

SUPPLEMENTARY TABLE 1. Estimated vaccination coverage* with measles, mumps, and rubella vaccine; diphtheria, tetanus, and acellular pertussis vaccine; polio; and varicella vaccine among kindergartners, by immunization program — United States,† 2021–22 school year

Immunization Program	Kindergarten population [§]	No. (%) surveyed	Type of survey conducted [¶]	Local data available online ^{**}	Vaccine (no. doses), % coverage				
					MMR ^{††}	DTaP ^{§§}	Polio ^{¶¶}	VAR ^{***}	
					(2)	(5/4)	(4/3)	(1)	(2)
National Estimate ^{†††}	3,835,130	3,536,546 (92.2)	—	—	93.0	92.7	93.1	94.6	92.7
Median ^{†††}	—	—	—	—	92.9	92.0	92.7	94.7	92.1
States, cities, and District of Columbia									
Alabama ^{§§§}	60,332	60,332 (100.0)	Census	No	≥94.9	≥94.9	≥94.9	≥94.9	Nreq
Alaska	9,790	7,463 (76.2)	Vol. response (pub.), not conducted (pvt.)	No	78.0	78.0	77.1	Nreq	76.1
Arizona	83,463	80,918 (97.0)	Census	Yes	90.6	90.5	90.9	94.6	Nreq
Arkansas ^{¶¶¶}	39,358	37,917 (96.3)	Census (pub.), vol. response (pvt.)	No	92.5	91.3	91.4	Nreq	91.9
California ^{¶¶¶}	512,144	503,722 (98.4)	Census	Yes	96.3	95.7	96.2	Nreq	96.0
Colorado	66,900	65,253 (97.5)	Census	Yes	88.4	89.1	88.8	Nreq	87.6
Connecticut ^{§§§}	35,451	35,451 (100.0)	Census	Yes	95.7	96.0	96.0	Nreq	95.5
Delaware ^{¶¶¶}	11,181	1,064 (9.5)	Stratified 2-stage cluster sample	No	96.4	96.4	97.1	Nreq	95.7
District of Columbia ^{§§§}	8,959	8,959 (100.0)	Census	Yes	82.0	82.2	84.7	Nreq	81.0
Florida ^{****}	229,432	224,412 (97.8)	Census	Yes	≥91.7	≥91.7	≥91.7	Nreq	≥91.7
Georgia ^{§§§}	118,742	118,742 (100.0)	Census	No	≥83.2	≥83.2	≥83.2	Nreq	≥83.2
Hawaii	13,368	890 (6.7)	Stratified 2-stage cluster sample	Yes	94.3	92.5	93.2	Nreq	90.2
Idaho	23,854	23,757 (99.6)	Census	Yes	83.9	83.5	84.0	Nreq	83.4
Illinois ^{§§§}	137,699	137,699 (100.0)	Census	No	92.1	91.9	91.9	Nreq	91.8
Indiana ^{****}	83,198	62,510 (75.1)	Vol. response	Yes	92.1	84.0	89.3	Nreq	91.7
Iowa ^{§§§}	40,111	40,111 (100.0)	Census	Yes	≥90.6	≥90.6	≥90.6	Nreq	≥90.6
Kansas ^{¶¶¶,****,††††}	36,526	10,788 (29.5)	Stratified 1-stage cluster sample	Yes	91.1	90.0	92.2	Nreq	90.4
Kentucky ^{¶¶¶,****}	59,233	54,206 (91.5)	Census	Yes	≥86.5	≥87.1	≥87.8	Nreq	≥85.6
Louisiana ^{§§§}	66,518	66,518 (100.0)	Census	Yes	93.7	96.2	97.6	Nreq	91.4
Maine	12,881	11,796 (91.6)	Census	Yes	96.7	96.3	96.5	Nreq	95.5

