6	(±9.0)
Matanuska-Susitna, Alaska†	31.5	(±10.6) [§]	41.5	(±9.0)	56.0	(±9.0)
Coconino, Arizona	29.4	(±10.2) [§]	NA	NA	NA	NA
Maricopa, Arizona†	27.2	(±3.8)	48.6	(±4.7)	65.4	(±5.7)
Pima, Arizona†	31.6	(±6.2)	56.6	(±7.2)	66.4	(±8.3)
Pinal, Arizona†	20.0	(±7.7)	55.2	(±11.7) [§]	NA	NA
Yavapai, Arizona	19.1	(±7.8)	NA	NA	NA	NA
Yuma, Arizona†	26.2	(±7.9)	57.5	(±9.9)	NA	NA
Benton, Arkansas†	29.3	(±9.9)	45.5	(±10.2) [§]	68.8	(±8.5)
Pulaski, Arkansas†	39.0	(±9.7)	52.9	(±10.9) [§]	72.5	(±7.9)
Washington, Arkansas	NA	NA	NA	NA	64.2	(±8.3)
Alameda, California†	50.2	(±10.7) [§]	59.5	(±7.0)	71.3	(±7.6)
Los Angeles, California†	31.8	(±4.1)	53.9	(±4.7)	66.4	(±4.1)
Orange, California†	42.2	(±9.3)	52.2	(±9.3)	65.2	(±9.8)
Riverside, California†	32.7	(±9.3)	NA	NA	64.1	(±9.8)
San Bernardino, California†	34.4	(±9.8)	49.3	(±7.1)	63.3	(±8.2)
San Diego, California†	32.3	(±4.2)	53.7	(±7.8)	69.5	(±8.9)
Santa Clara, California	50.7	(±4.6)	59.3	(±8.0)	NA	NA
Adams, Colorado	23.4	(±8.4)	NA	NA	NA	NA
Arapahoe, Colorado†	32.1	(±9.9)	NA	NA	71.8	(±8.9)
Boulder, Colorado†	34.3	(±10.1) [§]	55.8	(±9.4)	66.4	(±9.4)
Denver, Colorado	33.5	(±9.0)	NA	NA	NA	NA
Douglas, Colorado	34.6	(±10.1) [§]	NA	NA	NA	NA
El Paso, Colorado†	28.2	(±8.0)	49.9	(±8.9)	61.6	(±9.2)
Jefferson, Colorado†	34.7	(±8.5)	59.8	(±9.1)	70.1	(±8.9)
Larimer, Colorado	NA	NA	56.3	(±10.2) [§]	NA	NA
Weld, Colorado†	24.4	(±8.9)	NA	NA	65.0	(±9.7)
Fairfield, Connecticut	61.5	(±8.0)	63.7	(±7.1)	70.5	(±7.2)
Hartford, Connecticut†	47.4	(±7.9)	65.0	(±7.3)	76.2	(±6.9)
New Haven, Connecticut†	52.2	(±8.9)	60.7	(±8.0)	67.6	(±7.6)
New London, Connecticut†	42.8	(±11.1) [§]	61.0	(±9.5)	68.5	(±8.7)
Kent, Delaware†	29.5	(±7.7)	51.5	(±9.2)	68.1	(±8.1)
New Castle, Delaware†	44.8	(±5.6)	58.9	(±6.5)	69.4	(±5.3)
Sussex, Delaware†	21.4	(±7.0)	53.1	(±8.6)	63.3	(±7.5)
District of Columbia†	28.2	(±4.2)	48.0	(±4.4)	69.8	(±4.4)
Broward, Florida†	23.0	(±7.8)	45.0	(±9.1)	63.9	(±9.6)
Duval, Florida†	33.2	(±4.5)	46.5	(±4.3)	NA	NA
Hillsborough, Florida†	32.5	(±8.7)	45.4	(±9.3)	NA	NA
Dade, Florida†	18.0	(±3.5)	47.8	(±7.3)	58.3	(±5.1)
Orange, Florida†	34.1	(±10.1) [§]	NA	NA	73.3	(±6.4)
Palm Beach, Florida†	31.7	(±9.8)	45.1	(±10.2) [§]	70.4	(±9.2)
Cobb, Georgia†	42.1	(±10.4) [§]	62.4	(±8.7)	70.2	(±8.3)
DeKalb, Georgia†	32.3	(±5.7)	51.2	(±7.2)	70.8	(±8.5)
Fulton, Georgia†	28.9	(±5.3)	56.4	(±6.4)	67.9	(±8.5)
Gwinnett, Georgia†	35.5	(±9.8)	65.9	(±8.8)	65.7	(±9.7)
Hawaii, Hawaii†	41.4	(±9.0)	50.5	(±9.5)	71.7	(±8.2)
Honolulu, Hawaii†	45.1	(±4.8)	61.3	(±5.6)	71.2	(±5.3)
Maui, Hawaii†	36.2	(±9.3)	51.6	(±10.0) [§]	71.8	(±9.0)
Ada, Idaho†	38.5	(±8.0)	55.3	(±7.5)	57.5	(±7.7)
Bonneville, Idaho†	31.9	(±9.0)	53.0	(±9.8)	63.8	(±9.4)
Canyon, Idaho†	34.3	(±9.0)	42.7	(±8.7)	55.5	(±9.6)
Cook, Illinois†	35.9	(±4.8)	48.7	(±4.8)	65.9	(±4.3)
DuPage, Illinois†	46.0	(±10.5) [§]	NA	NA	64.2	(±8.6)
Lake, Illinois†	43.3	(±10.5) [§]	NA	NA	71.2	(±9.1)
Will, Illinois†	33.7	(±10.1) [§]	60.6	(±9.7)	68.3	(±8.7)
Allen, Indiana†	32.5	(±10.0) [§]	NA	NA	61.5	(±10.1) [§]
Hamilton, Indiana†	52.8	(±11.5) [§]	NA	NA	74.5	(±7.7)

