

SUPPLEMENTARY TABLE 2. Estimated vaccination coverage by age 24 months* among children born 2015-2016,† by selected vaccines and doses, poverty level,§ and metropolitan statistical area (MSA) status,¶ National Immunization Survey-Child, United States, 2016-2018

Vaccine/Dose	Poverty Level		MSA, principal city (referent) (n = 11,054) % (95% CI)	MSA status	
	At or above poverty (referent) (n = 18,646) % (95% CI)	Below poverty (n = 5,431) % (95% CI)		MSA, non-principal city (n = 9,482) % (95% CI)	Non-MSA (n = 4,523) % (95% CI)
DTaP**					
≥3 doses	95.2 (94.5-95.7)	90.5 (88.4-92.4) ^{††}	94.1 (93.0-95.0)	93.7 (92.5-94.8)	93.0 (91.6-94.3)
≥4 doses	83.6 (82.4-84.8)	72.5 (69.4-75.5) ^{††}	81.3 (79.3-83.2)	80.3 (78.4-82.1)	76.1 (73.5-78.6) ^{††}
Poliovirus (≥3 doses)	94.0 (93.3-94.7)	89.5 (87.3-91.4) ^{††}	92.8 (91.6-93.9)	92.9 (91.7-94.0)	91.8 (90.3-93.2)
MMR (≥1 dose)^{§§}	91.4 (90.5-92.3)	87.5 (85.2-89.6) ^{††}	91.3 (90.1-92.4)	89.8 (88.2-91.3)	88.5 (86.6-90.2) ^{††}
Hib^{¶¶}					
Primary series	94.2 (93.4-95.0)	89.3 (87.0-91.3) ^{††}	92.8 (91.4-94.0)	93.0 (91.8-94.1)	91.3 (87.9-94.0)
Full series	82.7 (81.4-83.9)	72.7 (69.6-75.8) ^{††}	79.9 (77.9-81.9)	80.4 (78.5-82.1)	75.8 (72.4-79.0) ^{††}
HepB					
Birth dose ^{***}	74.4 (72.9-75.8)	76.9 (74.3-79.4)	74.4 (72.4-76.4)	74.9 (73.0-76.8)	77.7 (75.2-79.9) ^{††}
≥3 doses	91.9 (91.0-92.7)	89.8 (87.7-91.7)	90.8 (89.3-92.1)	91.4 (90.1-92.6)	90.9 (89.2-92.3)
Varicella vaccine (≥1 dose)^{§§}	90.8 (89.8-91.7)	87.7 (85.4-89.8) ^{††}	91.0 (89.7-92.1)	89.4 (87.8-90.9)	88.1 (86.2-89.9) ^{††}
PCV					
≥3 doses	93.4 (92.5-94.2)	88.8 (86.6-90.9) ^{††}	92.0 (90.6-93.2)	92.3 (91.1-93.5)	90.4 (87.0-93.2)
≥4 doses	84.2 (82.9-85.4)	73.6 (70.5-76.7) ^{††}	80.9 (78.8-82.9)	82.2 (80.4-83.8)	77.7 (74.3-80.9)
HepA					
≥1 dose	85.9 (84.6-87.1)	82.4 (79.9-84.7) ^{††}	86.1 (84.5-87.6)	84.6 (82.9-86.2)	79.7 (76.3-82.8) ^{††}
≥2 doses (by 35 months)	77.0 (75.1-78.9)	75.8 (71.8-79.6)	78.3 (75.4-81.2)	76.7 (74.0-79.2)	68.2 (64.2-72.1) ^{††}
Rotavirus (by 8 months)^{†††}	78.3 (76.8-79.7)	62.7 (59.5-65.8) ^{††}	73.2 (70.9-75.3)	75.2 (73.3-77.1)	69.4 (66.1-72.5)
Influenza (≥2 doses)^{§§§}	61.6 (60.0-63.2)	45.8 (42.8-48.8) ^{††}	58.6 (56.4-60.8)	57.9 (55.8-60.0)	44.1 (41.2-47.1) ^{††}
Combined 7-vaccine series^{¶¶¶}	71.9 (70.3-73.5)	60.8 (57.8-64.0) ^{††}	68.8 (66.6-71.0)	69.4 (67.3-71.5)	64.0 (60.8-67.3) ^{††}
No vaccinations	1.3 (1.1-1.6)	1.1 (0.8-1.5)	1.1 (0.8-1.4)	1.3 (1.0-1.6)	1.9 (1.4-2.4) ^{††}

Abbreviations: CI = confidence interval; DTaP = diphtheria, tetanus toxoids, and acellular pertussis vaccine; HepA = hepatitis A vaccine; HepB = hepatitis B vaccine; Hib = *Haemophilus influenzae* type b conjugate vaccine; MMR = measles, mumps, and rubella vaccine; PCV = pneumococcal conjugate vaccine.

* Includes vaccinations received by age 24 months (before the day the child turns 24 months), except for the HepB birth dose, rotavirus vaccination, and ≥2 HepA doses by 35 months. For all vaccines except the HepB birth dose and rotavirus vaccination, the Kaplan-Meier method was used to estimate vaccination coverage to account for children whose vaccination history was ascertained before age 24 months (35 months for ≥2 HepA doses).

† Data for the 2015 birth year are from survey years 2016, 2017, and 2018; data for the 2016 birth year are considered preliminary and come from survey years 2017 and 2018 (data from survey year 2019 are not yet available).

§ Children were classified as below the federal poverty line if their total family income was less than the poverty threshold specified for the applicable family size and number of children aged <18 years. Children with total family income at or above the poverty threshold specified for the applicable family size and number of children aged <18 years were classified as at or above the poverty level. A total of 982 children with adequate provider data and missing data on income were excluded from the analysis. Poverty level was based on 2014 and 2015 U.S. Census poverty thresholds (<https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html>).

¶ MSA status was determined based on household-reported county and city of residence, and was grouped into three categories: MSA principal city, MSA non-principal city, and non-MSA. MSA and principal city were as defined by the U.S. Census Bureau (<https://www.census.gov/programs-surveys/metro-micro.html>). Non-MSA areas include urban populations not located within an MSA as well as completely rural areas.

** Includes children who may have been vaccinated with diphtheria and tetanus toxoids vaccine or diphtheria, tetanus toxoids, and pertussis vaccine.

†† Statistically significant (p<0.05) difference compared with the referent group.

§§ Includes children who may have been vaccinated with measles, mumps, rubella, and varicella combination vaccine.

¶¶ Hib primary series: receipt of ≥2 or ≥3 doses, depending on product type received; full series: primary series and booster dose, which includes receipt of ≥3 or ≥4 doses, depending on product type received.

*** One dose HepB administered from birth through age 3 days.

††† Includes ≥ 2 doses of Rotarix monovalent rotavirus vaccine (RV1), or ≥ 3 doses of RotaTaq pentavalent rotavirus vaccine (RV5). The maximum age for the final rotavirus dose is 8 months, 0 days.

§§§ Doses must be at least 24 days apart (four weeks with a four-day grace period).

¶¶¶ The combined 7-vaccine series (4:3:1:3*:3:1:4) includes ≥ 4 doses of DTaP, ≥ 3 doses of poliovirus vaccine, ≥ 1 dose of measles-containing vaccine, the full series of Hib (≥ 3 or ≥ 4 doses, depending on product type), ≥ 3 doses of HepB, ≥ 1 dose of Varicella vaccine, and ≥ 4 doses of PCV.