Maryland ^{¶¶¶}	53,866	52,994 (98.4)	Census	Yes	93.9	88.6	94.8	Nreq	92.7
Massachusetts ^{§§§,¶¶¶}	65,582	65,582 (100.0)	Census	Yes	96.2	96.1	96.0	Nreq	95.7
Michigan ^{§§§}	114,251	114,251 (100.0)	Census	Yes	93.6	94.1	94.8	Nreq	93.6
Minnesota	69,403	68,518 (98.7)	Census	Yes	89.0	89.0	89.3	Nreq	88.7
Mississippi ^{§§§}	36,524	36,524 (100.0)	Census	No	≥98.6	≥98.6	≥98.6	Nreq	≥98.6
Missouri ^{§§§}	71,034	71,034 (100.0)	Census	No	91.6	91.5	91.9	Nreq	91.2
Montana	NR	NA	Not Conducted	No	NR	NR	NR	Nreq	NR
Nebraska ^{¶¶¶}	25,018	24,884 (99.5)	Census	No	96.2	96.6	97.6	Nreq	95.5
Nevada	36,855	36,545 (99.2)	Census (pub.), vol. response (pvt.)	No	92.7	91.5	92.2	Nreq	92.1
New Hampshire ^{§§§,****}	12,157	12,157 (100.0)	Census	No	≥88.7	≥88.7	≥88.7	Nreq	≥88.7
New Jersey ^{§§§,****}	104,240	104,240 (100.0)	Census	Yes	≥94.1	≥94.1	≥94.1	≥94.1	Nreq
New Mexico ^{§§§}	20,736	20,736 (100.0)	Census	Yes	94.3	94.0	94.3	Nreq	93.6
New York (including New York City)	195,377	193,939 (99.3)	Census	Yes	98.0	97.3	97.4	Nreq	97.4
New York City	82,938	82,804 (99.8)	Census	No	97.3	96.5	96.4	Nreq	96.7
North Carolina ^{¶¶¶,****}	118,191	92,834 (78.5)	Vol. response	No	96.1	96.0	96.1	Nreq	95.9
North Dakota	10,755	10,394 (96.6)	Census	Yes	91.5	91.4	91.7	Nreq	91.2
Ohio	139,077	127,859 (91.9)	Census (pub.), vol. response (pvt.)	No	88.3	88.5	88.9	Nreq	87.9
Oklahoma ^{¶¶¶}	54,042	45,583 (84.3)	Vol. response	Yes	90.9	91.1	91.9	95.5	Nreq
Oregon ^{§§§,¶¶¶}	41,538	41,538 (100.0)	Census	Yes	93.0	92.0	92.3	94.7	Nreq
Pennsylvania	139,558	132,450 (94.9)	Census (pub.), vol. response (pvt.)	Yes	95.0	95.4	95.1	Nreq	94.8
Rhode Island ^{¶¶¶,****}	11,002	10,662 (96.9)	Census	Yes	97.3	97.0	97.1	Nreq	97.0
South Carolina ⁺⁺⁺⁺	58,276	15,853 (27.2)	1-stage cluster sample	No	92.7	91.0	91.9	Nreq	92.4
South Dakota ^{§§§}	12,251	12,251 (100.0)	Census	Yes	93.7	93.2	93.6	Nreq	91.9
Tennessee ^{§§§,****}	79,120	79,120 (100.0)	Census	Yes	95.8	95.2	95.4	Nreq	95.4
Texas (including Houston) ^{¶¶¶,****}	389,037	386,345 (99.3)	Census	Yes	94.0	93.7	94.0	Nreq	93.5
Houston ^{¶¶¶,****}	40,123	39,853 (99.3)	Census	No	88.2	88.3	88.3	Nreq	87.8

Utah ^{§§§}	48,995	48,995 (100.0)	Census	Yes	90.0	89.6	90.0	Nreq	92.8
Vermont ^{§§§}	6,126	6,126 (100.0)	Census	Yes	93.4	92.9	93.1	Nreq	92.6
Virginia ^{††††}	95,996	2,681 (2.8)	Stratified 2-stage cluster sample	Yes	95.5	98.3	94.7	Nreq	94.9
Washington ^{****}	87,256	84,886 (97.3)	Census (pub.), vol. response (pvt.)	Yes	92.5	91.4	91.9	Nreq	91.3
West Virginia ^{††††} ^{****}	18,070	15,446 (85.5)	Vol. response	Yes	96.5	96.5	96.6	Nreq	98.0
Wisconsin ^{††††}	64,275	62,229 (96.8)	Census (pub.), vol. response (pvt.)	Yes	≥82.6	≥82.6	≥82.6	Nreq	≥82.6
Wyoming ^{§§§}	7,382	7,382 (100.0)	Census	Yes	92.9	92.5	93.8	Nreq	93.6
Territories and Freely Associated States									
American Samoa ^{§§§}	630	630 (100.0)	Census	No	90.0	94.3	97.0	Nreq	76.8
Federated States of Micronesia ^{§§§}	1,884	1,884 (100.0)	Census	No	85.4	78.1	82.5	Nreq	Nreq
Guam	2,236	2,165 (96.8)	Census (pub.), vol. response (pvt.)	No	91.5	89.8	90.9	Nreq	Nreq
Marshall Islands ^{§§§}	1,003	1,003 (100.0)	Census	No	97.7	93.2	97.3	Nreq	Nreq
N. Mariana Islands ^{§§§}	914	914 (100.0)	Census	No	94.4	85.0	90.8	Nreq	93.5
Palau	NR	NR	Not conducted	No	NR	NR	NR	NR	NR
Puerto Rico	27,591	2,219 (8.0)	2-stage stratified sample	No	85.2	92.6	91.2	Nreq	86.0
U.S. Virgin Islands	NR	NR	Not conducted	No	NR	NR	NR	Nreq	NR