See table footnotes on page 86.

TABLE 22. (Continued) Estimated vaccination coverage for the 4:3:1:3:3:1:4 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Lake, Indiana [†]	26.7	(±8.8)	NA	NA	64.9	(±9.5)
Marion, Indiana [†]	32.2	(±4.5)	55.3	(±7.7)	67.5	(±7.7)
Linn, Iowa [†]	29.0	(±9.5)	NA	NA	68.0	(±10.0) [§]
Polk, Iowa [†]	38.6	(±9.8)	53.7	(±8.6)	67.2	(±8.1)
Scott, Iowa	33.1	(±9.4)	NA	NA	NA	NA
Johnson, Kansas [†]	51.8	(±8.8)	67.5	(±6.1)	72.4	(±7.3)
Sedgwick, Kansas [†]	34.0	(±8.7)	48.2	(±8.6)	57.8	(±8.5)
Shawnee, Kansas [†]	NA	NA	45.1	(±9.9)	72.0	(±9.2)
Fayette, Kentucky	47.7	(±11.4) [§]	NA	NA	NA	NA
Jefferson, Kentucky [†]	42.9	(±9.1)	56.7	(±9.0)	69.1	(±7.3)
Caddo, Louisiana [†]	NA	NA	53.9	(±10.5) [§]	68.0	(±9.2)
East Baton Rouge, Louisiana [†]	30.7	(±9.2)	58.6	(±9.1)	74.8	(±8.5)
Jefferson, Louisiana [†]	36.1	(±9.2)	53.3	(±9.7)	69.2	(±8.5)
Lafayette, Louisiana [†]	27.1	(±9.3)	NA	NA	71.2	(±9.0)
Orleans, Louisiana [†]	29.4	(±5.1)	41.3	(±10.0) [§]	65.6	(±9.8)
St. Tammany, Louisiana	42.6	(±10.7) [§]	55.8	(±9.7)	NA	NA
Androscoggin, Maine [†]	28.6	(±10.0) [§]	54.0	(±9.7)	68.1	(±9.0)
Aroostook, Maine	34.2	(±10.1) [§]	NA	NA	NA	NA
Cumberland, Maine [†]	35.3	(±7.9)	59.4	(±7.8)	69.0	(±6.9)
Kennebec, Maine [†]	31.7	(±9.9)	NA	NA	70.5	(±8.7)
Penobscot, Maine [†]	33.5	(±9.0)	59.3	(±10.0) [§]	64.8	(±9.1)
York, Maine [†]	30.5	(±8.4)	50.0	(±9.3)	68.1	(±8.5)
Anne Arundel, Maryland [†]	43.1	(±10.6) [§]	59.0	(±9.5)	74.8	(±8.2)
Baltimore, Maryland [†]	36.5	(±9.5)	63.0	(±8.8)	74.0	(±7.8)
Frederick, Maryland	43.8	(±10.4) [§]	NA	NA	NA	NA
Harford, Maryland	45.3	(±11.1) [§]	NA	NA	NA	NA
Howard, Maryland [†]	55.2	(±11.4) [§]	NA	NA	80.1	(±7.4) [¶]
Montgomery, Maryland [†]	45.3	(±8.2)	70.5	(±7.2)	80.1	(±6.1) [¶]
Prince George's, Maryland [†]	27.0	(±8.4)	43.2	(±8.8)	67.7	(±8.5)
City of Baltimore, Maryland [†]	32.5	(±4.5)	53.8	(±5.2)	68.6	(±7.7)
Bristol, Massachusetts	47.9	(±10.2) [§]	61.0	(±9.6)	NA	NA
Essex, Massachusetts [†]	42.0	(±9.8)	61.8	(±9.5)	69.1	(±9.4)
Hampden, Massachusetts	41.7	(±10.4) [§]	NA	NA	NA	NA
Middlesex, Massachusetts [†]	54.4	(±7.8)	74.2	(±6.3)	73.4	(±6.7)
Norfolk, Massachusetts [†]	54.8	(±9.7)	73.4	(±7.9)	75.1	(±8.0)
Plymouth, Massachusetts [†]	50.8	(±10.5) [§]	NA	NA	72.9	(±9.0)
Suffolk, Massachusetts [†]	53.5	(±5.4)	66.9	(±8.2)	75.0	(±9.3)
Worcester, Massachusetts [†]	46.1	(±9.0)	64.0	(±8.9)	71.4	(±8.0)
Kent, Michigan [†]	36.4	(±10.4) [§]	NA	NA	71.4	(±8.3)
Macomb, Michigan [†]	34.2	(±10.4) [§]	53.3	(±9.0)	NA	NA
Oakland, Michigan [†]	37.3	(±9.3)	60.4	(±8.5)	72.3	(±8.0)
Wayne, Michigan [†]	18.4	(±5.0)	37.2	(±6.4)	62.1	(±8.0)
Anoka, Minnesota	NA	NA	NA	NA	70.1	(±9.0)
Dakota, Minnesota [†]	41.6	(±10.7) [§]	56.7	(±9.8)	71.6	(±9.2)
Hennepin, Minnesota [†]	42.6	(±8.3)	66.1	(±7.5)	71.2	(±6.4)
Ramsey, Minnesota [†]	38.2	(±10.3) [§]	60.2	(±9.8)	68.1	(±8.6)
Harrison, Mississippi	NA	NA	50.3	(±10.2) [§]	NA	NA
Hinds, Mississippi	NA	NA	43.0	(±10.3) [§]	53.7	(±10.3) [§]
Jackson, Missouri [†]	35.3	(±9.4)	57.0	(±8.8)	68.9	(±8.1)
Jefferson, Missouri	NA	NA	NA	NA	67.0	(±9.8)
St. Charles, Missouri	NA	NA	NA	NA	67.7	(±9.4)
St. Louis, Missouri [†]	56.4	(±9.2)	66.3	(±6.3)	73.6	(±7.3)
City of St. Louis, Missouri	NA	NA	NA	NA	63.5	(±10.0) [§]
Cascade, Montana [†]	37.1	(±10.5) [§]	56.5	(±9.5)	68.8	(±8.8)
Flathead, Montana [†]	22.7	(±8.1)	39.2	(±9.4)	58.4	(±9.5)
Gallatin, Montana [†]	23.9	(±8.7)	52.0	(±9.0)	59.4	(±9.3)
Lewis and Clark, Montana	NA	NA	NA	NA	70.8	(±9.0)
Missoula, Montana	39.8	(±10.0) [§]	50.6	(±8.9)	51.4	(±9.8)
Yellowstone, Montana [†]	40.0	(±8.3)	62.2	(±8.1)	61.7	(±9.2)
Douglas, Nebraska [†]	51.7	(±7.2)	66.2	(±6.6)	76.7	(±5.1)
Lancaster, Nebraska [†]	43.6	(±9.3)	60.1	(±8.9)	66.2	(±9.2)
Sarpy, Nebraska	40.3	(±10.3) [§]	NA	NA	NA	NA

See table footnotes on page 86.