Abbreviations: DTaP = diphtheria and tetanus toxoids and acellular pertussis vaccine; MMR = measles, mumps, and rubella vaccine; NR = not reported; Nreq = not required for school entry; Polio = poliovirus vaccine; NA = not available; pub. = public; pvt. = private; VAR = varicella; vol. = voluntary.

*Estimates are adjusted for nonresponse and weighted for sampling where appropriate. Estimates based on a completed vaccine series (i.e., not vaccine-specific) use the “≥” symbol. In Kentucky, public schools reported numbers of children up-to-date with specific vaccines while most private schools reported numbers of children who received all doses of all vaccines required for school entry. Coverage might include history of disease or laboratory evidence of immunity.

†Includes five territories and three freely associated states.

§The kindergarten population is an approximation provided by each program.

†Sample designs varied by state/area: census = program attempted to include all schools (public and private), and all children within schools in the assessment, and had a student response rate of ≥90%; 1-stage or 2-stage cluster sample = schools were randomly selected, and all children in the selected schools were assessed (1-stage) or a random sample of children within the schools was selected (2-stage); voluntary response = a census with a student response rate of <90% (does not imply that participation was optional).

**Some programs publish kindergarten vaccination data online that are more detailed than the state-level estimates in this table. Examples of more detailed data include county, parish, school district, and school-level estimates.

††Most states require 2 doses of MMR; Alaska, New Jersey, and Oregon require 2 doses of measles, 1 dose of mumps, and 1 dose of rubella vaccines. Georgia, New York, New York City, North Carolina, and Virginia require 2 doses of measles and mumps, 1 dose of rubella vaccines. Iowa requires 2 doses of measles and 2 doses of rubella vaccines.

§§Pertussis vaccination coverage might include some diphtheria and tetanus toxoids, and pertussis vaccine (DTP) vaccinations if administered in another country or by a vaccine provider who continued to use DTP after 2000. Most states require 5 doses of

DTaP for school entry, or 4 doses if the fourth dose was received on or after the fourth birthday; Maryland and Wisconsin require 4 doses; Nebraska requires 3 doses. The reported coverage estimates represent the percentage of kindergartners with the state-required number of DTaP doses, except for Kentucky, which requires ≥ 5 but reports ≥ 4 doses of DTaP.

^{¶¶} Most states require 4 doses of Polio for school entry, or 3 doses if the fourth dose was received on or after the fourth birthday; Maryland and Nebraska require 3 doses. The reported coverage estimates represent the percentage of kindergartners with the state-required number of Polio doses, except for Kentucky, which requires ≥ 4 but reports ≥ 3 doses of Polio.

^{***} Reporting of varicella vaccination status for kindergartners with a history of varicella disease varied within and among states; some were reported as vaccinated against varicella and others as medically exempt.

^{†††} National estimates and medians calculated from data from 49 states and the District of Columbia (i.e., does not include Montana, Houston, New York City, American Samoa, Guam, Marshall Islands, Federated States of Micronesia, N. Mariana Islands, Palau, Puerto Rico, or U.S. Virgin Islands). Data reported represent 3,835,130 kindergartners.

^{§§§} The proportion surveyed is reported as 100%, but might be $<100\%$, but if based on incomplete information about the actual current enrollment.

^{¶¶¶} Counted some or all vaccine doses received regardless of Advisory Committee on Immunization Practices recommended age and time interval; vaccination coverage rates reported might be higher than those for valid doses.

^{****} Did not include certain types of schools, such as kindergartens in child care facilities, online schools, correctional facilities, or those located on military bases or tribal lands.

^{††††} Kindergarten vaccination coverage data were collected from a sample, and exemption data were collected from a census of kindergartners.