TABLE 22. (Continued) Estimated vaccination coverage for the 4:3:1:3:3:1:4 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Clark, Nevada†	11.6	(±3.0)	37.6	(±5.1)	50.9	(±5.6)
Washoe, Nevada†	25.4	(±6.8)	45.3	(±7.9)	64.6	(±8.0)
Grafton, New Hampshire†	39.1	(±11.7) [§]	NA	NA	71.3	(±9.8)
Hillsborough, New Hampshire†	36.8	(±6.9)	57.6	(±6.9)	74.4	(±6.5)
Merrimack, New Hampshire†	37.4	(±9.2)	59.1	(±9.4)	73.6	(±8.2)
Rockingham, New Hampshire†	42.4	(±8.4)	59.1	(±7.6)	75.3	(±6.7)
Strafford, New Hampshire†	34.6	(±10.0) [§]	60.8	(±9.4)	72.7	(±8.7)
Bergen, New Jersey†	47.6	(±10.6) [§]	66.0	(±9.3)	75.3	(±8.4)
Burlington, New Jersey	NA	NA	NA	NA	68.0	(±9.3)
Camden, New Jersey	NA	NA	54.3	(±10.1) [§]	67.9	(±9.5)
Essex, New Jersey†	32.3	(±9.1)	48.9	(±8.8)	53.9	(±9.6)
Hudson, New Jersey†	32.0	(±9.2)	NA	NA	60.9	(±10.1) [§]
Middlesex, New Jersey†	43.3	(±10.6) [§]	60.4	(±9.6)	62.5	(±9.7)
Monmouth, New Jersey	NA	NA	63.4	(±9.2)	67.5	(±8.9)
Ocean, New Jersey†	39.6	(±10.3) [§]	52.1	(±9.7)	62.8	(±9.3)
Passaic, New Jersey	37.4	(±10.5) [§]	NA	NA	NA	NA
Union, New Jersey†	36.1	(±10.5) [§]	NA	NA	66.8	(±9.5)
Bernalillo, New Mexico†	26.5	(±6.7)	47.6	(±7.3)	69.2	(±7.6)
Dona Ana, New Mexico†	16.5	(±6.6)	NA	NA	66.2	(±9.2)
Sandoval, New Mexico†	34.0	(±10.6) [§]	NA	NA	64.5	(±10.5) [§]
San Juan, New Mexico†	32.9	(±10.1) [§]	44.0	(±10.2) [§]	63.6	(±10.0) [§]
Santa Fe, New Mexico	21.2	(±8.5)	NA	NA	NA	NA
Bronx, New York†	26.8	(±7.6)	38.1	(±8.7)	66.5	(±8.0)
Erie, New York	46.7	(±10.8) [§]	53.9	(±9.8)	NA	NA
Kings, New York†	28.3	(±6.6)	43.0	(±6.8)	61.3	(±6.1)
Monroe, New York†	47.8	(±11.0) [§]	63.8	(±8.9)	68.2	(±9.2)
Nassau, New York†	49.3	(±10.6) [§]	68.2	(±9.0)	67.7	(±8.6)
New York, New York†	41.8	(±9.8)	63.6	(±8.4)	70.6	(±7.5)
Queens, New York†	35.7	(±7.2)	59.0	(±7.7)	69.0	(±6.9)
Suffolk, New York†	44.4	(±9.7)	61.8	(±8.8)	63.2	(±8.4)
Westchester, New York†	50.2	(±11.1) [§]	68.9	(±9.0)	NA	NA
Durham, North Carolina	35.2	(±10.4) [§]	NA	NA	NA	NA
Mecklenburg, North Carolina†	39.3	(±10.4) [§]	59.8	(±10.0) [§]	70.3	(±8.8)
Wake, North Carolina†	37.6	(±9.7)	67.9	(±8.4)	76.5	(±7.1)
Burleigh, North Dakota†	31.7	(±8.4)	60.0	(±8.8)	62.7	(±9.0)
Cass, North Dakota†	50.3	(±8.1)	65.0	(±7.0)	68.6	(±7.3)
Grand Forks, North Dakota†	40.8	(±9.6)	65.7	(±9.3)	70.2	(±8.9)
Ward, North Dakota†	30.9	(±9.3)	55.1	(±9.1)	67.7	(±8.5)
Cuyahoga, Ohio†	36.9	(±4.8)	57.0	(±4.7)	70.2	(±8.1)
Franklin, Ohio†	35.8	(±4.5)	61.1	(±7.9)	68.9	(±8.7)
Hamilton, Ohio†	40.9	(±10.3) [§]	60.1	(±9.3)	75.9	(±7.9)
Cleveland, Oklahoma†	36.0	(±10.7) [§]	47.6	(±9.7)	66.4	(±9.5)
Oklahoma, Oklahoma†	21.4	(±6.2)	46.4	(±7.9)	64.8	(±8.0)
Tulsa, Oklahoma†	27.4	(±8.0)	46.8	(±8.5)	59.2	(±9.0)
Clackamas, Oregon†	39.6	(±10.5) [§]	NA	NA	60.7	(±9.8)
Lane, Oregon†	40.8	(±10.2) [§]	49.8	(±10.1) [§]	67.0	(±9.6)
Marion, Oregon†	31.4	(±9.6)	50.0	(±10.0) [§]	65.0	(±9.8)
Multnomah, Oregon†	39.7	(±8.1)	55.8	(±8.5)	61.4	(±8.6)
Washington, Oregon†	41.5	(±8.2)	54.8	(±8.5)	71.6	(±8.9)
Allegheny, Pennsylvania†	50.6	(±10.7) [§]	64.1	(±8.5)	76.0	(±7.4)
Delaware, Pennsylvania	49.4	(±11.1) [§]	NA	NA	NA	NA
Lancaster, Pennsylvania	NA	NA	NA	NA	64.3	(±9.9)
Montgomery, Pennsylvania†	56.1	(±11.0) [§]	NA	NA	76.9	(±7.6)
Philadelphia, Pennsylvania†	42.3	(±4.4)	56.4	(±5.3)	71.2	(±4.3)
Kent, Rhode Island†	50.1	(±9.3)	66.4	(±8.9)	72.7	(±7.7)
Newport, Rhode Island	NA	NA	60.5	(±9.5)	NA	NA
Providence, Rhode Island†	47.1	(±5.6)	64.4	(±5.1)	67.1	(±5.9)
Washington, Rhode Island†	50.4	(±9.7)	67.4	(±8.0)	73.4	(±7.9)
Charleston, South Carolina†	45.7	(±11.8) [§]	59.7	(±10.2) [§]	67.8	(±9.2)
Greenville, South Carolina†	43.3	(±10.6) [§]	53.4	(±9.6)	67.2	(±8.5)
Horry, South Carolina	NA	NA	NA	NA	71.3	(±9.3)
Richland, South Carolina	NA	NA	66.6	(±9.1)	68.3	(±8.5)

See table footnotes on page 86.

TABLE 22. (Continued) Estimated vaccination coverage for the 4:3:1:3:3:1:4 vaccine series* among children aged 19–35 months, by county/area and biennial survey period — National Immunization Survey, selected counties, United States, 2003–2008

County/Area	2003–2004		2005–2006		2007–2008	
	%	(95% CI)	%	(95% CI)	%	(95% CI)
Spartanburg, South Carolina†	NA	NA	52.8	(±9.8)	71.3	(±9.0)
York, South Carolina	NA	NA	NA	NA	71.8	(±8.3)
Minnehaha, South Dakota†	28.7	(±8.4)	43.3	(±7.9)	55.4	(±7.4)
Pennington, South Dakota†	42.0	(±10.2)§	50.1	(±8.8)	61.0	(±9.6)
Davidson, Tennessee†	37.2	(±4.5)	56.4	(±7.3)	75.1	(±7.4)
Knox, Tennessee†	43.2	(±10.0)§	69.1	(±9.1)	74.4	(±8.9)
Shelby, Tennessee†	28.9	(±4.0)	50.1	(±4.9)	65.4	(±8.3)
Bexar, Texas†	27.9	(±4.4)	49.6	(±4.9)	70.9	(±4.2)
Collin, Texas	NA	NA	64.1	(±9.6)	NA	NA
Dallas, Texas†	25.4	(±3.6)	50.7	(±5.2)	65.1	(±4.3)
El Paso, Texas†	26.1	(±4.2)	44.5	(±4.2)	64.5	(±4.3)
Harris, Texas†	26.5	(±4.2)	51.5	(±5.6)	63.6	(±6.4)
Hidalgo, Texas	NA	NA	51.3	(±10.3)§	NA	NA
Tarrant, Texas†	24.6	(±8.0)	53.0	(±9.3)	68.0	(±9.2)
Travis, Texas†	30.2	(±9.7)	55.2	(±10.0)§	NA	NA
Davis, Utah†	44.3	(±10.2)§	52.2	(±10.1)§	62.0	(±9.5)
Salt Lake, Utah†	34.5	(±7.0)	51.8	(±7.8)	65.5	(±7.0)
Utah, Utah†	49.2	(±7.7)	56.5	(±8.3)	63.2	(±8.0)
Weber, Utah	43.1	(±10.1)§	NA	NA	NA	NA
Addison, Vermont	42.3	(±11.7)§	NA	NA	NA	NA
Chittenden, Vermont†	40.2	(±7.1)	70.2	(±6.7)	67.6	(±7.6)
Franklin, Vermont†	33.0	(±10.6)§	NA	NA	68.3	(±9.2)
Lamoille, Vermont	24.6	(±9.3)	NA	NA	NA	NA
Rutland, Vermont	26.9	(±8.9)	NA	NA	NA	NA
Washington, Vermont†	32.4	(±9.4)	57.7	(±9.3)	63.8	(±9.5)
Windham, Vermont	NA	NA	NA	NA	71.5	(±8.7)
Windsor, Vermont†	25.6	(±9.8)	46.2	(±11.9)§	NA	NA
Fairfax, Virginia†	49.1	(±8.6)	64.3	(±8.2)	74.7	(±7.1)
Loudoun, Virginia	NA	NA	NA	NA	71.2	(±9.2)
Virginia Beach, Virginia	NA	NA	NA	NA	66.3	(±9.8)
Clark, Washington†	30.5	(±9.6)	56.1	(±9.3)	NA	NA
King, Washington†	37.1	(±4.1)	53.4	(±5.3)	68.7	(±6.3)
Kitsap, Washington†	34.3	(±10.0)§	NA	NA	62.0	(±9.2)
Pierce, Washington†	33.5	(±8.4)	54.7	(±8.8)	62.6	(±9.3)
Snohomish, Washington†	30.5	(±7.4)	47.4	(±9.2)	63.0	(±9.7)
Spokane, Washington†	29.4	(±9.0)	NA	NA	65.8	(±8.8)
Thurston, Washington	NA	NA	NA	NA	66.9	(±8.4)
Whatcom, Washington	NA	NA	NA	NA	68.8	(±8.4)
Kanawha, West Virginia†	34.1	(±9.9)	51.3	(±10.0)§	68.4	(±8.7)
Dane, Wisconsin†	44.9	(±9.9)	70.4	(±8.6)	71.3	(±9.4)
Milwaukee, Wisconsin†	43.1	(±4.6)	53.5	(±5.2)	66.2	(±7.4)
Waukesha, Wisconsin†	52.3	(±10.4)§	71.4	(±8.2)	NA	NA
Albany, Wyoming	40.0	(±11.0)§	NA	NA	NA	NA
Campbell, Wyoming†	34.4	(±9.5)	47.4	(±10.0)§	65.1	(±8.9)
Fremont, Wyoming	33.4	(±10.3)§	NA	NA	NA	NA
Laramie, Wyoming	44.0	(±9.5)	49.0	(±9.0)	55.7	(±8.7)
Natrona, Wyoming†	38.4	(±8.8)	50.9	(±9.1)	67.3	(±8.6)
Sweetwater, Wyoming†	NA	NA	40.4	(±9.7)	62.5	(±8.9)
United States†	35.3	(±0.8)	53.6	(±0.9)	67.4	(±0.9)
Sample size, no.	43,308		38,607		35,447	
All selected counties	36.3	(±1.0)	54.4	(±1.1)	67.9	(±1.1)
Sample size, no.	28,845		23,485		20,552	
Range, %	11.6–61.5		37.2–74.2		50.9–80.1	

Abbreviations: CI = confidence interval; DTaP = diphtheria and tetanus toxoids and acellular pertussis; DTP = diphtheria and tetanus toxoids and pertussis; Hib = *Haemophilus influenzae* type B; MMR = measles, mumps, and rubella; NA = not available; PCV7 = 7-valent pneumococcal conjugate vaccine.

* ≥4 doses of DTaP/DTP vaccine, ≥3 doses of polio vaccine, ≥1 dose of MMR vaccine, ≥3 doses of Hib vaccine, ≥3 doses of hepatitis B vaccine, ≥1 dose of varicella vaccine, and ≥4 doses of PCV7.

† Estimates increased significantly between the first and last biennial periods ($p < 0.05$).

§ Estimate has 95% CI half-width that exceeds 10% and might be imprecise.

¶ Estimate exceeds the *Healthy People 2010* objective of 80% vaccination coverage.

Surveillance Summaries

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